National Seminar on
“Bridging Gap Between Academic and Pharmaceutical Industry”
5th - 6th March 2016
Abstract Book

Sponsored by
Chhattisgarh Council of Science & Technology (Govt. of India), Raipur, INDIA

Organized By
COLUMBIA INSTITUTE OF PHARMACY, RAIPUR (CG)
Phone: 07721-266302/03, 0771-6444120
Email: cipraipur@gmail.com, Visit us at: www.columbiaiop.ac.in
Institute

Columbia Institute of Pharmacy is promoted by Janpragati Education Society (JPES). It is managed by duly constituted Governing Body. The Institute was established in 2006 – 07. The motto was to impart value based education in the field of Pharmacy. Sincere efforts are made here to craft such health care professionals who would provide exemplary services for the welfare of mankind. The Institute is currently running B. Pharm (100 seats) & M. Pharm. (Pharmaceutics & Pharmacology – 18 seats each) courses. It is an approved research center for Ph.D course, approval granted by Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.). Columbia Institute of Pharmacy has a beautiful campus at Tekari, 4 km from Chhattisgarh Legislative Assembly (Vidhan Sabha). The Institute has a glorious building with spacious class rooms. Our laboratories are well equipped with sophisticated instruments. The library houses more than 11000 books and number of national and International journals. The Institute has medicinal plant garden, CPCSEA approved Animal House. Our faculties are well qualified and experienced. They come from different parts of country and they are our prime assets. Number of research projects are undergoing at the moment. Grant for conducting Seminar/ Workshop/ Staff development Programme/ Research were received from agencies like AICTE, ICMR, DBT, DST and CCOST. We believe in providing a healthy academic atmosphere for the students to achieve their goals. We craft their personality & foster an academic environment in which the performance, goals and growth of each individual can be assessed.

Apart from Pharmacy Course, Columbia Group of Institutions provide quality education in B.E, M. Tech, MBA, Bed and Nursing.

About the Conference

The conference has especially been designed for the students who would like to develop their career in the Pharmaceutical Industry. In this national conference, Columbia Institute of Pharmacy has invited eminent personalities from leading Pharmaceutical Industries who will present their expert views and interact with delegates. The scientific sessions are designed to promote expert deliberation on industrial expectation from employee and recent development in Pharmaceutical Industry. After attending the seminar students would understand the concept of
research and development, production, packaging, quality assurance, quality control, regulatory affairs and need of Pharmaceuticals Industries.

**Objectives**

- To create a platform where the students could directly interact with experts from the Pharmaceutical industry and get a good idea regarding the requirements for a flourishing career
- To highlight and consolidate the screening strategies of interviews in Pharmaceutical industry
- To enable the student to get exposure in tackling live problems that occur in the working of an individual entity
- To provide an opportunity for participants to upgrade their curriculum from the member of industry

**Scientific Sessions**

The national conference comprises of different modules, and experts of various Pharmaceutical Industries address on following area:

- Current development in Pharmaceutical Industry and advances in technology
- Cloud computing in Pharma
- Basic role of Pharma Manufacturing
- Advances in packaging requirement and development
- Pharma corporate etiquettes
- Human resources in Pharmaceutical Company Compliance
ORGANIZING COMMITTEE

- **Chief Patron:**
  Mr. Kishore Jadwani
- **Patron:**
  Mr. Harjeet Singh Hura
- **Organizing Chairman**
  Prof. Amit Roy
- **Organizing Secretary**
  Dr. Ram Kumar Sahu

**Committee**

<table>
<thead>
<tr>
<th>Committee</th>
<th>Incharge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Registration Committee</strong></td>
<td>Ms. Pushpa Prasad</td>
</tr>
<tr>
<td></td>
<td>Mr. Shashikant Chandrakar</td>
</tr>
<tr>
<td><strong>Scientific Committee</strong></td>
<td>Dr. Ravindra Pandey</td>
</tr>
<tr>
<td></td>
<td>Dr. Shiv Shankar Shukla</td>
</tr>
<tr>
<td></td>
<td>Dr. Trilochan Satapahy</td>
</tr>
<tr>
<td></td>
<td>Dr. Rishi Paliwal</td>
</tr>
<tr>
<td><strong>Hospitality Committee</strong></td>
<td>Mr. Suman Saha</td>
</tr>
<tr>
<td></td>
<td>Mr. Ananta Choudhury</td>
</tr>
<tr>
<td></td>
<td>Mr. Bibhas Pandit</td>
</tr>
<tr>
<td></td>
<td>Mr. Vikash Sharma</td>
</tr>
<tr>
<td><strong>Reception Committee</strong></td>
<td>Ms. Pragya Baghel</td>
</tr>
<tr>
<td></td>
<td>Ms. Monika Bhairam</td>
</tr>
<tr>
<td></td>
<td>Ms. Swati Dubey</td>
</tr>
<tr>
<td></td>
<td>Mr. Sandip Tiwari</td>
</tr>
<tr>
<td><strong>Transportation Committee</strong></td>
<td>Dr. S. Prakash Rao</td>
</tr>
<tr>
<td></td>
<td>Dr. Vijay Kumar Singh</td>
</tr>
<tr>
<td></td>
<td>Mr. Raj Kumar Tiwari</td>
</tr>
<tr>
<td></td>
<td>Mr. Bharat Sharma</td>
</tr>
<tr>
<td><strong>Members</strong></td>
<td>Mr. Apurba Mukherjee</td>
</tr>
<tr>
<td></td>
<td>Mr. Ashish Majumdar</td>
</tr>
<tr>
<td></td>
<td>Mr. Rishabh Sharma</td>
</tr>
<tr>
<td><strong>Media Committee</strong></td>
<td>Mr. Srinivas Iyer</td>
</tr>
<tr>
<td><strong>Treasurer</strong></td>
<td>Mr. Lalit Grhitlahre</td>
</tr>
</tbody>
</table>

**Contact:**
Dr. Ram Kumar Sahu
Organizing Secretary
Email: seminarcolumbia@gmail.com, ramsahu79@gmail.com
Mob.: +919893577279

**Columbia Institute of Pharmacy**
Near Vidhan Sabha, Tekari, Raipur, Chhattisgarh, India
Phone: 07721-266302/03, 0771-6444120
Email: cipraipur@gmail.com, Visit us at: www.columbiaiop.ac.in
POSTER PRESENTATION
<table>
<thead>
<tr>
<th>Abstract No.</th>
<th>Authors</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BGBPI/PP-01</td>
<td>Wael M. Kamel*, Ibrahim Abulyazid, Mohga S. Abdalla, Hayat M. Sharada and Monira A. Abd El Kader</td>
<td>Evaluation of Radioprotective Effect of Salicin Isolated from Egyptian Willow Leaves against Gamma Irradiation Induced Ultrastructural and Electrophoretic Changes in Rats</td>
</tr>
<tr>
<td>BGBPI/PP-02</td>
<td>Amal M. El-Feky*, Nagwa E. Awad, Hanaa A. Kassem, Zakaria A. Elkhayat and Azza A. Matloub</td>
<td>Chemical Composition and Anti-Inflammatory Evaluation of Matricaria recutita L. Flowers</td>
</tr>
<tr>
<td>BGBPI/PP-03</td>
<td>Anas Tarik Nafei Alhamdany</td>
<td>New academic researches and their impact on the development of the pharmaceutical industry in Iraq (Samara Drug Industry [SDI], a model plant)</td>
</tr>
<tr>
<td>BGBPI/PP-04</td>
<td>Nidhal Khazaal Maraie</td>
<td>Ion-exchange Resin in the Formulation of Drug Delivery System Applied for Therapeutic Embolization Strategy</td>
</tr>
<tr>
<td>BGBPI/PP-06</td>
<td>Jiyauddin Khan, Thiviya Balakrishnan, Samer Al-Dhalli, Mohd Kaleemullah, Sri Budiasih, Rasha Saad, Muhammad Qamar, Hamid Ali Kazi, Shariq Baber, Gamal Osman Elhassan, Saeed Alfadly and Fadli Asmani</td>
<td>Effects of different concentration of starch on the drug release characteristic of immediate release Naproxen Sodium tablets</td>
</tr>
<tr>
<td>BGBPI/PP-07</td>
<td>Jiyauddin Khan, Tharani Chellandy, Mohammed Kaleemullah, Samer Al-Dhalli, Sri Budiasih, Mohamed Rasny, Riyadh Al-Rashidi, ShariqBaber, SakinaRoohi, Gamal Osman Elhassan, SaeedAlfadly and FadliAsmani</td>
<td>Design and Evaluation of controlled release matrix tablet of Aspirin by using hydrophobic polymer</td>
</tr>
<tr>
<td>BGBPI/PP-08</td>
<td>Mohammed Kaleemullah, Cheng Chyau</td>
<td>Formulation and Evaluation of Mucoadhesive</td>
</tr>
<tr>
<td>Code</td>
<td>Authors</td>
<td>Title</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>BGBPI/PP-09</td>
<td>San, Jiyauddin Khan, Ibrahim Abdullah, Samer al-dhalli, Sri Budiasih, SakinaRoohi, Hamid Ali Kazi, Mohammad Nizam and FadliAsmani</td>
<td>Control Release Tablet Dosage Form of Flurbiprofen</td>
</tr>
<tr>
<td>BGBPI/PP-09</td>
<td>Samer Al-Dhalli, Siow Chi Yin, Jiyauddin Khan, Mohammed Kaleemullah, Sri Budiasih, Nasir Hayat Khan, Rasha Saad, Hamid Kazi, Mohamed Rasny, Riyadh Al-Rashidi, Mohammad Nizam, Gamal Osman Elhassan, SaeedAlfadly and FadliAsmani</td>
<td>Preparation and Evaluation of Ketoprofen Pegs Solid Dispersions</td>
</tr>
<tr>
<td>BGBPI/PP-10</td>
<td>May Florence Dela Cruz Bacayo, Erwin Martinez Faller</td>
<td>Anti-inflammatory effects of Sandfish Sea Cucumber (<em>Holothuria Scabra</em>) formulated syrup on Albino Rat-Paw induced edema</td>
</tr>
<tr>
<td>BGBPI/PP-12</td>
<td>Parag Jain, Vivek Kumar, Kalpana Rathore, Zabeer Ahmed</td>
<td>Biological Activity of <em>Pupalia Lappacea</em> Aganist Diabetes and Interlinked Disorders like Obesity And Hyperlipidemia</td>
</tr>
<tr>
<td>BGBPI/PP-13</td>
<td>Sweety Lanjhiyana, SK Lanjhiyana</td>
<td>Isolation of Antifilarial Constituents from Seeds of <em>Pongamia pinnata</em></td>
</tr>
<tr>
<td>BGBPI/PP-14</td>
<td>Kedar Prasad Meena</td>
<td>Calcium Silicate Based Microspheres of Salbutamol Sulphate For Gastro Retentive Floating Drug Delivery: Investigate <em>In Vitro</em> And <em>In Vivo</em> Description</td>
</tr>
<tr>
<td>BGBPI/PP-15</td>
<td>Deepak Prashar, Ram Kumar Sahu</td>
<td>Responsibility of Pharmacy Professionals In Obesity Treatment and Management: Indian Scenario</td>
</tr>
<tr>
<td>BGBPI/PP-16</td>
<td>Manoj Kumar</td>
<td>Development, Chracterization and Evaluation</td>
</tr>
<tr>
<td>BGBPI/PP-17</td>
<td>Pushpendra Kumar Patel</td>
<td>Development of New Models to Evaluate CNS Related Activity in Rat</td>
</tr>
<tr>
<td>BGBPI/PP-18</td>
<td>Devesh Umesh Kapoor</td>
<td>Formulation Development and Characterization of Quantum Dots Using As a Carrier for the Delivery of Anticancer Drug</td>
</tr>
<tr>
<td>BGBPI/PP-19</td>
<td>Dr. Amit K. Dutta, Shagufta Khan</td>
<td>Reducing Airborne Pathogens, Dust and <em>Salmonella</em> Transmission In Experimental Hatching Cabinets</td>
</tr>
<tr>
<td>BGBPI/PP-20</td>
<td>Dr. Amit Kumar Dutta, Vishwaprakash Roy</td>
<td>Integrating Pharmacogenomics in Variations of DNA Sequencing- Experience Based Review</td>
</tr>
<tr>
<td>BGBPI/PP-21</td>
<td>Dr. Amit K. Dutta, Dr. Shagufta Khan</td>
<td>Degradable &amp; Microbial Activity with Precipitation At Solution-Solution Mixing Zones In Bhopal – Madhya Pradesh Environment</td>
</tr>
<tr>
<td>BGBPI/PP-22</td>
<td>Dr. Amit K. Dutta, Deepa Biswas, Dr. Devyani Sharma</td>
<td>Early Pathogenesis of Type 2 Diabetes Mellitus associated with Protein Profile of Visceral Adipose Tissues</td>
</tr>
<tr>
<td>BGBPI/PP-23</td>
<td>Brijyog*, Laliteshwar Pratap Singh, Ashish Sarkar</td>
<td>The <em>in-vitro</em> Antioxidant Activity and Total Phenolic Contents of <em>Achyranthus aspera</em> Linn</td>
</tr>
<tr>
<td>BGBPI/PP-24</td>
<td>SK Lanjhiyana, Sweety Lanjhiyana</td>
<td>Studies on Anti-filarial Activity of Phytochemicals Obtained from Plant Leaf Extracts of <em>Azadirachta indica</em> Against Experimental <em>In-vitro</em> Filarial Infections</td>
</tr>
<tr>
<td>BGBPI/PP-25</td>
<td>Khemkaran AHIRwar, Dr. Sanmati K. Jain</td>
<td>Current Status and reason behind the gap between Academic and Pharmaceutical Industry</td>
</tr>
<tr>
<td>BGBPI/PP-26</td>
<td>Harish Rajak, Avineesh Singh, Kamlesh Raghuwanshi, Vijay K Patel, Deepak K Jain</td>
<td>Isatin Substituted Hydroxamates as Novel Histone Deacetylase Inhibitors</td>
</tr>
<tr>
<td>BGBPI/PP-27</td>
<td>Debarshi Kar Mahapatra, Manish Kamble, Ruchi Shivhare, Kavita</td>
<td><em>In vitro</em> Anti-inflammatory Study of <em>Tridax procumbens</em> L. Leaves, Stems, Roots</td>
</tr>
<tr>
<td>BGBPI/PP-28</td>
<td>Pandey and Flowers extracts</td>
<td>Akansha</td>
</tr>
<tr>
<td>BGBPI/PP-29</td>
<td>Shivani Singh, Sonal Mittal, Deepak Prashar</td>
<td>Assessing the role of Polymers in Dentistry</td>
</tr>
<tr>
<td>BGBPI/PP-30</td>
<td>Deepak Prashar, Sanjay Kumar</td>
<td>Students Psychology Towards Pharmacy Education In Himachal Pradesh: A Survelogical Research</td>
</tr>
<tr>
<td>BGBPI/PP-31</td>
<td>Prashant Tiwari, Deepak Dash</td>
<td>Industry-Academia Interactions: Bridging the Gap</td>
</tr>
<tr>
<td>BGBPI/PP-32</td>
<td>Alpana Ram, Barsa B Mahapatra</td>
<td>Formulation Development for Antihypertensive Combination in Extended Release Matrix Tablets</td>
</tr>
<tr>
<td>BGBPI/PP-33</td>
<td>SahiraDadhwal, Deepak Prashar</td>
<td>Pharmaco-Therapeutical Agents in Dentistry</td>
</tr>
<tr>
<td>BGBPI/PP-34</td>
<td>Sameh S. Zaghlool*, Basim A. Shehata, Ali A. Abo-Seifand Hekma A. Abd El-Latif</td>
<td>Extracts of Ginger and Marshmallow can Protect Against Gastric Injury-Induced Experimentally in Rats</td>
</tr>
<tr>
<td>BGBPI/PP-35</td>
<td>Padma Shrivastava' Priyam Singh</td>
<td>Phytochemical Screening of <em>Moringa oleifera</em> (Moringaceae) and <em>Barleria prionitis</em> (Acanthaceae) methanolic crude leaves extract</td>
</tr>
<tr>
<td>BGBPI/PP-36</td>
<td>Neeli Rose Beck</td>
<td>The pharmaceutical research and future development in pharmaceutical industry</td>
</tr>
<tr>
<td>BGBPI/PP-39</td>
<td>Swaha Satpathy, Bharti Ahirwar</td>
<td><em>Hygrophila Spinosa</em> T. Anders: An Updated Review on Its Traditional Uses,</td>
</tr>
<tr>
<td>BGBPI/PP-40</td>
<td>Arjun Patra</td>
<td>Antimicrobial Activity of Different Extracts of <em>Delphinium Ajacis</em> Linn.</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td>-------------------------------------------------------------------</td>
</tr>
<tr>
<td>BGBPI/PP-41</td>
<td>Pradeep Kumar Samal</td>
<td>Hepatoprotective Activity of <em>Astragalus gummifer</em>gum In Thiocetamide Induce Hepatotoxicity Rats</td>
</tr>
<tr>
<td>BGBPI/PP-42</td>
<td>K. Kesavan</td>
<td>Dendrimers and Gene Delivery: Two Newfangled Pathways for Ophthalmic Drug Delivery</td>
</tr>
<tr>
<td>BGBPI/PP-43</td>
<td>Kamalpreet Bhatia, Parimal Katolkar</td>
<td><em>In Vitro</em> Antioxidant Activity of Methanolic Extract of <em>Leea asiatica</em></td>
</tr>
<tr>
<td>BGBPI/PP-44</td>
<td>Meenakshi Jaiswal</td>
<td>Needle free injection technology and its significance worldwide</td>
</tr>
<tr>
<td>BGBPI/PP-45</td>
<td>Rohit Kumar Bargah</td>
<td>Preliminary Phytochemical Screening Analysis and Therapeutic potential of <em>Tecoma Stans</em></td>
</tr>
<tr>
<td>BGBPI/PP-46</td>
<td>Sanmati K. Jain, Rahul Jain</td>
<td>Synthesis of some 1-(1,3,4-Thiadiazol-2-Yl)-3-3-Aroyl/AlkanoylThiourea Derivatives And Their Evaluation For Anticancer Activity</td>
</tr>
<tr>
<td>BGBPI/PP-47</td>
<td>Purusottam Banjare</td>
<td>Dengvaxia (Cyd-Tdv): Prosperous Implement Against Dengue Virus</td>
</tr>
<tr>
<td>BGBPI/PP-48</td>
<td>Turkane D R, Banafar A, Bhairam M</td>
<td>Bridging the Innovation Gap between Academia and Industry</td>
</tr>
<tr>
<td>BGBPI/PP-49</td>
<td>Sanjay Kumar Lanjhiyana, Sweety Lanjhiyana</td>
<td>Assessment of hypoglycemic activity and quality evaluation of a novalpolyherbal formulation</td>
</tr>
<tr>
<td>BGBPI/PP-51</td>
<td>Ruchi S. Shivhare, Disha M. Dhabarde, Manish A. Kamble, Ashwini R. Ingole, Kavita R. Pandey,</td>
<td>Hypolipidemic potentials of partially purified phytoconstituents from polyherbs: Exploration of pharmacological targets</td>
</tr>
<tr>
<td>Paper ID</td>
<td>Authors</td>
<td>Title</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>BGBPI/PP-52</td>
<td>Debarshi Kar Mahapatra, Sunita Minz</td>
<td>Designing and characterization of immunopotent lipid based particulate system using Center composite design</td>
</tr>
<tr>
<td>BGBPI/PP-54</td>
<td>Jagadish Singh, Partha Pratim Roy, Shalini Bajaland T K Maity</td>
<td>Synthesis and Evaluation of Anticancer Activity of some 1, 3, 4-Oxadiazole Derivatives against EAC bearing Mice Model.</td>
</tr>
<tr>
<td>BGBPI/PP-56</td>
<td>Amrish Kumar, Sunil Kumar Jain</td>
<td>Nose-to-brain Delivery: Role of Nano-carriers</td>
</tr>
<tr>
<td>BGBPI/PP-57</td>
<td>Rakesh Raj, Pooja Mongia Raj and Alpana Ram</td>
<td>Characterization of Transdermal Formulation by Franz Diffusion Cell Using Synthetic Membrane versus Rat Skin</td>
</tr>
<tr>
<td>BGBPI/PP-58</td>
<td>Pooja Mongia, Raj and Alpana Ram</td>
<td>Development and Optimization of Mesalazine Nanoparticles using $3^2$ Factorial Design</td>
</tr>
<tr>
<td>BGBPI/PP-59</td>
<td>Kuldeep Rajpoot*, Sunil K. Jain</td>
<td>Recent Progress in the Management of Colorectal Cancer</td>
</tr>
<tr>
<td>BGBPI/PP-60</td>
<td>Kantrol Kumar Sahu</td>
<td>Exploring mucosal immunization using Bovine Serum Albumin loaded microparticles</td>
</tr>
<tr>
<td>BGBPI/PP-61</td>
<td>Uttam Sharma, Soumya Deb, Sayantan Moitra, Ram Kumar Sahu</td>
<td>Knowledge Exchange is a Challenge in Any Sector</td>
</tr>
<tr>
<td>BGBPI/PP-62</td>
<td>Chandrima Roy, Nikita Bhakat, Uttam Sharma, Ram Kumar Sahu, Ananta Choudhury</td>
<td>Closing the gap between education and industry</td>
</tr>
<tr>
<td>BGBPI/PP-63</td>
<td>Sathi Sarkar, Uttam Sharma, Ram Kumar Sahu, Sanjib Bahadur</td>
<td>Academia Industry Collaboration</td>
</tr>
<tr>
<td>BGBPI/PP-64</td>
<td>Swati Gupta, Ritesh Kumar, Amrish Chandra, Pawan Kumar Gautamand</td>
<td>Development and Evaluation of Stomach Specific Floating Tablets of Lafutidine</td>
</tr>
<tr>
<td>BGBPI/PP</td>
<td>Authors</td>
<td>Title</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>BGBPI/PP-65</td>
<td>Surbhi Kamboj, Ritesh Kumar, Amrish Chandra, Pawan Kumar Gautamand Vijay Kumar Sharma</td>
<td>Design and Evaluation of Multiple Unit Gastroretentive Beads of Nizatidine</td>
</tr>
<tr>
<td>BGBPI/PP-66</td>
<td>Sakshi Garg, Ritesh Kumar, and Vijay Kumar Sharma</td>
<td>Formulation and Evaluation of Orodispersible Tablets of Trimethobenzamide Hydrochloride</td>
</tr>
<tr>
<td>BGBPI/PP-67</td>
<td>Bindiya Prakash, Ritu Thakur Bais</td>
<td>Conservation of Orchids</td>
</tr>
<tr>
<td>BGBPI/PP-68</td>
<td>Bharti Ahirwar, Dheeraj Ahirwar</td>
<td>Stability Study of Laboratory Prepared Ayurvedic Formulation SitopaladiChurna</td>
</tr>
<tr>
<td>BGBPI/PP-69</td>
<td>H. J. Dhongade</td>
<td>FATE OF PHYTOCHEMICAL PRODUCTS</td>
</tr>
<tr>
<td>BGBPI/PP-70</td>
<td>Banafar A, Turkane D.R., Bhairam M</td>
<td>Industry -Academic skill gap a conceptual investigation with special emphasis on the management education in India</td>
</tr>
<tr>
<td>BGBPI/PP-71</td>
<td>Dr. Sandeep Kumar</td>
<td>Clinical study of an Ayurvedic formulation – Dashmoolaa Kwatha Gandusha (Retention) in case of Mukhpaka (Stomatitis)</td>
</tr>
<tr>
<td>BGBPI/PP-72</td>
<td>Munish Kumar</td>
<td>Role of Ayurvedic Drugs in the management of skin Diseases</td>
</tr>
<tr>
<td>BGBPI/PP-73</td>
<td>Mary Ekka</td>
<td>Role of Microbial Dynamics and Enzymes during Composting of Herbal Pharmaceutical Industrial Waste</td>
</tr>
<tr>
<td>BGBPI/PP-74</td>
<td>Sanjay Kumar Bharti, Debarshi Kar Mahapatra, Vivek Asati</td>
<td>Biogenic Silver Nanoparticles for Antimicrobial Therapy</td>
</tr>
<tr>
<td>BGBPI/PP-75</td>
<td>Parvesh Kumar</td>
<td>Ayurvedic medicines in the management of emergency conditions</td>
</tr>
<tr>
<td>BGBPI/PP-76</td>
<td>Dharmendra Panwar</td>
<td>Efficacy of Ayurvedic Drugs in management of Ascites(Jalodar)</td>
</tr>
<tr>
<td>BGBPI/PP-77</td>
<td>Sandeep Kumar Singh, Dr. Arjun Patra</td>
<td>Antioxidant potential and the estimation of total phenolic and flavonoid contents of the rhizome extract of Polygonatum verticillatum and Polygonatum cirrhifolium</td>
</tr>
<tr>
<td>BGBPI/PP-78</td>
<td>Khomendra Kumar Sarwa, Vijendra Kumar Suryawanshi</td>
<td>A Potentiality of Chhattisgarh to Start Large Scale Production of Herbal Pharmaceuticals</td>
</tr>
<tr>
<td>BGBPI/PP-79</td>
<td>Debarshi Kar Mahapatra*, Manish Kamble, Ruchi Shivhare, Kavita Pandey</td>
<td>In-vitro anti-inflammatory study of <em>Tridax procumbens</em> L. leaf, stem, root, and flower extracts</td>
</tr>
<tr>
<td>BGBPI/PP-82</td>
<td>Sandeep Waghulde, Konkan Gyanpeeth Rahul Dharkar</td>
<td>Community Pharmacy Education and Pharmacist</td>
</tr>
<tr>
<td>BGBPI/PP-83</td>
<td>Pritam Juvatkar, Konkan Gyanpeeth Rahul Dharkar</td>
<td>Determination and Characterization of antimicrobial activity of bark of <em>Moringa oleifera</em> L.</td>
</tr>
<tr>
<td>BGBPI/PP-84</td>
<td>Pravin Naik, Konkan Gyanpeeth Rahul Dharkar</td>
<td>Use of Animal Handling in Modern Pharmacology</td>
</tr>
<tr>
<td>BGBPI/PP-86</td>
<td>Balak Das Kurmiand Shivani Rai Paliwal</td>
<td>Ligand Conjugated Nanocarriers for Intracellular Delivery of Anticancer Agent</td>
</tr>
<tr>
<td>BGBPI/PP-87</td>
<td>Kamleshwar Bande</td>
<td>New trends in the treatment of diabetes mellitus and its complication</td>
</tr>
<tr>
<td>BGBPI/PP-88</td>
<td>Kamal Sen, Roshni Tandey, Harneetkaur, Rajendra Mehta, Vivekananda Mandal</td>
<td>Innovating Botanical Extraction through Microwave Technology: the Case of Ursolic Acid</td>
</tr>
<tr>
<td>BGBPI/PP-89</td>
<td>Pritt Verma, Shravan K. Paswan, Surya Praksah Singh, Sajalshrivastva, Chandana Venkateswarao Rao</td>
<td>Hepatoprotective Activity of <em>Aervalanata</em> Linn. Against drug induced Induced Hepatotoxicity in Rats</td>
</tr>
<tr>
<td>BGBPI/PP-90</td>
<td>Shravan K. Paswan, Pritt Verma,</td>
<td>Evaluation of the Antioxidant &amp; Wound</td>
</tr>
<tr>
<td>Code</td>
<td>Authors</td>
<td>Title</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>BGBPI/PP-91</td>
<td>Abhisek Raj, Sajalshrivastva, Chandana Venkateswara Rao</td>
<td>Healing Activity of Ethanolic Leaves Extract of <em>Ficusreligiosa</em> in Rats</td>
</tr>
<tr>
<td>BGBPI/PP-94</td>
<td>Amrita Singh</td>
<td>Study of antihypertensive potential of <em>Hedychiumspicatum</em> leaves extract in rats.</td>
</tr>
<tr>
<td>BGBPI/PP-95</td>
<td>Shilpi Prasad</td>
<td>Collaboration between institute and industry: Challenges and opportunities</td>
</tr>
<tr>
<td>BGBPI/PP-96</td>
<td>Vijay Kumar Patel, Harish Rajak</td>
<td>Exploration of the structural requirements of azetidin-2-ones derivatives for anticancer activity by using docking studies, pharmacophoremodeling and 3D-QSAR approaches for lead identification</td>
</tr>
<tr>
<td>BGBPI/PP-97</td>
<td>Nirmala Gupta, Anita Narwariya</td>
<td>Antimutagenic potential of <em>Aegle marmelos</em> leaf extract on chromosomal aberrations</td>
</tr>
<tr>
<td>BGBPI/PP-98</td>
<td>Lakshya Dharam Dasani, Prerna Bodhankar</td>
<td>Phytochemicals: Repositories of therapeutic properties of Medicinal plants</td>
</tr>
<tr>
<td>BGBPI/PP-99</td>
<td>KritiRai, Pallavi Nair</td>
<td>Biofilm: Microbial sessile community on surfaces</td>
</tr>
<tr>
<td>BGBPI/PP-100</td>
<td>Pratima Sharma</td>
<td><em>In Vivo</em> Anti Tumor activity of Soy Isoflavones against B16F10 Melanoma induced C57BL Mice</td>
</tr>
<tr>
<td>BGBPI/PP-101</td>
<td>Priya D. Khode, Debarshi Kar Mahapatra</td>
<td><em>In situ</em> forming polymeric formulations as drug delivery systems: Recent advances and future perspectives</td>
</tr>
<tr>
<td></td>
<td>Priyanka Soni, Vishal Soni, Payal</td>
<td>Spectrophotometric and HPTLC Studies on</td>
</tr>
<tr>
<td>BGBPI/PP</td>
<td>Authors</td>
<td>Title</td>
</tr>
<tr>
<td>----------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>103</td>
<td>Sharma Vishal Soni, Arvind Kumar Jha, Jaya Dwevedi, Priyanka Soni</td>
<td>Qualitative and quantitative determination of Phytoconstituents in some Antifiertility herbs</td>
</tr>
<tr>
<td>104</td>
<td>Shah Harish, Vivek Tiwari, Rajkumar Tiwari, T.N. Shivananda.</td>
<td>Pharmacognostical evaluation of root and shoot parts of <em>Hollarhena antidysentericaroxb.</em> (Kurchi)</td>
</tr>
<tr>
<td>105</td>
<td>Yadu Omika Nanoparticle: A novel drug delivery system</td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>Gopal T. K., Chamundeeswari D.</td>
<td>Formulation of herbal flavonoids (Quercetin and Kaempferol) from <em>Vitis vinifera</em> Linn and their anti-microbial activities</td>
</tr>
<tr>
<td>107</td>
<td>Ray Supratim*, Dey Sarbani</td>
<td>Paclitaxel-induced lipid peroxidation using reduced glutathione as model marker: protective role of water extract of <em>spirulina platensis</em></td>
</tr>
<tr>
<td>108</td>
<td>Ray Supratim, Dey Sarbani</td>
<td>Exploring the role of water extract of <em>Spirulina platensis</em> on paclitaxel-induced lipid peroxidation using nitric oxide as model marker</td>
</tr>
<tr>
<td>109</td>
<td>Agrawal Khusboo, Saraf Swarnlata</td>
<td>Formulation and characterization of quercetin-loaded mesoporous silica nanoparticles for skin cancer</td>
</tr>
<tr>
<td>110</td>
<td>Diwan Prakriti</td>
<td>Development and characterization of rutin transferosomal gel: an approach for penetration enhancement</td>
</tr>
<tr>
<td>111</td>
<td>Keshwani Suresh, Sakarkar S.N., Jangde Rajendra</td>
<td>Development of self-nanoemulsifying drug delivery system (sneeds) for candesartan cilexetil</td>
</tr>
<tr>
<td>112</td>
<td>Sharma Akanksha*, Shankar Shiv</td>
<td>Role of natural antioxidants in oxidative stress induced diabetes mellitus</td>
</tr>
<tr>
<td>113</td>
<td>Amnerkar Gunde MC, ND</td>
<td>Pharmacological evaluation of Topical gel containing plant Proteinases on wound healing using excision and incision wound model</td>
</tr>
<tr>
<td>Page</td>
<td>Authors</td>
<td>Title</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>BGBPI/PP-115</td>
<td>Pradhan Pankaj,</td>
<td>Attention Deficit Disorder: Herbal Approach</td>
</tr>
<tr>
<td>BGBPI/PP-116</td>
<td>Amerendra Singh</td>
<td>Pharmacognostic and phytochemical investigation of bark and leaf of Moringa Concanensis Nimmo</td>
</tr>
<tr>
<td>BGBPI/PP-117</td>
<td>RajendraJangde, Deependra Singh.</td>
<td>Development and characterization of quercetin-loaded liposomes for enhanced wound healing</td>
</tr>
<tr>
<td>BGBPI/PP-118</td>
<td>Sachan Kapil, Singh Pranjal Kumar, Singh Ranjit</td>
<td>Phytotherapeutic approach for prevention and Treatment of Alzheimer’s disease- an overview</td>
</tr>
<tr>
<td>BGBPI/PP-119</td>
<td>Mukesh katakwar</td>
<td>Formulation and characterization of sustained release tablets of Glimepiride by using synthetic and natural polymers</td>
</tr>
<tr>
<td>BGBPI/PP-120</td>
<td>Preeti Patel and Harish Rajak</td>
<td>Qsar, docking and e-pharmacophore approach on novel series of Hdac inhibitors with Thiophen linker as anticancer agents</td>
</tr>
<tr>
<td>BGBPI/PP-121</td>
<td>Nivedita Gautam</td>
<td>Microemulsion: A Novel Ocular Drug Delivery System</td>
</tr>
<tr>
<td>BGBPI/PP-122</td>
<td>Roshni Tandey, Vivekanand Mandal,</td>
<td>Study of effect of poly aromatic hydrocarbon induced oxidative stress on the nutraceutical integrity of leafy edible plants grown in the vicinity of thermal power units</td>
</tr>
<tr>
<td>BGBPI/PP-123</td>
<td>Priyapatro, M. Thirunavoukkaarasu</td>
<td>Studies on clonal cultures &amp;Agrobacterium transformation of important Medicinal plant</td>
</tr>
<tr>
<td>BGBPI/PP-124</td>
<td>Dushyant Dewangan, Lokesh Verma, Akash Sao, Chandrakant Yadav</td>
<td>An overview on Enzyme Immobilization</td>
</tr>
<tr>
<td>BGBPI/PP-125</td>
<td>Saraswati Sahu, Sangeeta Kumari, Akash Kesharwani, Vishal Kesharwani,</td>
<td>Current Prospect of Herbal Neuraceuticals</td>
</tr>
<tr>
<td>ID</td>
<td>Authors</td>
<td>Title</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>BGBPI/PP-126</td>
<td>Pragya Baghel, Shiv Shankar Shukla</td>
<td>Bridging Gap Between Academic &amp; Pharmaceutical Industries</td>
</tr>
<tr>
<td>BGBPI/PP-127</td>
<td>Ravin Kumar Sahu</td>
<td>Microemulsions: A Novel Approach for Futuristic Transdermal Drug Delivery</td>
</tr>
<tr>
<td>BGBPI/PP-128</td>
<td>Deepa Biswas</td>
<td>Grafted Polymer</td>
</tr>
<tr>
<td>BGBPI/PP-129</td>
<td>Sandeep Minj</td>
<td>Role of Herbal Medicine in Asthma</td>
</tr>
<tr>
<td>BGBPI/PP-130</td>
<td>Debjit Bhowmik, Amrendra Singh</td>
<td>Studies on controlled release Transdermal Polymeric Matrix Film to treating Hypertension</td>
</tr>
<tr>
<td>BGBPI/PP-131</td>
<td>Palash Uiky, Omkar Sahu, Sarakshi Toppe</td>
<td>Quinoxaline, its derivatives and applications</td>
</tr>
<tr>
<td>BGBPI/PP-132</td>
<td>Yogesh Sharma, Sumit Kumar</td>
<td>Sonogenetics: A non invasive approach</td>
</tr>
<tr>
<td>BGBPI/PP-133</td>
<td>Shweta Dutta, Kamleswari Bhardwaj, Aditee Kesharwani, Hemlata Dewangan</td>
<td>Neuropeptide Y: Role in food intake and obesity</td>
</tr>
<tr>
<td>BGBPI/PP-134</td>
<td>Lucky Kumar, P. Rai</td>
<td>Recent trends in Cancer prevention and control in India-Challenges for New Millenium</td>
</tr>
<tr>
<td>BGBPI/PP-135</td>
<td>Parveen Kumar, P. Rai</td>
<td>Recent trends in market scope and opportunities of Transdermal Drug Delivery System</td>
</tr>
<tr>
<td>BGBPI/PP-137</td>
<td>Prachi Thakur, P. Rai</td>
<td>Review on, colon specific drug delivery-Strategies and <em>in-vitro in-vivo</em> evaluation</td>
</tr>
<tr>
<td>BGBPI/PP-138</td>
<td>Rohit Kaundal, P. Rai</td>
<td>Recent advances of Nasal Drug Delivery Systems-A review</td>
</tr>
<tr>
<td>BGBPI/PP-139</td>
<td>Vishal Dhiman, P. Rai</td>
<td>Recent challenges and advances in Ophthalmic Drug Delivery System</td>
</tr>
<tr>
<td>BGBPI/PP-140</td>
<td>Tushar Sharma, P. Rai</td>
<td>Transdermal Ionophoresis technique-A potential emerging Drug Delivery System</td>
</tr>
<tr>
<td>BGBPI/PP-141</td>
<td>Savita, P.Rai</td>
<td>Microchip Drug Delivery -New era of drug delivery system.</td>
</tr>
<tr>
<td>BGBPI/PP-142</td>
<td>Asish Sharma, P.Rai</td>
<td>Telemedicine-an innovating healthcare system in India</td>
</tr>
<tr>
<td>BGBPI/PP-143</td>
<td>Piyesh Mahajan, P.Rai</td>
<td>Nanosuspension -a novel approaches in drug delivery system</td>
</tr>
<tr>
<td>BGBPI/PP-144</td>
<td>Rahul thakur, P.Rai</td>
<td>Nutraceutical –a bright scope and opportunity of Indian healthcare market</td>
</tr>
<tr>
<td>BGBPI/PP-145</td>
<td>Kamal Kishore, P.Rai</td>
<td>Microencapsulation technology-New era of novel drug delivery system</td>
</tr>
<tr>
<td>BGBPI/PP-146</td>
<td>Debjit Bhowmik</td>
<td>Food Poisoning-Causes, Symptoms, Diagnosisand Remedies</td>
</tr>
<tr>
<td>BGBPI/PP-148</td>
<td>Nushrat Parveen, Triveni Kanwar, Monika Keshri, Nitu Patel, Pushpa Prasad, Ram Kumar Sahu</td>
<td>Cox-2 Regulators and Their Role in Inflammation</td>
</tr>
<tr>
<td>BGBPI/PP-149</td>
<td>Bhupendra Negi</td>
<td>Some Plant Having Antidiabetic Activity in Homeopathic Medicine</td>
</tr>
<tr>
<td>BGBPI/PP-150</td>
<td>Swapna Singh, Venkat Ram, Dilip Kumar, Salman Khan</td>
<td>Recent Advances in Nanoparticles</td>
</tr>
<tr>
<td>BGBPI/PP-151</td>
<td>Suresh Kumar Ghritlahare, Uttam Kumar Yadav, Kamal BabuAditya, Trilochan Satapathy</td>
<td>Role of Prostaglandins in Inflammation and Development of Colorectal Cancer</td>
</tr>
<tr>
<td>BGBPI/PP-152</td>
<td>Kunal Chandrakar, Dr. Trilochan Satpathy</td>
<td>Diabetes Mellitus and Its Herbal Treatment</td>
</tr>
<tr>
<td>BGBPI/PP-153</td>
<td>Hemlata Dewangan, Aditee Kesharwani, Trilochan Satapathy, Jyoti Dewangan</td>
<td>Recent Advances in Treatment of Gastro Esophageal Reflux Disease</td>
</tr>
<tr>
<td>BGBPI/PP-154</td>
<td>Debashish Paramanick, Khilesh Kumar Sahu, Jyoti Dewangan, Shiv Kumar</td>
<td>Cystatin C:A Specific Biomarker For Early Kidney Damage</td>
</tr>
<tr>
<td>BGBPI/PP-155</td>
<td>Dipesh kumar sahu, Sanjib bahadur, Uttam kumar sahu</td>
<td>Spherical Agglomeration: An Innovation In Tablet Technology</td>
</tr>
<tr>
<td>BGBPI/PP-156</td>
<td>Ananta Choudhury, Amit Roy, Suman Saha, Sanjib Bahadur, Shashikant Chandrakar, Pushpa Prasad</td>
<td>Development of Phytocontituent Based Mucoadhesive Antifungal Vaginal Gel</td>
</tr>
<tr>
<td>BGBPI/PP-157</td>
<td>Roshan sonwani, Shashikant Chandrakar, Dr. Amit Roy</td>
<td>Microemulsion: A New Phenomenon to Enhance Drug Absorption</td>
</tr>
<tr>
<td>BGBPI/PP-158</td>
<td>Niteshwari Bhargav, Ananta Chowdhury, Amit Roy</td>
<td>Recent Advances in Mucoadhesive and Bioadhesive Drug Delivery System</td>
</tr>
<tr>
<td>BGBPI/PP-159</td>
<td>Priyanka Morewala, Khushboo Verma, Moniza Nurez Khan, Prachi Gurudewan</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>BGBPI/PP-160</td>
<td>Sachin Pradhan, Sandip Prasad Tiwari, Amit Roy</td>
<td>Transdermal Drug Delivery System</td>
</tr>
<tr>
<td>BGBPI/PP-161</td>
<td>Seema Sahu, Rishi Paliwal, Amit Roy</td>
<td>Topical Gel: A Recent Approach for Novel Drug Delivery</td>
</tr>
<tr>
<td>BGBPI/PP-162</td>
<td>Kuldeep Singh Sisodia, Dr. SK Lanjhiyana</td>
<td>Polymeric Nanosystems: Emerging Multiparticulates for Carcinoma Specific Drug Delivery</td>
</tr>
<tr>
<td>BGBPI/PP-163</td>
<td>Anjali Gaute, Ananta Choudhury</td>
<td>Mucoadhesive Gel: A Novel Approach for Drug Delivery System</td>
</tr>
<tr>
<td>BGBPI/PP-164</td>
<td>Preeti Sen, Pushpa Prasad, Amit Roy</td>
<td>Therapeutic Activity of Apigenin: A Review</td>
</tr>
<tr>
<td>BGBPI/PP-165</td>
<td>Arvind Kumar, Dr. Trilochan Satapathy, Amit Roy</td>
<td>Cardiac Arrhythmias: Diagnosis, Symptoms, and different Treatments approaches</td>
</tr>
<tr>
<td>BGBPI/PP-166</td>
<td>Kamlesh Kumar Sahu, Pushpa Prasad, Amit Roy</td>
<td>Chicoric Acid : Review on A New Entity</td>
</tr>
<tr>
<td>BGBPI/PP-168</td>
<td>Debjit Bhowmik</td>
<td>Food Poisoning-Causes, Symptoms, Diagnosissand Remedies</td>
</tr>
<tr>
<td>BGBPI/PP-169</td>
<td>Chunendra Kumar, Dr. Ravindra Kumar Pandey</td>
<td>Diabetes Treatment: Traditional Medicinal Plants</td>
</tr>
<tr>
<td>BGBPI/PP-170</td>
<td>Nasreen Siddiqui, Suraj Kashyap, Suman Sahu, Suman Patel</td>
<td>Treatment of Diabetes</td>
</tr>
<tr>
<td>BGBPI/PP-171</td>
<td>Rameshwar Sahu</td>
<td>Liposome: A Novel Drug Delivery System</td>
</tr>
<tr>
<td>BGBPI/PP-172</td>
<td>Narendra Kumar Sahu, Suman Saha, Amit Roy</td>
<td>Liposome in Cancer Therapy: A Review</td>
</tr>
<tr>
<td>BGBPI/PP-173</td>
<td>Tupendra Kumar Sen, S. Prakash Rao, Vijay Singh, Amit Roy</td>
<td>Molecular Mechanism: Necrosis of Pancreatic β-cell in Type-1 and Type-2 Diabetes</td>
</tr>
<tr>
<td>BGBPI/PP-174</td>
<td>Mukesh Katakwar</td>
<td>Formulation and Characterization of Sustained Release Tablets of Glimepiride by Using Synthetic and Natural Polymers</td>
</tr>
<tr>
<td>BGBPI/PP-175</td>
<td>Mukesh Katakwar</td>
<td>Solubility Enhancement and Factor Affecting Solubilization</td>
</tr>
<tr>
<td>BGBPI/PP-176</td>
<td>Omesh Kumar Soni, Pushpendra Singh Verma, Raj Kumar Tiwari, Ananta Choudhury Prof. Amit Roy</td>
<td>Current Challenges and Factors Affecting Production Planning and Control in Pharmaceutical Industry</td>
</tr>
<tr>
<td>BGBPI/PP-177</td>
<td>Bhupendra Pradhan, Suman Saha, Amit Roy</td>
<td>Oral Controlled Drug Delivery System</td>
</tr>
<tr>
<td>BGBPI/PP-178</td>
<td>Monika Keshri, Nitu Patel, Ram Kumar Sahu, Amit Roy</td>
<td>Helicobacter pylori and Peptic Ulcer</td>
</tr>
<tr>
<td>BGBPI/PP-180</td>
<td>Pooja Tiwari, Bibhas Pandit</td>
<td>Antioxidant Prevent To the Drug Induce Lipid Peroxidation</td>
</tr>
<tr>
<td>BGBPI/PP-182</td>
<td>Onkar Prasad Sahu, Ram Kumar Sahu, Amit Roy</td>
<td>Role of Phytoconstituents for Diabetes Management</td>
</tr>
<tr>
<td>BGBPI/PP-183</td>
<td>Snigdha Tiwari</td>
<td>Role of Stem Cells in Autoimmune Disorders</td>
</tr>
<tr>
<td>BGBPI/PP-184</td>
<td>Roshni Sahu, S. Prakash Rao, Amit Roy</td>
<td>Role of Metabolizing Enzyme Inhibitors in Diabetes</td>
</tr>
<tr>
<td>ID</td>
<td>Authors</td>
<td>Title</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>BGBPI/PP-185</td>
<td>Satish.S.Meshram</td>
<td>Garlic Act as Nutraceuticals-A Review</td>
</tr>
<tr>
<td>BGBPI/PP-186</td>
<td>Tapas Panigrahi</td>
<td>Combinatorial Chemistry New Approach for Industry–Academic Partnerships</td>
</tr>
<tr>
<td>BGBPI/PP-187</td>
<td>Dugesh Kumar</td>
<td>Transdermal Drug Delivery System</td>
</tr>
<tr>
<td>BGBPI/PP-188</td>
<td>Ranjita Halder, Amit Roy</td>
<td>Treatment of Diabetic: Allopathic and Ayurvedic Drugs</td>
</tr>
<tr>
<td>BGBPI/PP-189</td>
<td>Vikram Pratap, Vikas Sen, Devnarayan</td>
<td>Antioxidants: - It’s medicinal and Pharmacological applications</td>
</tr>
<tr>
<td>BGBPI/PP-190</td>
<td>Yogesh Kumar Sahu Roshan Lal Sahu Vishvajeet Vishwas Madhu Sahu</td>
<td>Dietary Supplements Have Beneficial Health Effects in Industrialized Nation.</td>
</tr>
<tr>
<td>BGBPI/PP-191</td>
<td>Jitendra Sahu, Hemant Sahu, Khilendra Sahu</td>
<td>Tissue Culture Technique</td>
</tr>
<tr>
<td>BGBPI/PP-192</td>
<td>Ashendra kumar, Deepa Dehari</td>
<td>A Review on Drug Abuse and Addiction</td>
</tr>
<tr>
<td>BGBPI/PP-193</td>
<td>Himani Thakur</td>
<td>Recent Advances in Parenterals</td>
</tr>
<tr>
<td>BGBPI/PP-194</td>
<td>Urmila, Shashikant Chandrakar</td>
<td>Microemulsion systems: A strategy for transdermal drug delivery</td>
</tr>
<tr>
<td>BGBPI/PP-195</td>
<td>Adeep Kujur*</td>
<td>Anthelmintic and Antioxidantactivity Of <em>Solanum nigrum</em> Linn. Leaf Extract- In-Vitro evaluation</td>
</tr>
<tr>
<td>BGBPI/PP-196</td>
<td>SaurabhShrivastava, Lokesh Kumar, Mukesh Kumar Singh, Bina Gidwani, Anshita Gupta, Chanchal Deep Kaur</td>
<td>Antifilarial Activity of <em>Butea Monosperma</em> Linn</td>
</tr>
<tr>
<td>BGBPI/PP-197</td>
<td>Heena Parwin and Wasim Raja</td>
<td>Evaluation of Wound Healing Activity of <em>Acacia Arabica</em> Extract on <em>Swiss Albino</em> Mice</td>
</tr>
<tr>
<td>BGBPI/PP-198</td>
<td>Indu Lata Kanwar and Preeti K. Suresh</td>
<td>Hydroxyapatite-Based Nanocomposites for Local Drug Delivery to Periodontal Pockets</td>
</tr>
<tr>
<td>BGBPI/PP-199</td>
<td>Kamta Prasad Namdeo, Neeli Rose Beck</td>
<td>Screening Of Anti-Inflammatory Potential of <em>Berberis Coriaceae</em> Leaves by HRBC Membrane Stabilization</td>
</tr>
<tr>
<td>BGBPI/PP-200</td>
<td>Khusboo Agrawal, Swarnlata Saraf</td>
<td>Formulation and Evaluation Of flavonol-</td>
</tr>
<tr>
<td>BGBPI/PP-201</td>
<td>Krishna Yadav</td>
<td>Loadedmesoporous Silica Nanoparticles for Skin Cancer</td>
</tr>
<tr>
<td>BGBPI/PP-202</td>
<td>Manish Kumar Rathore, Khushbu Sao, Hitesh Kumar Sahu, Manu Dewangan Raseswar Benarjee</td>
<td>Floating Drug Delivery System –An Approach to Oral Controlled Drug Delivery</td>
</tr>
<tr>
<td>BGBPI/PP-204</td>
<td>Mukesh K. Singh, Hemant Kumar Dhongade, Dulal Krishna Tripathi</td>
<td>Evaluation of Total Phenolic Contents and Free Radical Scavenging Activity of Aqueous Extract of Orthosiphon Pallidus Royle</td>
</tr>
<tr>
<td>BGBPI/PP-206</td>
<td>Sakshi Tiwari; Divya Sahu; Rakhi Mishra; Sonal Sharma</td>
<td>A Review on Present Treatment of Congestive Heart Failure</td>
</tr>
<tr>
<td>BGBPI/PP-207</td>
<td>Sanjib Bahadur, Amit Roy</td>
<td>Using Functional Excipients In Designing Dosage Forms</td>
</tr>
<tr>
<td>BGBPI/PP-208</td>
<td>Surendra H. Bodakhe, Neeli Rose Beck</td>
<td>Healing Potential of Gel Containing Extract of Berberis Coriaceae on Excision Wounds in Wistar Rats</td>
</tr>
<tr>
<td>BGBPI/PP-209</td>
<td>Yogesh Kumar Sahu, Suman Saha</td>
<td>Liposome: An Update</td>
</tr>
<tr>
<td>BGBPI/PP-210</td>
<td>Vaibhav Tripathi, Surendra Saraf</td>
<td>Role of Academicians in Herbal Drug Analysis – A Review</td>
</tr>
<tr>
<td>BGBPI/PP-211</td>
<td>Kuldeep Singh Sisodia, Dr. SK Lanjhiyana</td>
<td>Review Polymeric Nanosystems: Emerging Multiparticulates for Carcinoma Specific Drug Delivery</td>
</tr>
<tr>
<td>BGBPI/PP-212</td>
<td>Sandeep Prasad Tiwari, Lalita Sandey</td>
<td>Formulation and Invitro Evaluation of Floating Microsphere</td>
</tr>
<tr>
<td>BGBPI/PP-213</td>
<td>Mukesh Tandi, Sameer Sharma, Somash Gupta, Gosiya Mahtab, Sonal Goyal, Arti Tripathi</td>
<td>Milli- Q [Water Purifier]</td>
</tr>
<tr>
<td>ID</td>
<td>Authors</td>
<td>Title</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>BGBPI/PP-214</td>
<td>Roman Kumar Aneshwari, Vishal Jain</td>
<td>Pharmacognostical, Biotechnological and Pharmacological Evaluation of Some Ethnic Plants Formanagement of Lymphatic Filariasis</td>
</tr>
<tr>
<td>BGBPI/PP-216</td>
<td>Shweta Ramkar</td>
<td>Osmotic Drug Delivery System</td>
</tr>
<tr>
<td>BGBPI/PP-217</td>
<td>Suman Saha, Amit Roy</td>
<td>Efflux Pumps: A Double Edge Sword in Circumvention of Multi-Drug Resistance of Cancer Cells</td>
</tr>
<tr>
<td>BGBPI/PP-218</td>
<td>Preeti Sahu, Jagriti Surojiya, Divya Singh, Pranav Pachouri, Amit Roy</td>
<td>Ocular Drug Deliver and the Importance of Microemulsion As A Potential Delivery System</td>
</tr>
<tr>
<td>BGBPI/PP-219</td>
<td>Anju Anant</td>
<td>Enhancement of Oral Bioavailability Use of Pamam Dendrimer</td>
</tr>
<tr>
<td>BGBPI/PP-220</td>
<td>Astha Pathak</td>
<td>White Pumpkin Juice-A New Energy Drink</td>
</tr>
<tr>
<td>BGBPI/PP-221</td>
<td>Indraman Sahu, Ashutosh Dinkar, Narayan Hemnani, Narayan Lal</td>
<td>A Review on Vaccination</td>
</tr>
<tr>
<td>BGBPI/PP-222</td>
<td>Pragya Baghel, Amit Roy, Sanjib Bahadur, Monika Bhairam</td>
<td>Chronopharmacotherapy – A Therapeutic Approach towards Endemic Diseases</td>
</tr>
<tr>
<td>BGBPI/PP-223</td>
<td>Pratiksha Tiwari</td>
<td>Psoriasis: Affliction of Derma</td>
</tr>
<tr>
<td>BGBPI/PP-224</td>
<td>Meenakshi Ratra, Rajesh Gupta</td>
<td>Forthcoming Scenarios and Traits of Herbal Drug Discovery in Herbal Medicines</td>
</tr>
<tr>
<td>BGBPI/PP-225</td>
<td>Rashmi Suryavanshi, Tripti Banjare, Chandrakanta Parkar, Swarnali Das Paul</td>
<td>Formulation of an Herbal Insect Repellant</td>
</tr>
<tr>
<td>BGBPI/PP-226</td>
<td>Parisha Agrawal, Govind Sharma, Yogesh Vaishnav, Shekhar Verma</td>
<td>Plant Based Herbal Nutraceuticals: A Re-Emerging Health Aid</td>
</tr>
<tr>
<td>BGBPI/PP-227</td>
<td>Pranay Soni</td>
<td>In Vitro Anticataract Activity of Cleome gynandra on Goat Lenses</td>
</tr>
<tr>
<td>BGBPI/PP-228</td>
<td>Rakesh Tirkey</td>
<td>Evaluation of Antidiabetic Activity of Gisekia</td>
</tr>
<tr>
<td>BGBPI/PP-229</td>
<td>Sonkar S.K., Lanjhiyana S.K.</td>
<td><em>pharnaceoides</em> in Streptozotocin Induced Diabetic Rat</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>BGBPI/PP-230</td>
<td>Madhulika Pradhan, Deependra Singh, Manju Singh</td>
<td>Applicability of Polyelectrolyte Complex and Theory of Polyelectrolytes in Various Solutions and at Various Surfaces</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Steroid Based Novel Topical Formulation for Treatment of Psoriasis</td>
</tr>
</tbody>
</table>
Evaluation of Radioprotective Effect of Salicin Isolated from Egyptian Willow Leaves against Gamma Irradiation Induced Ultrastructural and Electrophoretic Changes in Rats

Wael M. Kamel¹*, Ibrahim Abulyazid², Mohga S. Abdalla³, Hayat M. Sharada³ and Monira A. Abd El Kader¹

¹Biochemistry Department, Division of Genetic Engineering and Biotechnology, National Research Centre, 33 Bohouth Street, Dokki, Giza, Egypt affiliation ID: 60014618.
²Biological Application Department, Atomic Energy Authority, Egypt
³Chemistry Department, Faculty of Science, Helwan University, Egypt

Email: wmkamel83@hotmail.com

ABSTRACT

The study aimed to investigate efficiency of salicin which was isolated from Egyptian willow leaves (*Salix subserrata*) to resist irradiation effect on the ultrastructural level, electrophoretic protein, lipoprotein and isozymes. The salicin dose required for the therapeutic investigation (1/20 of LD₅₀ dose) was about 150 mg / Kg. The total antioxidant capacity for salicin fraction was about 57.88 ± 0.08 mg gallic acid / gram. The electron microscopic examination showed that irradiation caused severe ultrastructural lesions in liver and kidney tissues. The overall results of the microscopic ultrastructure in the liver tissue revealed that salicin showed the most suitable antagonistic effect against irradiation on the liver ultrastructure of irradiated salicin pre-treated group. In the kidney tissue, the overall results showed that salicin prevented the necrotic effect of irradiation in irradiated salicin pre- and post-treated groups. At the molecular levels, irradiation caused various abnormalities in all electrophoretic patterns (protein, lipoprotein and zymogram). It caused qualitative alterations represented by disappearance of some or all normal bands with appearance of abnormal bands and/or deviation of normal bands to be appeared with another data (Rfs, Mwts and B % values). It caused quantitative alterations represented by changing B % of the bands appeared with normal R_f and Mwts. For electrophoretic protein pattern, salicin administration could not prevent the irradiation effect on the bands arrangement in all irradiated salicin treated groups. For lipoprotein pattern, salicin administration reduced the irradiation effect in the irradiated salicin pre-post-treated group (SI = 0.50). For the electrophoretic esterase pattern, salicin minimized the irradiation effect on the band number and arrangement in the irradiated salicin simultaneous treated (SI = 0.80). For catalase pattern, it prevented the irradiation effect in the irradiated salicin pre-post-treated group. For peroxidase pattern, salicin showed the highest ameliorative effect against irradiation in the irradiated salicin post-treated group (SI = 1.00).
Chemical Composition and Anti-Inflammatory Evaluation of *Matricaria recutita* L. Flowers

Amal M. El-Feky¹, Nagwa E. Awad¹, Hanaa A. Kassem², Zakaria A. Elkhayat³ and Azza A. Matloub¹

¹Pharmacognosy Department, National Research Centre, Dokki, Cairo, 12311, Egypt
²Pharmacognosy Department, Faculty of Pharmacy, Cairo University, AlkasrAlani, Cairo, Egypt
³Medical Biochemistry Department, National Research Centre, Dokki, Cairo, 12311 Egypt

Email: ammelfeky@hotmail.com

ABSTRACT

The *Matricaria recutita* L. flowers were selected to be studied. The anti-inflammatory effect as well as the chemical composition of the air dried powdered flowers have been evaluated. It was found that the crude alcoholic and different successive extracts of the flowers revealed various significant anti-inflammatory activities against carrageenan induced edema. Petroleum ether and methanol extracts showed the best anti-inflammatory activity against interleukin-6 than the other successive extracts. The chemical constitutions of the crude alcoholic extract of the flowers which were analyzed quantitatively showed that this species contains total flavonoid (6.32%), steroidal (10.53%), triterpenoidal (16.72%), protein (15.5%) and carbohydrate (14%). The HPLC analysis was used to identify the total amino acids, confirmed presence of the essential (21.48%) and non essential (78.52%) amino acids. Also, it was used to identify mucilage which was isolated from the crude extract and then evaluated for its anti-inflammatory activity. After saponification of the petroleum ether extract, the chromatographic analysis by GC/MS technique confirmed presence of the unsaponifiable (57%) and saponifiable (32%) matters. This was in addition to isolation of Apigenin-7-O-β-D-glucopyranoside, quercetin, quercetin-7-O-β-D-glucopyranoside, luteolin-7-O-β-D-glucopyranoside, kaempferol-7-O-β-D-glucopyranoside and gossypetin-7-O-β-D-glucopyranoside from the methanol extract and then evaluation of these compounds their anti-inflammatory effects. This experimental work was taken from our book entitled "Phytochemical and Anti-Inflammatory Studies of Some Asteraceae Plants "Lap Lambert Academic Publishing GmbH KG, 2014. ISBN 3659647942, 9783659647949."
New Academic Researches And Their Impact On The Development Of The Pharmaceutical Industry In Iraq (Samara Drug Industry [SDI], A Model Plant)

Anas Tarik Nafei Alhamdany

Department of Pharmaceutics, College of Pharmacy, University of Al-Mustansiriya, Baghdad-Iraq

ABSTRACT

The attempts to collaborate between academics and pharmaceutical industry is becoming an essential module of today’s drug discovery efforts; but the main goal is to bridge the gap between the research community and the pharmaceutical industry due to the rapid increase of global knowledge, thus accelerating the innovation process from bench to the bedside of industry demands a strategic relationships that go beyond the conventional funding of research projects. The role of the academic research should be technologically advanced in the coming centuries to play an important part in the pharmaceutical industries and in turn economic growth. In our research we will focus on the formulation of new pharmaceutical products at the universities that should benefit from reciprocated relationship between the biggest pharmaceutical companies in Iraq as Samara Drug Industry [SDI], a model plant and the governmental research institutions as the College of Pharmacy/ Al-Mustansiriyah University; to industrialize the applied developed research products. As a result the more formal and informal collaboration that reveals between academic and pharmaceutical industries provides an insight into the future of academic–industry collaborations. In this context the information and communication technologies are partaking on the development of the next generation of collaborative partnerships; the scientific avail of all of this is in the interest of patients and keeps pace with the progress in the global health system.
Ion-exchange Resin in the Formulation of Drug Delivery System Applied for Therapeutic Embolization Strategy

Nidhal Khazaal Maraie

College of Pharmacy, University of AL-Mustansiriya, Baghdad, Iraq

Email: dr_nidhal_khazaal@yahoo.com

ABSTRACT

The perfectly spherical microspheres of the ion-exchange resins diethylaminoethyltrisacryl (DEAE) has been successfully used for achieving mechanical occlusion of vascular lumen. In this study; diclofenac sodium is reversibly adsorbed onto DEAE microspheres (28.3 g drug / 100 g of microspheres). The dissolution profile showed rapid release of the drug from the loaded microspheres, and since this may lead to dramatic decrease in the drug concentration before reaching of the microspheres to the targeted site, therefore, this study is aimed to microencapsulation of the drug loaded on DEAE microspheres which is performed for the first time using PLGA as a coating polymer and applying two different methods of microencapsulation. The results showed increasing the amount of PLGA leading to more retardation in the release of the drug through affecting core: coat ratio and the mechanism of drug release. It is also found that applying emulsification / solvent evaporation method with 60% w/w PLGA gave regular retarded release microcapsules with better sphericity, which may be easily injected by a catheter at the required site and offers a new drug delivery system and new application for diclofenac sodium in the promising strategy of using embolization particles with anti – inflammatory activity.
Evaluation Of Enhancing Effect Of 20% Glyceryl Monooleate On The Skin Permeation Of Clindamycin Emulsion Formulation

Fadli A.1*, Aisyah J.1,2, Jiyauddin K.1, Rasha S.1, Brian T.1, Samer A. D.1, S. Budiasih1, M. Kaleemullah1, Mohammad Nizam A. G.1, Ibrahim A.1, Todo H.2, Wesam A. R.2, Sugibayashi K.2 and Eddy Y.1

1School of Pharmacy, Management & Science University, 40100 Shah Alam, Selangor Darul Ehsan, Malaysia
2Faculty of Pharmaceutical Sciences, Josai University, 1-1 Keyakidai, Sakado, Saitama 350-0295, Japan

ABSTRACT

The aim of this study was to formulate semisolid clindamycin phosphate containing appropriate liquid crystal as Skin Penetration Enhancers (SPEs) in order to overcoming the stratum corneum barrier. Topical route of administration is the most applicable and preferable as compared with oral administration. Several advantages of topical routes are produce high efficacy and safety. However, topical formulation possess minor problem with clindamycin phosphate due to its larger molecular weight and highly hydrophilic properties. Hence, it’s found to be difficult to penetrate through skin membrane. As a consequence, this study was aimed to enhance skin permeability of clindamycin phosphate by incorporated with liquid crystal. Liquid crystal was selected as chemical approaches in order to increase the drug permeation through the primary barrier of skin penetration, known as stratum corneum (SC). In vitro drug release study of prepared formulation was performed with the 30% of 40mM clindamycin phosphate incorporated with 20% GMO LCs and 50% of purified water diluted with 5% F127. This combination was later incorporated in semisolid dosage form for efficient topical drug delivery. The drug permeation of clindamycin phosphate with and without GMO which topically applied on the pig’s ear skin was evaluated. Pig ear skin was used as a test membrane for drug permeation. Higher amount of drug permeation was detected in formulation of clindamycin phosphate containing liquid crystal as compared to control formulation.
Effects Of Different Concentration Of Starch On The Drug Release Characteristic Of Immediate Release Naproxen Sodium Tablets

Jiyauddin Khan1*, Thiviya Balakrishnan1, Samer Al-Dhalli1, Mohd Kaleemullah1, Sri Budiasih1, Rasha Saad1, Muhammad Qamar1,2, Hamid Ali Kazi1, Shariq Baber1, Gamal Osman Elhassan3, Saeed Alfadly3 and Fadli Asmani1

1School of Pharmacy, Management & Science University, 40100 Shah Alam, Selangor Darul Ehsan, Malaysia
2Faculty of Pharmacy, MAHSA University, 50490 Kuala Lumpur, Wilayah Persekutuan, Malaysia
3Unaizah College of Pharmacy, Qassim University, Qassim, Kingdom of Saudi Arabia

ABSTRACT

Naproxen sodium is a non-steroidal anti-inflammatory drug (NSAID) with analgesic and antipyretic properties. Naproxen sodium is an odorless, crystalline powder white to creamy in colour, soluble in water and methanol. Naproxen is rapidly and completely absorbed from GI tract with an in-vitro bioavailability of 95%. The elimination half-life of Naproxen sodium was found to be approximately 17 hrs. Naproxen sodium tablets are indicated for the treatment of Rheumatoid arthritis, osteo-arthritis, ankylosing spondylitis and acute gout. Four formulations of immediate release naproxen sodium tablets containing different concentrations of starch were prepared via direct compression method. The tablets are subjected to in vitro dissolution studies. The dissolution profiles of the formulated tablets were compared to that of the marketed reference Seladin® tablets. The effects of different concentrations of starch to the drug release profiles were investigated. Although all the formulations follow first-order kinetics, F3 formulation containing 15% of starch showed promising results. The best formulation was selected by obtaining a similarity factor, (f2) value of more than 50%, approaching 100% and the formulation was then preceded with evaluation tests. The release kinetics from each formulation such as first-order equation, zero-order equation, Higuchi-equation, Hixson-Crowell’s equation and Korsmeyer-Peppas was also studied. The statistical result indicates that there is no significant difference between F3 formulation and reference product. It was found that by increasing the starch content, the rate of drug release increased. The best formulation was F3 containing 15% of starch as it showed comparable dissolution profile to the reference product with f2 value of 76.10%. The drug release determined using kinetics equations revealed that the drug release follows both diffusion and erosion mechanism, but diffusion occur at a greater extent compared to erosion.
Design And Evaluation Of Controlled Release Matrix Tablet Of Aspirin By Using Hydrophobic Polymer

Jiyauddin Khan\textsuperscript{1}*, Tharani Chellandy\textsuperscript{1}, Mohammed Kaleemullah\textsuperscript{1}, Samer Al-Dhalli\textsuperscript{1}, Sri Budiasih\textsuperscript{1}, Mohamed Rasny\textsuperscript{4}, Riyadh Al-Rashidi\textsuperscript{1}, Shariq Baber\textsuperscript{1}, Sakina Roohi\textsuperscript{2}, Gamal Osman Elhassan\textsuperscript{3}, Saeed Alfady\textsuperscript{3} and Fadli Asmani\textsuperscript{1}

\textsuperscript{1}School of Pharmacy, Management & Science University, 40100 Shah Alam, Selangor Darul Ehsan, Malaysia

\textsuperscript{2}International Medical School, Management & Science University, 40100 Shah Alam, Selangor Darul Ehsan, Malaysia

\textsuperscript{3}Unaizah College of Pharmacy, Qassim University, Qassim, Kingdom of Saudi Arabia

ABSTRACT

Several formulation of sustained release Aspirin were prepared using different concentration of ethyl cellulose through direct compression method. Namely, they are F1, F2, F3 and F4 using 5\%, 10\%, 15\% and 20 \% EC respectively. The aim of this research project is to study the effect of different concentration of ethyl cellulose on the release of Aspirin in-vitro. In rheumatoid arthritis (RA), there is a circadian rhythm of pain. Joint stiffness and pain is more prominent in the morning in patients with RA. Sustained release aspirin would be useful in the relief of arthritis by dosing before bed-time and it can also be potentially helpful in reducing the gastrointestinal side effects associated with aspirin. All the prepared formulations showed good physical characteristics. In this study, all the formulations followed first order release kinetics and the drug was released via anomalous release mechanism. Therefore, both diffusion and erosion was present in the release of drug from these formulations. The use of 10\% of ethyl cellulose onwards is able to sustain the release of aspirin. By increasing the concentration of the polymer, the rate of drug release from its matrix decreases giving a sustained release of the drug. In this study, we are targeting the release of drug for 10 hours. F1 is unable to sustain the release of Aspirin. More than 80\% of drug is released within the first 4 hours. On the other hand, F3 and F4 show a sustained release beyond ten hours where at the tenth hour only 50.81-64.634\% of drug is released from the tablet. F2 shows the best release profile for a ten hour sustained release Aspirin tablet where it releases 88.87\% of the drug at the tenth hour. Therefore, F2 will be most suitable formulation for the relief of arthritis by dosing before bed-time compared to F3 and F4.
Formulation And Evaluation Of Mucoadhesive Control Release Tablet Dosage Form Of Flurbiprofen

Mohammed Kaleemullah\textsuperscript{1*}, Cheng Chyau San\textsuperscript{1}, Jiyauddin Khan\textsuperscript{1}, Ibrahim Abdullah\textsuperscript{1}, Samer Al-Dhalli\textsuperscript{1}, Sri Budiasih\textsuperscript{1}, Sakina Roohi\textsuperscript{2}, Hamid Ali Kazi\textsuperscript{1}, Mohammad Nizam\textsuperscript{1} and Fadli Asmani\textsuperscript{1}

\textsuperscript{1}School of Pharmacy, Management & Science University, 40100 Shah Alam, Selangor Darul Ehsan, Malaysia
\textsuperscript{2}International Medical School, Management & Science University, 40100 Shah Alam, Selangor Darul Ehsan, Malaysia

ABSTRACT

Floating-mucoadhesive tablets of flurbiprofen were developed to prolong its release and improve bioavailability. Flurbiprofen is a non-steroidal anti-inflammatory drug (nsaid), it is newer derivative of diclofenac and having less gastrointestinal complication with short biological half-life of four hours, hence developed formulation provides the added advantages of mucoadhesive-floating formulations. The xanthan gum was utilized in the formulation of tablets containing flurbiprofen by dry granulation technique and evaluated for drug release characteristics. In vitro dissolution studies indicated that a decrease in release kinetics of the drug was observed by increasing the polymer concentration. In mucoadhesive test, as the concentration of xanthan gum increases, mucoadhesive strength increases. All the formulations with floating agent float up to 12 hours. Among all the formulations, f3 showed 96.49% better controlled release of drug within 12 hours. The release data was fitted to various mathematical models, f3 follows zero order kinetics and the mechanism was found to be diffusion.
Preparation And Evaluation Of Ketoprofen Pegs Solid Dispersions

Samer Al-Dhalli1*, Siow Chi Yin1, Jiyauddin Khan1, Mohammed Kaleemullah1, Sri Budiasih1, Nasir Hayat Khan3, Rasha Saad1, Hamid Kazi1, Mohamed Rasny1, Riyadh Al-Rashidi1, Mohammad Nizam1, Gamal Osman Elhassan2, Saeed Alfadly2 and Fadli Asmani1

1School of Pharmacy, Management & Science University, 40100 Shah Alam, Selangor Darul Ehsan, Malaysia

2Unaizah College of Pharmacy, Qassim University, Qassim, Kingdom Of Saudi Arabia

3School of Pharmaceutical Sciences, Universiti Sains Malaysia, 11800 Minden, Penang, Malaysia

ABSTRACT

The solubility behavior of drugs remains one of the most essential aspects in formulation development. The number of new chemical entities has dramatically increased having hiccups of poor solubility and poor permeability. Ketoprofen (KP) is a propionic acid derivative non-steroidal anti-inflammatory drug belongs to class II under Biopharmaceutical Classification System (BCS). It is widely used in the management and treatment of patients with rheumatic disease, but its poor water solubility can give rise to formulation problems and reduce its therapeutic efficiency. A solid dispersion method is one of the methods to increase the solubility of an active pharmaceutical ingredient in water. The aim of this study is to develop solid dispersion of KP using Polyethylene Glycol (PEG) 4000 and 6000 as carriers to enhance solubility of the compound. Solid dispersion was prepared by hot fusion method in which it is mixed in ratios of 1:1, 1:5, 1:10 pure drug to polymer. It is then evaluated by dissolution and solubility studies and was characterized by using a light microscope. All formulations of solid dispersion showed improvement in solubility behavior in the following sequence: KP:PEG6000(1:10) > KP:PEG4000 (1:10) > KP:PEG6000 (1:5) > KP:PEG4000 (1:5) > KP:PEG6000 (1:1) > KP:PEG4000(1:1). Formulation of KP:PEG6000 (1:10) showed the most promising improvement compared to the pure KP. Thus, solid dispersion proved to be an efficient method for improving the dissolution of low water soluble drug (KP) which results in dramatic increase in the dissolution rate.
Anti-Inflammatory Effects of Sandfish Sea Cucumber (Holothuria Scabra) Formulated Syrup on Albino Rat-Paw Induced Edema

May Florence Dela Cruz Bacayo¹*, Erwin Martinez Faller¹

School of Pharmacy, Management and Science University, 41000, Shah Alam, Selangor, Malaysia

ABSTRACT

Sandfish sea cucumber (Holothuria scabra) is one of the thriving marine creatures in the locality of Davao City, Philippines. It belongs to the class Holothuroidea of the phylum Echinodermata. Presently, it is cultivated for product exportation where it becomes the source of income for local families. On the contrary, its medicinal use is not well known, however previous studies revealed significant folkloric importance of the sandfish sea cucumber. The study would like to determine the anti-inflammatory property of the sandfish sea cucumber decoction formulated into syrup. The male albino rat was administered with 3,000mg/mL of the crude decoction to determine the Approximate Effective Dose (AED). Paw thickness method was used to identify the changes of the paw edema before and after the induction of 1% 0.05mL carrageenan (inflammagen) in the left hind paw of the rat and measured the paw thickness using vernier caliper. It was found out that the AED was between 1,300.00 and 4,110.960mg/kg dose level. The 6th and 8th doses was also observed to show anti-inflammatory effects, however, the 8th dose (41,109.60mg/kg) has the most inflammatory inhibition activity, it was used then to formulate the sandfish sea cucumber syrup with 3000mg/mL concentration. The treatments made in the biological assay were the positive control (Ibuprofen Suspension), negative control (0.9% Saline solution) and sandfish sea cucumber decoction formulated as syrup. Test subjects where observed for four hours after the injection of the inflammagen. Statistical analysis using one way ANOVA showed that computed F=59.98997 is greater than Tabulated F=3.402832. It was analyzed that there was a significant difference in the percentage inhibition of the careegan-induced paw thickness of male albino rats treated with Sandfish sea cucumber decoction formulated as syrup, ibuprofen suspension as positive control and 0.9% saline solution as negative control.
**ABSTRACT**

*Musa acuminata* is one of a common species of banana in parts of Southeast Asia. Commonly edible as desserts that serves as nutritional and medicinal purposes. Left waste is the ripe banana peel that has potential antibacterial property but has not fully investigated. The study would like to determine the *in-vitro* antibacterial activity of the crude peel extract (CPE) against the clinical isolates of *Staphylococcus epidermidis* associated with acne. Ripe Banana (*Musa acuminata*) peel extract was examined using a standard antimicrobial disk diffusion method and tested against the clinical isolates of *Staphylococcus epidermidis*. The experimental study of CPE showed partially active against the clinical isolates of *Staphylococcus epidermidis*. The extract was capable to inhibit against the clinical isolates for 24 hours incubation period. Of the three treatments, clinical isolates was very susceptible towards CPE, vancomycin (positive control) have ≥5.0mm and ≥9.67mm respectively, compared with negative control (0.9% saline solution) which was ≤2.0mm. On the other hand, there was an existing significant difference on the mean zones of inhibition demonstrated by CPE and the negative control which showed that the extract had a higher zone of inhibition against the clinical isolates of *Staphylococcus epidermidis* compared with the negative control. Potential development of the CPE as antibacterial shall be recommended for further study for potential anti-acne agent.
Biological Activity of *Pupalia Lappacea* Aganist Diabetes and Interlinked Disorders like Obesity and Hyperlipidemia

Parag Jain\(^1\), Vivek Kumar\(^1\), Kalpana Rathore\(^2\), Zabeer Ahmed\(^2\)

SLT Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Koni, Bilaspur, Chhattisgarh-495009
\(^2\)IIIM Jammu, Canal Road, Jammu-180001, (J&K), India.

**ABSTRACT**

*Pupalia lappacea* (L) Juss (Amaranthaceae) (PL) has ancient traditional importance. It belongs to the family Amaranthaceae and commonly known as forest Burr or Creeping cock’s comb. Traditionally, it has been used for treatment of bone fracture, jaundice, paralysis, diarrhea and other numerous disorders. The present study assesses the effect of PL leaves ethanolic extract on blood glucose level, lipid level, insulin level, body weight, water and food intake in streptozotocin (STZ) induced diabetic rats. Male Albino rats received single moderately sized dose of STZ (45 mg/kg, intraperitoneally (i.p)) to become diabetic at once before starting the treatment. Antidiabetic activity of extract was evaluated through two different doses of 250 mg/kg (AS001) and 500 mg/kg (AS002). The animals were divided into five groups, namely normoglycemic control, diabetic control, reference group, AS001 and AS002. Each one contains six animals for *in vivo* study. The reference group received glibenclamide at a dose of 5.0 mg/kg i.p to evaluate the antidiabetic activity. Antidiapogenic activity was determined by *in vitro* method on 3T3-L1 cell line in compare to simvastatin as reference drug. The extract showed significant fall in fasting serum glucose (FSG) i.e. 234.68 and 211.61 mg/dl in STZ induced diabetic animals for the treated groups AS001 and AS002 respectively. The PL extract also exhibited noteworthy antidiapogenic activity on 3T3-L1 cell line. The value of inhibitory concentration (IC\(_{50}\)) of PL extract to reduce adipocyte cells was found to be 662.14 μg/ml. Furthermore, it showed significant antihyperlipidemic effect. It improved lipid profile by decreasing the levels of serum triglycerides, total cholesterol, low density lipoprotein (LDL) and increasing high density lipoprotein (HDL) cholesterol. The PL extract exhibited significant results for antidiapogenic, antidiabetic and hypolipidemic activity both *in vivo* and *in vitro* and it may prove to be effective for the treatment of diabetes mellitus.
Isolation of Antifilarial Constituents from Seeds of *Pongamia pinnata*

*Sweety Lanjhiyana¹*, SK Lanjhiyana²

¹School of Pharmacy, Chouksey Engg. College, Bilaspur-495001.

²Institute of Pharm. Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur-C.G.-495009.

**ABSTRACT**

Lymphatic filariasis is caused by filarial parasites like Wuchereria bancrofti, Brugia malayi and B. timori, and transmitted by mosquitoes. In the present work in vitro antifilarial effect of a methanolic extract of *Pongamia pinnata* seeds were tested against macrofilarial *Setaria digitata* worms. A bioassay guided fractionation of plant drug was carried out. Further hplc analysis was applied on the crude extracts and bioactive fractions. The screening of crude extract and the bioactive fractions done by worm motility and MTT reduction assays against the adult *S. digitata*. The isolated bioactive principles were phytochemically characterized by IR, H-NMR and MS analysis. The findings thus provide a new lead for development of a macrofilaricidal drug from natural products.
Calcium Silicate Based Microspheres of Salbutamol Sulphate For Gastro Retentive Floating Drug Delivery: Investigate In Vitro And In Vivo Description

Kedar Prasad Meena*

SLT Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur (Chhattisgarh)-495009, India.

Email: meenapharmaceutics@rediffmail.com

ABSTRACT

The present study aimed to develop gastro retentive multiple unit controlled-release drug delivery systems of Salbutamol, a fast and short-acting meglitinide analog used for long term treatment of asthma. It has a very short half-life (2-5 h), low bioavailability (48%) and poor absorption in the upper intestinal tract. A controlled release system was designed to increase its residence time in the stomach. Floating microspheres were prepared by emulsion solvent diffusion technique which is consisting of calcium silicate (CaSi) as porous carrier; salbutamol (Sbt.), as an antiasthamatic agent; and Eudragit S-100 as polymer. The prepared formulations were characterized for micromeritic property, in vitro floating behavior, drug loading and surface morphology, Interaction study by FTIR, DSC and XRD followed by pharmacokinetic study. The microspheres were found to be spherical in shape and porous. The release rate was determined in simulated gastrointestinal fluids at 37±1°C. The formulation demonstrated favorable in vitro floating and release characteristics. The drug encapsulation efficiency was about 84±1.6. The pharmacokinetic study of developed formulation was compared to marketed formulation and it was found that it reveals maintenance of plasma drug concentration, which is comparable that of marketed formulation. The designed system combined excellent buoyant ability and suitable drug release pattern. It could possibly be advantageous in terms of increased bioavailability of salbutamol.
Responsibility of Pharmacy Professionals in Obesity Treatment and Management: Indian Scenario

Deepak Prashar¹*, Ram Kumar Sahu²

¹Research Scholar, PAHER University, Udaipur (RJ), India
²Department of Pharmacy, Columbia Institute of Pharmacy, Raipur (CG), India

Email: pm_vcp@rediffmail.com

ABSTRACT

NDTV surveological report 2014 suggested that 41 million Indian populations are obese. Based on the guidelines by Indian Health Ministry, in 2014 FITHO conducted the consumer survey (including 4100 participants out of which 46% were men and 54% were women with age 18-75). The survey reports reveals that out of the total 1/5th men (377 out of 1886) and 1/7th (316 out of 2214) of the women were extremely obese. Also, the report suggested that average age for the risk of obesity is 37 years in case of men and 32 years in women. All over the world, the researchers are trying to restore health of the patients. The current research aimed to link up the role of pharmacy professionals in the management of obesity. Electronic search was conducted in MEDLINE, PubMed, ISI Web of Science and Scopus scientific databases. Search yielded 54 relevant papers, 23 of them were conducted as high quality clinical trials. Clinic-based interventions suggested that pharmacy professionals can play a major role in correlating utilization of the anti-obesity agents under different therapies. However, the contribution of India in such research is only 4-8% in comparison to other western countries. This might be due to lack of the clinical knowledge as well as lesser availability of tertiary care hospitals.
Development, Characterization and Evaluation of Orally Disintegrating Tablets of Odansetron

Manoj Kumar*

SLT Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G.

Email: mrmanojkumar1@yahoo.co.in

ABSTRACT

The aim of this study was to develop Oral disintegrating tablet of odansetron by using direct compression method. Oral disintegrating tablets are emerging trend in novel drug delivery system & received increasing demand & popularity due to ease of administration & better patient compliance. Various formulations of odansetron were prepared by direct compression method using different ratios of natural superdisintegrant and synthetic at the concentrations ranging from 4%-15%. Prepared tablets were evaluated for various parameters like hardness, weight variation, friability, wetting time, water absorption ratio, content uniformity and in vitro drug release. The optimized formulation was investigational to stability studies as per ICH guidelines. Disintegration times of formulations were found to be less than 50 sec. and drug release was observed 94-97% in 5 min. The optimized formulation was found to be stable with insignificant change in the hardness, disintegration time, drug content and in vitro drug release.
Development of New Models to Evaluate CNS Related Activity in Rat

Pushpendra Kumar Patel*

Sidhhi Vinayaka Institute of Technology and Sciences, Bilaspur, Chhattisgarh.

Email: pushpendrakpatel@gmail.com

ABSTRACT

There are several models available for the in vivo evaluation of CNS activity in experimental animals, especially in rat and mice but almost all of these models are older to stand with presents stress induced psychic abnormality. Presently we are dependent on plus maze, rota rod, zero maze, T maze, Forced swim method, tail suspension methods. For the development of new evolitional method we must modify these basic models and use their principle. On the present paper I will focus on the normal to moderate changes in available models without changing their main principle. We have tried some of them in pharmacology lab during the research duration. These changes can bring more accurate data and result for the measuring the drug’s activity and it will also beneficial for the R&D section of the pharmaceutical industries.
Formulation Development and Characterization of Quantum Dots Using As a Carrier for the Delivery of Anticancer Drug

Devesh Umesh Kapoor

Dr. Dayaram Patel Pharmacy College, Bardoli, Dist-Surat, Gujarat

ABSTRACT

The current study was designed to formulate and characterize quantum dots as a carrier for delivery of 6-mercaptopurine. This investigation includes synthesis, characterization and in vitro study of 6-mercaptopurine quantum dots. Zinc oxide quantum dots were synthesized and the drug was encumbered on them. These quantum dots were additionally coated with Eudragit E PO to attain drug release only at the acidic pH range as well as to flabbergasted release of active pharmaceutical ingredient in the formulation vehicle itself. For 6-mercaptopurine quantum dots optimized batch, yield (62±0.02 %), drug loading (81.56±0.18 %) and drug content (92±0.09%) were detected. FTIR spectroscopy exposed no any incompatibility among active pharmaceutical ingredients, polymer and metal SEM images. It was revealed that drug loaded quantum dots with rough surface and Eudragit E PO coated quantum dots with smooth surface. The DSC curve of 6-mercaptopurineun exhibited peak at 263 °C corresponding to its melting point and Eudragit E PO coated quantum dots exhibited peak at 198 °C. Shifting of the endotherm advocated possible interaction of 6-mercaptopurine and Eudragit E PO coated quantum dots. Diffractogram of the active pharmaceutical ingredient exhibited multi-crystalline nature, though pure Eudragit E PO disclosed amorphous nature. Optimized quantum dots indicated the crystalline nature of the active pharmaceutical ingredient. Mean particle size of optimized formulation batch was 189.23 nm and zeta potential was found to be +1.63 mV. An optimized batch of quantum dots has the prospects to employ in imminent for imaging of cancer cells and targeting delivery of 6-mercaptopurine.
Reducing Airborne Pathogens, Dust and *Salmonella* Transmission In Experimental Hatching Cabinets

Dr. Amit K. Dutta¹*, Shagufta Khan²

¹School of Biological & Chemical Sciences, MATS University, Raipur (CG). - 492004
²Grow Tips Biotech, Hazrat Nizamuddin Colony, Bhopal (MP).

Email: drakdutta@matsuniversity.ac.in

ABSTRACT

Electrostatic charging of particles in enclosed spaces has been shown to be an effective means of reducing airborne dust. Dust generated during the hatching process has been strongly implicated in *Salmonella* transmission, which complicates the cleaning and disinfecting processes for hatchers. Two preliminary trials in which dust reduction was measured, four trials were conducted to evaluate the effectiveness of an electrostatic space charge system (ESCS) on the levels of total aerobic bacteria (TPC), enterobacteriaceae (ENT), and *Salmonella* within an experimental hatching cabinet. The ESCS was placed in a hatching cabinet & operated continuously to generate a strong negative electrostatic charge throughout the cabinet through hatching, and dust was collected in grounded trays containing water and a degreaser. An adjacent hatching cabinet served as an untreated control. Air samples from hatchers were collected daily, and sample chicks from each hatcher were grown out to 7 d of age for cecal analysis in three of the trials. The ESCS significantly (P < 0.05) reduced TPC and ENT by 85 to 93%. Dust concentration was significantly reduced (P < 0.0001) during the preliminary trials with an average reduction of 93.6%. The number of *Salmonella* per gram of cecal contents in birds grown to 7 d of age was significantly (P < 0.001) reduced by an average log₁₀ 3.4 cfu/g. This ionization technology is relatively inexpensive and could be used to reduce airborne bacteria and dust within the hatching cabinet.
Integrating Pharmacogenomics in Variations of DNA Sequencing- Experience Based Review

Dr. Amit Kumar Dutta*, Vishwaprakash Roy

School of Biological & Chemical Sciences, MATS University, Raipur (CG). - 492004.

Email: drakdutta@matsuniversity.ac.in, adjnchrc@yahoo.com

ABSTRACT

Medicine is to recommend drug treatment based on an individual’s genetic makeup. Pharmacogenomic studies utilize two main approaches: candidate gene and whole-genome. Both approaches analyze genetic variants such as single nucleotide polymorphisms (SNPs) to identify associations with drug response. In addition to DNA sequence variations, nongenetic but heritable epigenetic systems have also been implicated in regulating gene expression that could influence drug response. Lymphoblastoid cell lines (LCLs) have been used to study genetic determinants responsible for expression variation and drug response. Recent studies have demonstrated that common genetic variants, including both SNPs and copy number variants (CNVs) account for a substantial fraction of natural variation in gene expression. Given the critical role played by DNA methylation in gene regulation and the fact that DNA methylation is currently the most studied epigenetic system. We suggest that profiling the variation in DNA methylation in the LCLs samples will provide new insights into the regulation of gene expression as well as the mechanisms of individual drug response at a new level of complexity. Epigenomics will substantially add to our knowledge of how genetics explains gene expression and pharmacogenomics.
Degradable & Microbial Activity with Precipitation At Solution-Solution Mixing Zones In Bhopal – Madhya Pradesh Environment

Dr. Amit K. Dutta¹*, Dr. Shagufta Khan²

¹School of Biological & Chemical Sciences, MATS University, Raipur (CG). - 492004
²Grow Tips Biotech, Hazrat Nizamuddin Colony, Bhopal (MP).

Email: drakdutta@matsuniversity.ac.in

ABSTRACT

The use of biological and chemical processes that degrade or immobilize contaminants in subsurface environments is a cornerstone of remediation technology. The enhancement of biological and chemical processes in situ, involves the transport, displacement, distribution and mixing of one or more reactive agents. All the biological and chemical reactions require diffusive transport of solutes to reaction sites at the molecular scale and accordingly, the success of processes at the meter-scale and larger is dictated by the success of phenomena that occur at the micron-scale. However, current understanding of scaling affects the mixing and delivery of nutrients in biogeochemically dynamic porous media systems is limited, despite the limitations this imposes on the efficiency and effectiveness of the remediation challenges at hand. Therefore, we propose to experimentally characterize and computationally describe the growth, evolution and distribution of microbial activity and mineral formation as well as changes in transport processes. The model system which was chosen for this project, is based on a method for immobilizing 90Sr involving in stimulation of microbial urea hydrolysis with ensuing mineral precipitation (CaCO₃) and co-precipitation of Sr. Studies at different laboratory scales will be used to visualize and quantitatively describe the spatial relationships between amendment transport and consumption that stimulate the production of biomass and mineral phases that subsequently modify the permeability and heterogeneity. The proposed research will define the key physical, chemical and biological processes influencing the form and mobility of DOE priority contaminants (e.g., 60Co, 90Sr, U) in the subsurface. This will translate directly to improving the efficiency of amendment based remediation strategies.
Early Pathogenesis of Type 2 Diabetes Mellitus associated with Protein Profile of Visceral Adipose Tissues

Dr. Amit K. Dutta*, Deepa Biswas, Dr. Devyani Sharma

School of Biological & Chemical Sciences, MATS University, Raipur (CG). - 492004.

Email: drakdutta@matsuniversity.ac.in, adjnchrc@yahoo.com

ABSTRACT

Adipose tissue is recognized as an endocrine organ playing important pathophysiological roles in metabolic abnormalities, such as obesity, cardiovascular disease and Type 2 diabetes mellitus (T2DM). Especially, visceral adipose tissue (VAT), compared to subcutaneous adipose tissue, is closely linked to the pathogenesis of insulin resistance and T2DM. Despite the importance of VAT, its molecular signatures related to the pathogenesis of T2DM have not been systematically explored. Here, we present comprehensive proteomic analysis of VATs in drug naive, early T2DM patients and subjects with normal glucose tolerance. A total of 4,707 proteins were identified by LC-MS/MS experiments. Among them, 444 increased in their abundance in T2DM while 328 decreased. They are involved in T2DM-related processes including inflammatory responses, peroxisome proliferator-activated receptor signaling, oxidative phosphorylation, fatty acid oxidation, and glucose metabolism. Of these proteins, we selected 11 VAT proteins that can represent alteration in early T2DM patients. Among them, up-regulation of FABP4, C1QA, S100A8, and SORBS1 and down-regulation of ACADL and PLIN4 were confirmed in VAT samples of independent early T2DM patients using western blot.
The *in-vitro* Antioxidant Activity and Total Phenolic Contents of *Achyranthus aspera* Linn

Brijyog*, Laliteshwar Pratap Singh, Ashish Sarkar

Institute of Pharmacy, Harish Chandra P.G. College Varanasi, U.P. (221002) India

**ABSTRACT**

In this study, antioxidant activity, total phenolic content and phytochemical screening of achyranthus aspera was evaluated. The antioxidant property was evaluated for all extract by D.P.P.H. method, in our experimental result revealed, Hydroalcoholic extract IC50 value was about 56.47% and aques extract IC50 value was about 50.60%. All the extracts show positive reactions for Alkaloids, Glycosides, Flavonoids, Carbohydrates, Tannins and Phenolic compounds. Moreover total phenolic concentration equivalents to gallic acid was found in 89.26mg/g of hydroalcoholic extract and 74.38mg/g of aqueous extract, which correlated with antioxidant activity. Finally conclusion was drawn that the hydroalcoholic extract of *Achyranthus aspera* showed novel inbuilt promising total phenolic contents and antioxidant activity.
Studies on Anti-filarial Activity of Phyto-chemicals Obtained from Plant Leaf Extracts of *Azadirachta indica* Against Experimental *In-vitro* Filarial Infections

SK Lanjhiyana¹, Sweety Lanjhiyana²

¹Institute of Pharmacy, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) - 495009
²School of Pharmacy, Chouksey Engg. College, Bilaspur (C.G.) - 495009

**ABSTRACT**

Concurrently phyto-chemicals were identified globally. They had multiple beneficial effects in combating various diseases and complications. Filariasis is considered endemic especially in tropical and subtropical regions of developing countries in which more than 120 million populations around the world are infected whereas more than one billion people at risk of infection. As per ethno-botanical information identified about various Indian plants which have potential for the disease treatment. It was mentioned that the indigenous plants include Ayurveda like Charaka Samhita (1000 BC) and Sushruta Samhita (600 BC) used long before they were introduced into the western medicines and/or before their actions were investigated of scientific lines. The objective of the present study was to conduct phytochemical studies of medicinal leaf extracts obtained from *Azadirachta indica* (Family: Meliaceae) for their potency to treat lymphatic filariasis disease. The traditional combination therapies of broad-spectrum doses of either ivermectin with albendazole or albendazole with diethylcarbamazine used for potential treatment of microfilaricides. It was found that they have no effect on the adult macrofilariae and it is one of major drawback. Therefore, it was developed an effective phyto-medicine based antifilarial preparations having potential to kill or permanently sterilize the adult worm with comparatively no side effect on other hand. The dried chopped leaf of *Azadirachta indica* was subjected to soxhletion for n-hexane (HRC), aqueous extracts (ARC) and methanolic (MRC) during the studies. The bio-assay guided fractions obtained after column chromatography was subjected to *in-vitro* screening for worm motility and nerve muscle preparation assay against adult bovine filarial S. digitata parasite. After incubation for 24 and 48 h respectively at dose concentration of 0.05 to 1.5 mg/ml for possible dose response relationship thereby confirmed irreversible-paralysis of both male and female worms. It exhibited significant (p<0.05) effects for MRC & ARC extracts respectively. The present study confirmed that the potential phytofractions may be used for treatment of lymphatic filariasis disease.
Current Status and Reason Behind the Gap between Academic and Pharmaceutical Industry

Khemkaran Ahirwar*, Dr. Sanmati K. Jain

UTD, Department of Pharmacy, Sarguja University Ambikapur, C.G.

ABSTRACT

The reason that there are so few jobs to be found in college is not because there are too few colleges, universities, departments, or programs. If anything, there are too many Academics and Industrialists have a different mindset, therefore both are living in two different worlds. Both Academics and Industrialists are pursuing different aims entirely. The Academy is determined for recognition from his or her peers. The Industrialist is determined to survive. The Industry thinks in terms of short range goals, whereas the Academy has a long range perspective. The Industry prefers proven solutions with a low risk, whereas Academia is interested in creating new solutions with a high innovation rate. Industry seeks the minimum solution to minimize their risk, whereas Academia strives for a maximum solution to maximize their recognition. The Industry is mainly concerned with costs. Academia could care less about costs; it is mainly interested in the benefits. Hence The Gap between the needs of the industry and aspirations of an academic community is very large. Academicians always have a strong feeling that unless these initiatives find a place in the industrial sector, this interaction will be confined to only developmental activities. When the bridging between both organizations, then a lot to be optimistic jobs and then the Indian pharma sector is at the threshold of exponential growth. It is believed that the Indian pharma market will be amongst the top three global markets in terms of incremental growth by 2020.
Isatin Substituted Hydroxamates as Novel Histone Deacetylase Inhibitors

Harish Rajak*, Avineesh Singh, Kamlesh Raghuwanshi, Vijay K Patel, Deepak K Jain

Institute of Pharmaceutical Sciences, Guru Ghasidas University, Bilaspur (CG)

ABSTRACT

Histone deacetylase (HDAC) inhibitors are well known class of drugs that have been confirmed as novel anticancer agents. The inhibition of HDAC enzyme regulates gene expression, differentiation and cell cycle arrest by altering the acetylation of histone proteins. The balance between acetylated and deacetylated form of histone proteins is the crucial aspect in regulation of gene expression. HDAC inhibitors comprise three pharmacophoric features namely, an aromatic cap group, zinc binding group (ZBG) and a linker chain connecting cap group to ZBG. The present study disclosed substitution of isatin moiety as cap group which recognize the surface of active enzyme pocket and thiosemicarbazide moiety incorporated as linker group accountable for connecting cap group to ZBG (hydroxamic acid). The synthesized compounds were evaluated for their anticancer activity and HDAC enzyme inhibition. The binding mode analysis of these compounds with receptor was evaluated using docking studies. Several analogues were found to inhibit HDAC and cellular proliferation of Hela cervical cancer cells with GI\textsubscript{50} values in the micro molar range. Also, the efforts were carried out to establish the structure activity relationship among synthesized compounds.
In vitro Anti-inflammatory Study of *Tridax procumbens* L. Leaves, Stems, Roots and Flowers extracts

Debarshi Kar Mahapatra\(^1\)*, Manish Kamble\(^2\), Ruchi Shivhare\(^1\), Kavita Pandey\(^1\)

\(^1\)Department of Pharmaceutical Chemistry, Kamla Nehru College of Pharmacy, Nagpur - 441108, Maharashtra

\(^2\)Department of Pharmacognosy, Kamla Nehru College of Pharmacy, Nagpur - 441108, Maharashtra

**ABSTRACT**

*Tridax procumbens* L. is a traditional plant known for its anti-inflammatory activity, however, many literatures reported the potentiality, but the actual vital portion where the liable phytocomponents are present is still debated. In order, to determine the same, *in vitro* anti-inflammatory activity of different extracts (aqueous, ethanol, methanol, chloroform and petroleum ether) for different parts of *Tridax procumbens* L. (leaves, stems, roots, and flowers) were investigated using human red bold cell membrane stabilization (HRBCM) method. All the plant part extracts showed moderate to significantly high activity. The alcoholic leaves extract (ethanol and methanol) demonstrated noteworthy HRBCM stabilization activity at 200 μg/mL (69.68%, and 70.44%) respectively compared to the standard drug diclofenac sodium (81.37%). Moreover, the extracts displayed considerable anti-inflammatory potential. In conclusion, the results of this study confirmed the traditional importance of this plant in treatment of the inflammation.
Herbs Are Not Safe but Teratogenic and Abortifacient

Akansha

KC Institute of Pharmaceutical Sciences, Una (H.P)-India

Email: coolpharma@y7mail.com

ABSTRACT

Several herbs are foetotoxic causing fetal malformations, embryonic or fetal death, defects, abortions and early parturition. The aim of this study was to present the implications of the utilization of herbs during pregnancy, pointing out those that should be avoided during this condition because of their abortifacient/teratogenic potential. Electronic database search was carried out on Science Direct, Scopus, Pub med and Google Scholar. Those articles are included which suggested the abortifacient and/or teratogenic potential of the herbs. After a pre-selection of 74 articles, 29 bibliographies were included in the research. The results suggested that some herbs are responsible for birth defects and premature abortion basically because of overdose and associated adverse drug effects. The obtained results denied the theory of harmless natural products (herbal). The present research emphasizes on the improved safety criteria on herbalism and herbal products especially when the consumers are future creator.
Assessing the Role of Polymers in Dentistry

Shivani Singh*, Sonal Mittal, Deepak Prashar

MN DAV Dental College and Hospital, Solan (H.P)-India

Email: dp_dental@rediffmail.com

ABSTRACT

Polymers is always been utilized to a great extent in medical application. Most of the biodegradable polymers are not designed to be used in dental practices. In the current scenario both biodegradable and non biodegradable polymers are cementing their position in dentistry. The literature evidences suggested the employment of polymers in the therapy for gingivitis, and treatment of dry socket. Absorbable scaffolds for in situ cartilage and bone tissue engineering, and surface activated implants for augmentation and/or replacement of bone and cartilage can be done using polymers. Cross-linking polymers derived from dimethacrylates such as 2,2- bis[4-(2-hydroxy-3-methacryloyloxypropyl)phenyl]propane (Bis-GMA), ethoxylated Bis-GMA (EBPDMA), 1,6- bis-[2-methacryloyloxyethoxycarbonylamino]-2,4,4-trimethylhexane (UDMA), dodecane diol dimethacrylate (D3MA), triethylene glycol dimethacrylate (TEGDMA), or bis-methacryloyloxy methyl tricyclo[5.2.1.02,6] decane (TCDMA) are used as dental composite filling materials. Most of the dental materials used for making crown, dentures and suture are derived from polymers by polymerization technique. The present work tries to evaluate the dynamic role of polymers in the dental field.
Students Psychology towards Pharmacy Education in Himachal Pradesh: A Survelogical Research

Sanjay Kumar¹, Deepak Prashar²*

Department of Economics, Govt. College Dharampur, District Mandi (H.P)-India

Department of Pharmacy, MN DAV Dental College and Hospital, Solan (H.P)-India

Email: dp_dental@rediffmail.com

ABSTRACT

Study of students’ psychology in the field of education is much more important in terms of career adoption and behavior of students. Present study is an attempt to understand the role of mental functions in individual. The study is proposed to evaluate the student’s psychology towards Pharmacy education in Himachal Pradesh. The area was preferred for the research because of the availability of 8 universities 15 colleges providing pharmacy education. The information required in present study was collected using on pre-tested structured questionnaire. The current survelogical research offered the fusion of anticipated as well as unpredicted results. The results revealed that students are unable to get proper information of Pharmacy colleges because of the absence of college websites (70%). The results also strengthen the theory that in drug industries students with basic sciences are much preferred and salaried in comparison to pharmacy graduates and post graduates. Moreover, the continuous shuffling of teaching faculties because of less remuneration and more workload hampers the psychology of current pharmacy students. These factors reflect negative attitudes in the students towards Pharmacy as a carrier option in the present study area.
Industry-Academia Interactions: Bridging the Gap

Prashant Tiwari 1*, Deepak Dash1

Department of Pharmacology, Royal College of Pharmacy, Raipur-492099

Email: ptc_ptc15@rediffmail.com

ABSTRACT

Academic institutes place great importance to closer interaction with industry and R&D organizations. At the level of industry participation in technology development, some interaction has been witnessed between large public and private sector enterprises and academic institutes. Still, industry support to basic research is virtually non-existent. However, large industrial houses have the resources to invest in technology development initiatives. Academic participation is often needed in minor technological innovation. Small scale industries often depend on support in the areas of design, process improvement and machinery performance etc. They also rely on processes to yield a product which already exists. In other hands an academician shows interest normally in problems that are intellectually challenging. His areas of interest lie in technology development initiatives and methods related to process and design improvement. Researchers have strong preference for working towards creation of knowledge in specialized areas. For industry-related problems, a researcher has to explore a variety of options which is time consuming. Moreover, by considering this fact it can be summarized that the research interests of academics and industry are often quite different however there are opportunities to produce good academic research that can assist industry.
Formulation Development for Antihypertensive Combination in Extended Release Matrix Tablets

Alpana Ram and Barsa B Mahapatra

SLT Institute of Pharm. Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur, (CG)

ABSTRACT

Hypertension is the major problem in this era. The aim of the study was to prepare extended release matrix tablets of Losartan Potassium and Nifedipine combination for effective lowering of blood pressure. Matrix tablets were prepared by wet granulation method and characterized for hardness, thickness, percent drug content, weight variation and friability. In vitro drug release was 52% in 12 hours. It was found that the drug release increased with increasing concentration of hydrophilic agent HPMC, while the change in pH and agitation intensity showed no significant difference on the drug release. Drug release followed zero order model. The tablets were stable at room temperature and at 40°C up to 3 months. Shelf life was more than 2 years. Blood pressure was induced in healthy Sprague Dawley rats by uninephrectomy and simultaneous administration of 1-1.5% w/v sodium chloride. Matrix Tablet was surgically inserted into rats stomach and compared with marketed tablet. Matrix tablets normalized the blood pressure after 8 hours which was maintained for 12 hours whereas the marketed tablets reduced blood pressure in 4 hours after which it was again raised. Thus the prepared extended release matrix tablets are a promising drug delivery for once daily administration of Nifedipine and Losartan Potassium for the effective treatment and management of hypertension.
Pharmaco-Therapeutical Agents in Dentistry

Sahira Dadhwal*, Deepak Prashar

MN DAV Dental College and Hospital, Solan (H.P)-India

Email: dp_dental@rediffmail.com

ABSTRACT

With the rapid growth of pharmaceutical industry newer drugs are evolving every now and then. This is excellent from medical viewpoint to compensate the diseases. But this rapid growth needs a good communication between the industry and medical professionals. The present work tries to outbreak the gaps between pharmaceutical industries (drugs) and clinicians and academic professionals (up to date knowledge). This updated information will help the dental professionals to carry out their work in more efficient and rationalized manner. Moreover, the current work emphasizes on the enrollment of academicians in research work. The upgraded information will surely facilitate the physicians to overcome the bewilderment of generic and trade names. This proper study and co-ordination can help in cementing the gap between the pharmaco-therapeutically available agents and their rationalized used in dentistry.
Extracts of Ginger and Marshmallow can Protect Against Gastric Injury-Induced Experimentally in Rats

Sameh S. Zaghlool\textsuperscript{1}, Basim A. Shehata\textsuperscript{2}, Ali A. Abo-Seif\textsuperscript{1} and Hekma A. Abd El-Latif\textsuperscript{3}

\textsuperscript{1}Pharmacology and Toxicology Department, Faculty of Pharmacy, Nahda University, BeniSueif-62111, Egypt

\textsuperscript{2}Pharmacology and Toxicology Department, Faculty of Pharmacy, Beni-Sueif University, BeniSueif-62111, Egypt

\textsuperscript{3}Pharmacology and Toxicology Department, Faculty of Pharmacy, Cairo University, Kasr El-Aini, Cairo-11562, Egypt

ABSTRACT

Gastric ulcer is considered as one of the world’s major dangerous diseases. Various therapeutic agents utilized in management of ulcer, but most of these produce several harmful reactions. In this study, the possible protective effects of three agents namely; famotidine, Ginger and Marshmallow extracts, were investigated on pyloric ligation-induced gastric injury and indomethacin-induced gastric injury in rats. Five groups of rats were pretreated orally for 14 days as follow; normal control group and ulcer control group receiving saline, Famotidine pretreated group (20 mg/kg), Ginger pretreated group (100 mg/kg) and Marshmallow pretreated group (100 mg/kg). On the 15\textsuperscript{th} day, animals were subjected to two different models of animal experiments. The first was pyloric ligation-induced gastric ulcer and the second was indomethacin-induced gastric ulcer in rats with a single intra-peritoneal administration of indomethacin (20 mg/kg, i.p.), except for the normal control group. Four hours after pyloric ligation or Three hours after indomethacin injection, collection of blood samples and the gastric juice were done and the gastric mucosa was scrubbed off for determination of some biochemical parameters.

In the first model, 4 hrs after pyloric ligation; a significant ulceration in the glandular area of the rat stomach, increase in gastric secretion, glycoprotein content and peptic activity were observed. This was associated with a significant decrease in blood superoxide dismutase activity (SOD), gastric mucosal nitric oxide (NO) and glutathione (GSH) contents. The lipid peroxide in the gastric mucosal was elevated. Also, histamine content was noticed. In the second model, 3 hrs after 20 mg/kg (i.p.) of indomethacin administration, a significant ulceration in the glandular part of the rat stomach, elevation of blood SOD were observed. This was associated with a significant decrease in gastric mucosal NO and GSH contents. Pretreatment with Famotidine, Ginger or Marshmallow extracts significantly reduced the ulcer and oxidative stress parameters.

The current study concluded that Famotidine, Ginger and Marshmallow extracts facilitated prophylaxis of pyloric ligation-induced gastric injury and indomethacin induced gastric injury in rats after 14 days of daily treatments.
Phytochemical Screening of *Moringa oleifera* (Moringaceae) and *Barleria prionitis* (Acanthaceae) methanolic crude leaves extract

Padma Shrivastava¹ and Priyam Singh²

¹Dept. of Biotechnology, Govt. P.G. College, BHEL, Bhopal (M.P.), India

²Dept. of Botany, Govt. P.G. College, Narsinghgarh, Rajgarh (M.P.), India

ABSTRACT

Mankind has been using plants as chemotherapeutic agents for thousands of years. There has been an increasing interest worldwide on therapeutic values of natural products. The nature provides the mankind vast therapeutic flora with a wide variety of medicinal potential. According to WHO world’s 80% population depends on traditional medicines for healthcare. The present study evaluates the qualitative analysis of phytochemicals present in hydroalcoholic extract of *Moringa oleifera* (Moringaceae) and *Barleria prionitis* (Acanthaceae) leaves. Methanolic crude extract (50%) was prepared using soxhlet apparatus. Phytochemical analysis reported the presence of saponin, flavonoids, protein, carbohydrates, steroids, inorganic components (SO₄²⁻ and Cl⁻) and organic compounds (oxalic acid) in *Moringa oleifera* leaves. Presence of flavonoids, inorganic components (SO₄²⁻ and Cl⁻) and organic compounds (oxalic acid) were reported in leaves. The medicinal value of the plants is contained in the secondary metabolites like terpenoids, phenolics, flavonoids, alkaloids, proteins, nitrogen compounds and saponins. The present study reveals the presence of various compounds which are proved chemotherapeutics. These can be proved potent nature based chemotherapeutics with no side effect for treatment of various ailments by further biological screening.
The Pharmaceutical Research And Future Development In Pharmaceutical Industry

Neeli Rose Beck

SLT Institute of Pharmaceutical Sciences, Guru Ghasi Das Vishwavidyalaya, Bilaspur-495009, Chhattisgarh, India

Email: Neeli05011974@gmail.com

ABSTRACT

Human beings have been using “drugs” to treat illness and disease. Pharmaceutical drugs are manufactured in pharmaceutical industry. The pharmaceutical industry has many characteristics, both in its structure and in the nature of its business operations. These are materially affecting the process of bringing new pharmaceuticals to the patient. Generic pharmaceutical companies are low-cost, low-margin and low-risk businesses. The products which are they choose to manufacture and sell have already been successful in the market place commercially. Marketing costs of generic products are also very low because products are already well established in the market place and the demand is well understood. In industry the development of new pharmaceutical drugs is very time consuming, costly and high risk, with low chance of a successful outcome. Research and development in the pharmaceutical industry is very expensive, but it is the development activity that dominates the costs, particularly in the clinical trials which follow the pre-clinical development. The present study deals process of research and development of drugs with all its challenges, commercial realities of business and current problems, exploration of some future commercial and technical developments in business including the development of greener pharmaceutical industry.
Formulation And Evaluation Of Self Emulsifying Delivery System For Enhancement Of Solubility Of Poorly Water Soluble Mirtazapine

Disha M. Dhabarde*, Nilesh Sonkusare, Manish A. Kamble, Ashwini R. Ingole, Kavita R. Pandey, Ruchi S. Shivhare, Debarshi Kar Mahapatra

Kamla Nehru College of Pharmacy, Nagpur-441108 Maharastra, India.

Email: dishamandave@gmail.com

ABSTRACT

Depression is the most common disorder affects 121 million people. Different treatments have been shown to be effective for children and adolescents diagnosed with depression. Certain antidepressant medications, selective serotonin reuptake inhibitors have been shown to be effective. Mirtazapine is an antidepressant agent class of atypical antidepressant. It is used in the treatment of major depressive disorder and other mood disorders. Its absolute bioavailability is approximately 50% after either single or multiple doses. It is insoluble in water; dissolution is rate controlling step for absorption and subsequent therapeutic action. Improved absorption can be achieved by use of delivery systems, which can enhance drug dissolution from its dosage form and hence there is definite need for the enhancement of solubility of Mirtazapine by promising approach of self emulsifying drug delivery system. The solubility studies were carried out using various oils and surfactants. Liquid and solid self emulsifying drug delivery system of Mirtazapine with sesame oil, Span 20 and PEG 200 were successfully prepared using components which imparted higher thermodynamic stability to the self emulsifying drug delivery system. The interaction between drug and excipients was carried out by infra-red study which revealed that there was no interaction between drug and excipients. Converting the liquid self emulsifying drug delivery system to solid dosage increases stability and ease of handling of formulation. The problem of efficiently delivering poorly water soluble drug could be solved by such innovative lipid based drug delivery system that may increase its solubility and bioavailability. Hence solid self emulsifying system is useful dosage form for oral delivery of Mirtazapine.
Evaluation Of In Vitro Anti-Cancer Activity of Hydroalcoholic Flower Extract Of Butea Monosperma Var. Lutea against Raw Cell Line

Manish A. Kamble*, Disha M. Dhabarde, Ashwini R. Ingole, Kavita R. Pandey, Ruchi S. Shivhare, Debarshi Kar Mahapatra

Kamla Nehru College of Pharmacy, Nagpur 441108, Maharashtra, India

Email: manish.kamble21@gmail.com

ABSTRACT

Butea monosperma Var. Lutea a native of India is commonly known as “Palash” and popularly known as “Flame of Forest”. Traditionally it has been found that flowers have antimicrobial, wound healing, antifungal, antidiarrhoeal, hypoglycemic, hepatoprotective, antioxidant, anthelmintic, anti-convulsive, antistress, anti diabetic, anti-inflammatory activity. In the present study crude hydroalcoholic flower extract was examined for anticancer activity. To determine in vitro anticancer activity, different concentrations of crude extract were tested on RAW (Mouse leukaemic monocyte macrophage) cell line by 3-(4,5-dimethyl thiazole-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay. The extract showed a significant antiproliferative activity and a dose dependent effect. Minimum inhibition of (3.17%) was shown by extract at concentration 62.5 µg/ml and maximum inhibition (33.51%) observed at 500 µg/ml. The flower extract showed activity in potential range for further investigation on cancer cells.
Hygrophila Spinosa T. Anders: An Updated Review on Its Traditional Uses, Phytochemistry and Pharmacological Activities

Swaha Satpathy*, Bharti Ahirwar

Institute of Pharmacy, Guru Ghasidas Vishwavidyalaya, Koni-495009, Bilaspur (C.G.), India

Email: swaha22@rediffmail.com +917415691177

ABSTRACT

Hygrophila spinosa T. Anders is described as Ikshura, Ikshugandha and Kokilasha in Ayurvedic literature, found in moist places on the banks of tanks, ditches, paddy fields etc., widely distributed throughout India. Various morphological parts viz. seeds, whole plant, leaves, roots and ash of the plant are predominantly used for the treatment of various ailments. The plant has been reported to contain flavonoids, alkaloids, sterols, triterpenes, carbohydrate, proteins, tannins and an isoflavone glycoside. Furthermore, it has been reported to have various pharmacological properties viz. antioxidant, antitumor, anti-inflammatory, analgesic, antipyretic, erythropoietic, hepatoprotective, antimicrobial, diuretic, antidiabetic, CNS, androgenic & anabolic, neuroprotective and nephroprotective activities. This review is a ready reference of the traditional uses, salient diagnostic features, phytochemical profile and pharmacological activities of H. spinosa which would further help scientists/researchers for phytopharmacological exploration of the plant with mechanistic study and development of novel drug delivery system to enhance the potency.
Antimicrobial Activity of Different Extracts of *Delphinium Ajacis* Linn.

**Arjun Patra**

Institute of Pharmacy, Guru Ghasidas University, Bilaspur, Chhattisgarh

Email: drarjunpatra22@gmail.com : 07587471798

**ABSTRACT**

*Delphinium ajacis* Linn. (Ranunculaceae) is commonly cultivated in gardens for its beautiful flowers of various colours like blue, white, violet or pink. The plant contains mainly alkaloids viz. ajacine, ajacinine, and ajacinoïdine. It also contains lycotonine. The plant is not much explored for its pharmacological potential. The present study evaluates the antibacterial and antifungal activities of leaf, stem and root of the plant species by disc diffusion method. The alcoholic and aqueous extracts were screened for antibacterial and antifungal activities at 200 µg/disc. The extracts exhibited antimicrobial property against different bacterial and fungal strains, but the potency is less than the standard drugs. Hence, to enhance the potency the bioactive compounds may be isolated from various extracts followed by pharmacological screening.
Hepatoprotective Activity of *Astragalus gummifer* gum In Thiocetamide Induce Hepatotoxicity Rats

Pradeep Kumar Samal

Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur, (C.G.) - 495009 India

Email: samalpharmacology@rediffmail.com

ABSTRACT

Powder gum of *Astragalus gummifer* was physically characterized. The physical properties which were studied during the current experiment include moisture and ash content, pH, water holding capacity, particle size, tapped density, bulk density, Carr’s index, Hausner’s ratio, angle of repose, contents of glucose, uronic acid, sulfate and viscosity. Morphological, Spectral (FTIR) and DSC thermal analysis revealed polysaccharide nature of gum. The DPPH radical scavenging activity of gum showed RSA comparable to that of silymarin. Hepatoprotective potential of gum in terms of biochemical parameters, SGOT, SGPT, ALP and BRN were significantly increased (P < 0.05) and reduction of serum Total Protein in the group of rats given thioacetamide (100 mg/kg s.c.). Histopathological study revealed that gum under study antagonize the effect of thiocetamide by acting, either as membrane stabilizer, thereby preventing the distortion of the cellular ionic environment associated with thiocetamide intoxication, or by preventing interaction of thiocetamide with the transcriptional machinery of the cells.
Dendrimers And Gene Delivery: Two Newfangled Pathways For Ophthalmic Drug Delivery

K. Kesavan*

Department of Pharmaceutics, Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Koni, Bilaspur, Chhattisgarh, India - 495009

ABSTRACT

The review is focused on dendrimers and gene delivery as two newfangled pathways of development that promise a major impact on future ocular drug therapeutics. Dendrimers are macromolecular compounds made up of a series of branches around a central core. Their nanosize, ease of preparation, functionalization and possibility to attach multiple surface groups render them suitable alternative vehicle for ophthalmic drug delivery. Gene therapy is the treatment of diseases based on the introduction of genetic material into target cells of the body. Important advances of gene therapy include availability of viral and non-viral vectors that are able to efficiently transduce various ocular cell types, the use of intraocular delivery routes and the development of transcriptional regulatory elements that allow sustained levels of gene transfer in small and large animal models after a single administration. Gene transfer into ocular tissues has been demonstrated with growing functional success and may develop into a new therapeutic tool for clinical ophthalmology in future. The review, therefore, was conducted with the view to summarize the recent development in area of dendrimers and gene delivery which are examined in relation to their use in ophthalmology.
**In Vitro Antioxidant Activity Of Methanolic Extract Of *Leea Asiatica***

Kamalpreet Bhatia*, Parimal Katolkar

Manoharbhai Patel Institute of Pharmacy (B. Pharm.), Kudwa, GONDIA 441 614 (MS), INDIA

Email: kpreetbhatia@gmail.com

**ABSTRACT**

The main objective of the present work is to investigate the in vitro antioxidant activity of methanolic extract of leaves of *Leea asiatica*. 1-1-Diphenyl-2-picryl-hydrazyl (DPPH) radical, superoxide anion radical, nitric oxide radical and hydroxyl radical scavenging were carried out to evaluate the antioxidant potential of the extract. The free radical scavenging activity of methanolic extract of leaves of *Leea asiatica* increase in a concentration dependent manner. The methanolic extract possesses statistically significance DPPH free radical scavenging activity. Extract inhibited 45.23±5.17 nitric oxide radical generated from sodium nitroprusside whereas, curcumin in the same concentration inhibited at 87.24 ±4.12%. Moreover, *Leea asiatica* extract scavenged the superoxide radical generated by xanthine/xanthine oxidase system. The extract in the dose of 1000 µg/ml inhibited 66.14 ±3.41%. The hydroxyl radical was generated by Fenton’s reaction. The amounts of total phenolic compound were determined and 56.98 µg pyrocatechol phenol equivalents were detected in one mg of extract. Therefore, *Leea asiatica* could be considered as a potential source natural antioxidant.
Needle Free Injection Technology and Its Significance Worldwide

Meenakshi Jaiswal

Institute of pharmaceutical sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur (CG) - 495009

ABSTRACT

Needle free injection technology (NFIT) is an extremely broad concept. It includes a wide range of drug delivery systems that drive drugs through the skin using any of the forces as Lorentz, Shock waves, pressure by gas or electrophoresis. This propels the drug through the skin, virtually nullifying the use of hypodermic needle. This technology is not only touted to be beneficial for the pharma industry but developing world too find it highly useful in mass immunization bypassing the chances of needle stick injuries and avoiding other complications including those arising due to multiple use of single needle. The NFIT devices can be classified based on their working, type of load, mechanism of drug delivery and site of delivery. To administer a stable, safe and an effective dose through NFIT, the sterility, shelf life and viscosity of drug are the main components which should be taken care of. Technically superior needle-free injection systems are able to administer highly viscous drug products which cannot be administered by traditional needle and syringe systems, further adding to the usefulness of the technology. NFIT devices can be manufactured in a variety of ways; however the widely employed procedure to manufacture it is by injection molding technique. There are many variants of this technology which are being marketed, such as Bioject (®) ZetaJetTM, Vitajet 3 and Tev-Tropin (®). Larger investment has been made in developing this technology with several devices already being available in the market post FDA clearance and a great market worldwide.
Preliminary Phytochemical Screening Analysis and Therapeutic Potential of *Tecoma Stans*

**Rohit Kumar Bargah**

Department of Chemistry, Govt. S.P.M. College Sitapur, Distt. - Surguja (C.G.) India, 497111.

Email: rohitbargah1978@gmail.com

**ABSTRACT**

Many herbal remedies have so far been employed for the treatment and management of various ailments since the beginning of human civilization. *Tecoma stans* Linn is also known as yellow bells, belonging to the family Bignoniaceae. *Tecoma stans* is widely distributed all over the world specially in countries like South east Asia, Mexico and some Oceanic islands with warm climate conditions. The present review comprises the ethanopharmacological, phytochemical and therapeutical potential of *Tecoma stans*. Phytochemical studies on the plants revealed the presence of bioactive components comprising flavonoids, steroids, terpenoids, alkaloids, tannins, saponins and phenols. Pharmacologically *Tecoma stans* flower and leaves are traditionally used for many ailments including arthritis. It also processes anti-spasmodic, anti-oxidants properties, anti-inflammatory, anti-analgesic, anti-microbial and anti-fungal properties and extensively used in the treatment of diabetes. *Tecom stans* seems to hold great potential for in-depth investigation for various biological activities and it may be useful in developing new bioactive constituents with more therapeutic value.
Synthesis of some 1-(1, 3, 4-Thiadiazol-2-Yl)-3-Aroyl/Alkanoyl Thiourea Derivatives and Their Evaluation for Anticancer Activity

Sanmati K. Jain*, Rahul Jain

SLT Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya (A Central University), BILASPUR (C.G.) 495009

ABSTRACT

Thiourea and 1, 3, 4-thiadiazole derivatives were reported in the literature to have anticancer activity. Therefore in the present work, 1-(1,3,4-thiadiazol-2-yl)-3-aroyl/alkanoyl thiourea derivatives were synthesized and evaluated for anticancer activity using in vitro microculture tetrazolium (MTT) assay. Cell-line employed was MCF-7. Thiadiazolyl thiourea derivatives were prepared by reacting 5-aryl-2-amino-1, 3, 4 thia diazoles with aroyl/alkanoyl isothiocyanates. Structures of the compounds were elucidated using IR, 1H-NMR and mass spectroscopic techniques. All the synthesized compounds have shown varying degree of GI50 (concentration of drug causing 50% inhibition of cell growth) in the range of 37 to 64 µM/ml. Among all the six synthesized compounds, compound 1-benzoyl-3-(5-p-tolyl-1,3,4-thiadiazol-2-yl)thiourea (TTU-RJ-03) was found to be most potent with GI50 value of 37.9 against MCF-7. In this cell line assay, all the test compounds displayed much lesser activity as compared to the standard drug i.e., Adriamycin.
Dengvaxia (Cyd-Tdv): Prosperous Implement against Dengue Virus

Purusottam Banjare

Institute of Pharmaceutical Sciences, Guru Ghasidas Central University, Bilaspur, Chhattisgarh, 495009, India

Email: banjarepurusottam2@gmail.com

ABSTRACT

Dengue is the most rapidly spreading viral disease over the world which is transmitted by Aedes species mosquitoes (A. aegypti and A. albopictus). Dengue is most prevalent in tropical and subtropical countries of Asia, the Pacific and the Americas. Every year around 390 million people were infected by dengue virus (DENV) worldwide. DENV are members of the flavivirus genus first isolated in 1943 and are of four types (DEN1-4). Recently a newer type of dengue virus had been introduced or identified that was named as DEN5. Among them DEN1 adopt immunity against further infection and does not reoccurred in future. Other 3 types (DEN 2, 3, 4) are the main causative forms for severe dengue hemorrhagic fever and dengue shock. The symptoms in dengue are hemorrhagic fever and dengue shock may be mild or severe like headache, vomiting, joint pain, fever etc. The treatment procedure continues with plenty of fluids intake as well as antipyretic (only paracetamol) drugs. Still now there is no specific medication or vaccination for the treatment as well as prevention of the dengue available. In late 2015 the first dengue vaccine Dengvaxia “(CYD-TDV)” was approved in foreign countries (Mexico, US and others) which was prepared by the live recombinant tetravalent vaccination technique by “SANOFI PASTEUR”. This vaccination should be done under the age criteria of 9-45 years. Still it is not approved in India which could be a hopeful measure in prevention of dengue.
Bridging the Innovation Gap between Academia and Industry

Turkane D R¹, Banafar A², Bhairam M³

¹Department of Pharmacology, All India Institute of Medical Science, Raipur, C.G.
²Department of Pharmaceutics, Royal College of pharmacy, Raipur. C.G.
³Department of Pharmaceutics, Columbia college of Pharmacy, Raipur, C.G.

Email: turkanedhanushram@gmail.com

ABSTRACT

The present scenario in mind, this paper is an effort to highlight a number of current and future initiatives aimed at gearing up and accelerating interdependence between academic and industrial prospects in India by laying special emphasis on research and development initiatives, governance of Indian management schools, building centres of excellence and attractive packages to allure competent faculty. When academia and industry work in tandem to push the frontiers of knowledge, they have the potential to become a powerful engine for innovation and economic growth. India is a growing economy and has the attention of world players for investment and expansions. Due to this arises a need for ready-for-the-job people. But contrary to this, there is a large set of employees who need to be skilled, re-skilled and up-skilled to meet the needs of the changing environment. This is only possible through the active role of industry in sharing the know-how and expertise and academia in developing programme and solutions to fill the void. The Gap between the needs of the industry and aspirations of academic community is very large. Academicians always have a strong feeling that unless these initiatives find a place in industrial sector, this interaction will be confined to only developmental activities. There is a strong mismatch in perceptions of the two on the issues related to technology development. At present, the academic community is not geared to face this challenge of translating an evolving idea into technology development.
Assessment of Hypoglycemic Activity and Quality Evaluation of a Noval Polyherbal Formulation

Sanjay Kumar Lanjhiyana¹ and Sweety Lanjhiyana²

¹SLT Institute of Pharmaceutical Sciences, Guru Ghasidas University, Bilaspur-495009.
²School of Pharmacy, Chouksey Engg.College, Bilaspur-495001.

ABSTRACT

The present study was carried out to focus on the hypoglycemic activity of a developed polyherbal formulation (NPHF) consisting of six medicinal plant extracts viz., Elaeodendron glaucum, Aegel marmelos, Murraya koenigii, Aloe vera, Asparagus racemosus and Acacia arabica in alloxan induced diabetic rats. The formulation was subjected to pharmacognostic and phytochemical evaluations. Further, the results showed that the formulation treated group significantly lowered the glucose level in alloxan induced diabetic animals. Treatment with NPHF at the dose 300 mg/kg to diabetic rats resulted in significant reduction of serum glucose, total cholesterol, creatinine, and urea whereas significant increased level of insulin and high density lipoprotein were found. The formulation treatment elevated level of the antioxidants enzymes in alloxanized rats. Histopathological studies after 21 day of treatment revealed that the regeneration effect of NPHF on pancreatic islet cells as compared to standard drug. The present study demonstrated that the developed NPHF showed significant hypoglycemic activity which may be beneficial for the management and treatment of diabetes mellitus and related complications.
Design, Synthesis and Characterization of Some Novel Benzoic Acid Derivatives as Local-Anesthetic Agents

Kavita R. Pandey *, Ashish A. Kanhed 2, Ashok P. Mehere 2, Debarshi Kar Mahapatra 1

1 Department of Pharmaceutical Chemistry, Kamla Nehru College of Pharmacy, Nagpur – 440108, Maharashtra, India

2 Department of Pharmaceutical Chemistry, Sharad Pawar College of Pharmacy, Nagpur – 440104, Maharashtra, India

Email: kavitashukalpandey@gmail.com

ABSTRACT

Local anesthetic activity was investigated for eight ester and ten amide derivatives of benzoic acid. These compounds were synthesized by Fischer’s esterification. The synthesized derivatives were characterized by various instrumental techniques. ACD Lab Suite® was used to determine various physiochemical properties of synthesized molecules. Initially infiltration local anesthetic activity was determined by Bianchi’s method. Five compounds (A1, A2, A4, A7, and A10) showed promising local anesthetic activity, where comparison was made with lignocaine. However, the studied compounds have potency lower than that of lignocaine. Compounds showing promising activity with low toxicity were studied further by in-vivo rat siatic nerve method using increasing doses. Compounds were studied for topological similarity with lignocaine where it showed good local anesthetic activity and was relatively very less toxicity. Further structural advancement may be done by researchers to increase the potency of these compounds since they are relatively less toxic than lignocaine.
Hypolipidemic Potentials of Partially Purified Phytoconstituents from Polyherbs: Exploration of Pharmacological Targets

Ruchi S. Shivhare*, Disha M. Dhabarde, Manish A. Kamble, Ashwini R. Ingole, Kavita R. Pandey, Debarshi Kar Mahapatra

Kamla Nehru College of Pharmacy, Nagpur-441108 Maharastra, India.

Email: shivharer4@gmail.com

ABSTRACT

Metabolic syndrome has become a global epidemic in five major scopes; insulin resistance, glucose intolerance, abdominal obesity, low high density lipoprotein cholesterol and hypertriglyceridemia. Total cholesterol and low-density lipoprotein account for atherosclerotic and cardiovascular disease progression. Though varieties of synthetic drugs are often preferred, however, the search for effective armamentarium from the plant kingdom is still in pace. In this research, partially purified phytoconstituents from *Terminalia chebula*, *Zingiber officinale*, *Allium Sativum*, *Commiphora mukul*, *Curcuma longa*, *Murraya koenigii*, *Camellia sinensis*, *Piper nigrum*, were formulated and their lipid lowering potential was studied exhaustively using poloxamer 407 (P-407) induced hyperlipidemia and cholesterol suspension induced hypercholesteromia models. Biochemical parameters were determined as per standard protocols. Further molecular investigations revealed that this mixture of phytocontituents acts either by inhibiting HMGCoA reductase inhibition or lipoprotein lipase activation. This study thereby revealed the potential of traditional polyherbal formulation as lipid lowering drug therapy with a justified mechanism of action.
Designing And Characterization Of Immunopotent Lipid Based Particulate System Using Center Composite Design

Sunita Minz

Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh (India).

ABSTRACT

The current study was focused on fabrication of the immunopotent lipid based particulate system entrapped rHBsAg admix with the toll like receptor-4 adjuvant i.e. monophosphoryl lipid-A. The formulation was developed using the center composite design (CCD) by solvent evaporation method and, with a total 20 experimental runs, performed with the combination of response surface methodology (RSM). These lipid particles were characterized for mean particle size, entrapment efficiency, drug-loading, morphological study and immunogen integrity. The optimized formulation, with a desirability factor of 0.94, was selected and characterized. The results of % EE (72.12± 1.2), % DL (1.11± 0.2) and mean diameter of (130.2± 3.2) nm were very close to the predicted values. Also, spherical and smooth surface particles were observed with the transmission electron microscopy. Structural integrity of encapsulated rHBsAg which revealed identical monomer bands (Mw ~ 24 kDa) for the naïve and incorporated antigen.
Exploring QSAR Analysis using GFA analysis of Antitubercular Agents: Biphenyl Analogues Of 2-Nitroimidazo-[2, 1-B] [1, 3] – Oxazines derivatives

Partha Pratim Roy¹, Jagadish Singh¹, Supratim Ray²

¹Institute of Pharmaceutical Sciences, Guru Ghasidas University, Bilaspur, Chhattisgarh, 495009, India,
²Department of Pharmaceutical Sciences, Assam University, Silchar 788011, India

ABSTRACT

The present study aimed to explore importance of the topological, thermodynamic, spatial and physicochemical properties of ninety eight substituted biphenyl analogues of 2-nitroimidazo-[2, 1-b] [1, 3]-oxazines towards the antitubercular activity. Activity of the compounds were converted to logarithmic scale and used as response variable for the QSAR analysis. Genetic function approximation (GFA) was used as the chemometric tool for the study. Dataset division (training and test set) was done using k-means clustering techniques. The models indicate good statistical significance both internally (Q²:0.636- 0.732) as well as externally (R²_pred:0.679-0.686) according to the validation criteria. Additionally, the models also fulfill the r²_m(overall) criterion of Roy and Roy et al. Based on r²_m(overall) a GFA model with spatial, thermodynamic and topological descriptors appears to be the best model (r²_m(overall) =0.556). The study also indicates hydrophobicity, branching and presence of electronegative atoms enhance the activity. On the contrary ortho and meta linked attachments of the biphenyl analogs to 2-nitroimidazo-[2, 1-b] [1, 3]-oxazines shows detrimental contribution towards activity.
Synthesis and Evaluation of Anticancer Activity of Some 1, 3, 4-Oxadiazole Derivatives against EAC Bearing Mice Model

Jagadish Singh, Partha Pratim Roy, Shalini Bajal and T K Maity

1Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur-495009 Chhattisgarh, India,

2Department of Pharmaceutical Technology, Division of Pharmaceutical chemistry, Jadavpur University, Kolkata-700032, West Bengal, India

Email: jagadishpharm09@gmail.com

ABSTRACT

A series of 2, 5-disubstituted 1, 3, 4-Oxadiazole derivatives (4A-4G) have been synthesized starting from aromatic benzaldehyde. Structures of the final compounds were characterized by using IR, $^1$HNMR and Mass spectroscopy. The anticancer study was investigated against Ehrlich Ascites Carcinoma bearing albino mice. The synthesized (4A-4G) compounds were administered intraperitoneally at dose of 20-25mg/kg; body weight per day for 7 days after 24 hour of tumor inoculation in mice. 5-Fluorouracil (20mg/kg; body weight) was used as the standard drug. Synthesized compounds (4A-4G) treated group remarkably decrease the body weight, tumor volume, packed cell volume, viable cell count and increase the tumor weight (%) inhibition, tumor cells (%) inhibition, the life span and nonviable cell count of EAC tumor bearing mice when compared to control group. Also, synthesized compounds (4A-4G) showed significant results on different hematological parameters of cancer. All the synthesized compounds (4A-4G) revealed significant anticancer activity in EAC bearing mice. The present investigation supported that oxadiazole as potent anticancer molecules for future study.
Nanocarriers In Targeted Drug Delivery: Focus On Treatment Of Breast Cancer

Pankaj Kumar Kathle*, K. Kesavan

SLT Institute of Pharmaceutical Sciences Guru GhasiDas Vishvavidhyalaya (a central University), Koni, Bilapur – 495009 (C.G.) India.

ABSTRACT

Nanocarriers should be developed to improved patient treatment through the detection of targets and surrogate molecular level that can help direct suitable treatment regimens for safety and efficacy of drug. This review focused on nanocarriers for the targeted drug therapies of breast cancer as well as the inclusively of new adjuvant carriers in the classical regimens with the ultimate goal of enhancing efficacy of drugs and minimizing toxicity to targeted site. In case of particularly breast cancer in targeted to tumor and various receptors/enzymes like- BRA C1, BRA C2, ER, PR, HER-2(Positive or Negative), Triple negative receptor (ER+PR+HER-2), AR, PR, CytP-450 for various nanocarriers approaches like-Nanoparticle, Liposome, Microsphere, Microemulsion, Neosomes, Nanomedicine, Viral and Non-viral Nanocarriers, Micelles, Dendrimers containing specific drug(s) with appropriative biomarkers. These biomarkers should be choose based on drug-specific targets to tumor and/or differential expressive factors like-mutation sites, newly over expressed of cancerous cells in various organs (Breast and other as Prostate, Hepatic, Lungs etc.), nucleic acids, or cell lineage profiles of patient(s) disease for targeted/ investigation purpose. The main aim of this review nanocarrier’s are approaching to targeted drug therapies are give a significantly and potential usefulness in future management of early stage and metastatic breast cancer therapies.
Nose-To Brain Delivery: Role of Nano-Carriers

Amrish Kumar*, Sunil Kumar Jain

Department of Pharmaceutics, Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya (Central University), Bilaspur-495009, Chhattisgarh, India

Email: amrishmpharm@gmail.com

ABSTRACT

The currently available approaches for the delivery of therapeutic molecules to brain are somewhat challenging due to discriminating barricades that seize the CNS from the circulatory system. In recent years, researchers are focusing on nano-carriers in combination of alternative routes i.e. nasal administration. The olfactory region of nasal cavity provides a portal for the transfer of administered drug directly into the brain. However, such transfer of therapeutic moieties preferentially depends on their physicochemical properties. The utilization of nano-carriers revolutionized the development of formulations in this perspective as they effectively combat with different barriers associated with nasal deliverance i.e. mucociliary clearance, low dosing volume, sensitivity, irritation etc. Several of the nano-carriers e.g. nanoparticulates, nanoemulsions, nanogels, nanosuspensions etc were successfully investigated for their potential for nose-to-brain delivery of therapeutics. The results of such attempts indicates that nasal delivery may be useful for the delivery of CNS drugs, yet an appreciation of pharmacokinetic issues and improved knowledge of nasal absorption through olfactory tract will be needed to develop more efficient systems for drug delivery via this route.
Characterization of Transdermal Formulation by Franz Diffusion Cell Using Synthetic Membrane versus Rat Skin

Rakesh Raj, Pooja Mongia Raj and Alpana Ram

Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya Bilaspur C.G. 495009 India

ABSTRACT

The ultimate goal of development of transdermal pharmaceutical formulation is easily permeated it through skin. But at primary stage use of rat skin is unnecessary killing of rodents. Alternative to animal skin is very essential to overcome such limitation. In this study we used synthetic membranes in Franz diffusion cells for topical formulation quality assessment should provide least resistance to drug diffusion. The diffusion rates of aceclofenac (NSAID) across synthetic membranes and rat skin were determined using Franz diffusion cells. Relation between membrane thickness, pore size and molecular weight also checked. The present investigation showed that the porous membranes can be categorized into high flux (> 10 mg/cm$^2$) and low flux (< 5 mg/cm$^2$) membrane. Drug flux study did not show good correlations with membrane and skin. Synthetic membrane varied drug flux as compared to skin; hence researchers should take very strong emphasis in choosing membrane. Further this method is can be especially helpful to study the release profiles of different transdermal formulations in early development.
Development and Optimization of Mesalazine Nanoparticles using $3^2$ Factorial Design

Pooja Mongia Raj and Alpana Ram

Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.) India

ABSTRACT

Drug delivery for treatment of ulcerative colitis, conventional oral drug delivery systems are not effective, because the proper amount of drug not reach the appropriate site of action. Hence, there is a need to develop effective, safe and site specific therapy for the treatment of colitis. The aim of the present study was to design a colon-specific delivery system of an anti-inflammatory drug, mesalazine, with minimal degradation and most selective delivery of the drug with relatively higher local concentration, which may provide more effective therapy for ulcerative colitis. Factorial designs (three factors and two levels) for eudragit S-100 (pH-dependent polymer) -coated, chitosan (natural polysaccharides)-based nanoparticles of mesalazine were constructed and conducted in a fully randomized manner to study all possible combinations. Based on the desirability function formulation, the optimized formulation was found to be the best formulation. The overall desirability coefficient of formulation was found to be 0.825. The formulation was subjected to in vitro release studies, and the results were evaluated kinetically and statistically. The nanoparticles started releasing the drug at the beginning of 7\textsuperscript{th} hr, which corresponds to the arrival time at proximal colon. The cumulative \% drug release 98\% was found at the end of 16 h. The release kinetics showed that the release followed the Higuchi model, and the main mechanism of drug release was diffusion. The study presents a new approach for colon-specific drug delivery.
Recent Progress in the Management of Colorectal Cancer

Kuldeep Rajpoot, Sunil K. Jain

Institute of Pharmaceutical Sciences, Guru Ghasidas Central University, Bilaspur, (CG) – 495009
Email: Kuldeep_sagar06@rediffmail.com

ABSTRACT

Colon targeted drug delivery is an active area of research for local diseases affecting the colon, as it improves the efficacy of therapeutics and enables localized treatment, which reduces systemic toxicity. Despite recent progress in our knowledge about the development and therapy of colorectal cancer (CRC), it remains one of the major cancer related deaths throughout the world. With the introduction of new cytotoxic and targeting agents, a significant improvement in progression-free and overall survival has been achieved. However, a significant percentage (40–50%) of patients do not experience beneficial effects and suffer from severe toxicities. It will be critical to identify molecular markers, which may help to assess therapeutic response and outcome in CRC. Validation of predictive and prognostic molecular markers will enable oncologists to tailor patient specific treatment strategies for the individual patient according to the molecular profile of both the patient and their tumor. Individualized therapy will help to improve therapeutic efficacy and to minimize toxicities and therapeutic expenses. Current chemotherapeutic regimens for the treatment of metastatic colorectal cancer include the cytotoxic agents' 5-FU, irinotecan, and oxaliplatin, and the targeted agents' bevacizumab, cetuximab and panitumumab. With the implementation of these targeting agents to the armamentarium of chemotherapeutic drugs, response rate and overall survival increased dramatically. With recent progress in the understanding of the VEGF and EGFR-pathways the potential molecular mechanisms underlying the clinical response to bevacizumab, cetuximab and panitumumab have gained significant knowledge. However, so far no predictive or prognostic markers are validated in the clinical setting.
Exploring Mucosal Immunization Using Bovine Serum Albumin Loaded Microparticles

Kantrol Kumar Sahu

SLT Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur (CG)

ABSTRACT

Vaccination is one of the important tools of disease prevention and acts by mimicking the natural pathogens. Exposure to the mucosal surface generally gives rise to profound antibodies production as it’s the main site of pathogen entry into the body and interplay of innate as well as adaptive immunity. The aim of this study was to explore mucosal surface for potent immune response using bovine serum albumin (BSA) microparticles as a model antigenic particle. Microparticles were prepared by double emulsion solvent evaporation technique and were characterized for size, shape, zeta potential, antigen integrity, surface adsorption efficiency and in vitro release. The humoral immune responses generated by intrarectal administered BSA loaded microparticles were studied by ELISA. Significantly increased level of immune response (IgG and IgA) was observed by intrarectal administered BSA microparticle as compared to orally administered and blank microparticles. In conclusion, results from this study demonstrate the valuable use of vaccines by mucosal immunization. Newer advancements in mucosal immunization create attention to researchers and open new vista for the development and testing of vaccine formulation through mucosal exposure.
Knowledge Exchange is a Challenge in Any Sector

Uttam Sharma$^1$, Soumya Deb$^1$, Sayantan Moitra$^1$, Ram Kumar Sahu$^2$

$^1$Institute of Pharmacy, Jalpaiguri, Jalpaiguri, W.B

$^2$Columbia College of Pharmacy, Mandhar, Raipur, C.G

ABSTRACT

Knowledge exchange is a challenge in any sector. In case of pharmaceutical academic institute and pharmaceutical industry, it is very challenging. It may be done by two methods one is by communication of researchers with industry; another is career potential for graduate students. The research are done by three sector, they are government, private and individual academician. To develop a new product or theory, the challenge are like: how the project leader understood it, how the analyst design it, how the programmer wrote it, how the business consultant describe it, how the project was documented, what operation installed, how the customer was build, how it was supported, what the customer really needed. To complete a fruitful research between pharmaceutical academic institute and pharmaceutical industry management can play a vital role considering some points like: internationally competitive research, interdisciplinary research, effective industry partnerships, and efforts for career development of young scientists.
Closing the Gap between Education and Industry

Chandrima Roy\(^1\), Nikita Bhakat\(^1\), Uttam Sharma\(^1\), Ram Kumar Sahu\(^2\), Ananta Choudhury\(^2\)

\(^1\)Institute of Pharmacy, Jalpaiguri, Jalpaiguri, W.B.

\(^2\)Columbia College of Pharmacy, Mandhar, Raipur, C.G.

**ABSTRACT**

A successful industry is fuelled by a continued flow of youth who are proficient in discovery— but there are fears that the well is drying up. Education should be a hot bed for innovative and ambitious enterprises. All too often entrepreneurs who are still in college or students who want to branch out into enterprises are frustrated by practical restrictions. To overcome this firstly the government should aim to link education to the needs of enterprise by stimulating educational institution to incorporate entrepreneurial skills in their curriculum. Secondly the government should abolish the restrictions for students running their own business simultaneously allowing students to graduate while running their own company. Thirdly training institutes should be setup, stricter study regime should be imposed and collaboration with top sectors should be encouraged to produce qualified professionals. Fourthly top sectors should be invited to draw up a master plan to attract more students to science and lastly the gap between education and the labour market should be minimized.
Accadimia Industry Collaboration

Sathi Sarkar¹, Uttam Sharma¹, Ram Kumar Sahu², Sanjib Bahadur²

¹Institute of Pharmacy, Jalpaiguri. Jalpaiguri, W.B.
²Columbia College of Pharmacy, Mandhar, Raipur, C.G.

ABSTRACT

It is a real need of present days to bring industry and academia closer for having mutual benefit of one another by productive discussion about the current need of industry in terms of competent manpower, leadership and sufficient skill. India’s higher education system provides 5 lakh engineers and 27 lakh university graduates every year, but huge of them are failed to get entry in industry due to their lack of industrial knowledge, fear about industrial workload, lack of self motivation, and due to their false notion about impact of industry in society. According to industrialist view ‘we hire people for attitude and train them for the skills’. Desire of self learning, adaptable to guide a team as a leader, strong analytical knowledge, communication skill, capability to understand consumer behavior, self dedication is much more needed attribute of a student as a basic criteria to get a job in industry. To heal the gap the academia should collaborate with various MNC company, should change their curriculums relevance to industrial need, should give their students about the knowledge of industry and discipline and various criteria about industrial aspects, they should send their students for industrial training, scientific learning programs to integrate the education with application and basic anticipation of society and for encouragement of students. Eventually it is very joy full to see that many academia has already started their collaboration with industry and give their students the proper knowledge about industrial impact on society, how industries work and what about their need and students are also gaining enormous encouragement to do great work in various section of industry. Recently our Indian government has started Memorandum of Understanding (MOU) program to intertwine academic institutes and industry with each other and they are prompting academia to take opportunities under this program to build a greater industrially revolutionized India.
Development and Evaluation of Stomach Specific Floating Tablets of Lafutidine

Swati Gupta*, Ritesh Kumar2, Amrish Chandra3, Pawan Kumar Gautam4 and Vijay Kumar Sharma1

1Dr. K N Modi Institute Of Pharmaceutical Education And Research, Modinagar
2IFTM Universities, Moradabad
3Amity Institute Of Pharmacy, Amity University, Noida
4Department of Pharmacy, S. N. Medical College, Agra

Email: pr.swatigupta@gmail.com

ABSTRACT

The present study aims at the formulation of a floating drug delivery system of an antiulcer drug Lafutidine using different grades of HPMC (K4M, K15M & K100M) and an effervescent agent i.e. potassium bicarbonate. Potassium bicarbonate was used as gas-generating agent that enhances tablet flotation. Floating tablet of Lafutidine shall be made with the aim of increasing the gastric residence time of the formulation thereby giving sustained release in the gastric fluid for treatment of peptic ulcer and improving the oral bioavailability of the drug. The tablets were prepared by wet granulation method. The effect of polymer concentration and viscosity grades of HPMC on drug release profile was evaluated. It was found that the release rate of Lafutidine from tablet formulations prepared from HPMC K4M was very high as compared to that from formulations containing higher viscosity grades namely K15M and K100M. The effect of potassium bicarbonate and stearic acid on drug release profile and floating properties were also investigated. The in vitro dissolution study showed that the drug release profile could be sustained by increasing the concentration of HPMC K100M. All the formulations remained buoyant over 12 hrs.
Design and Evaluation of Multiple Unit Gastroretentive Beads of Nizatidine

Surbhi Kamboj¹, Ritesh Kumar², Amrish Chandra³, Pawan Kumar Gautam⁴ and Vijay Kumar Sharma¹

¹Dr. K N Modi Institute of Pharmaceutical Education and Research, Modinagar

²IFTM University, Moradabad.

³Amity Institute of Pharmacy, Amity University, Noida

⁴Department of Pharmacy, S. N. Medical College, Agra

Email: surbhi.dec17@gmail.com

ABSTRACT

The objectives of the present investigation is to develop an intra multi-unit gastroretentive sustained release dosage form of a water soluble drug, Nizatidine, from a completely aqueous environment avoiding the use of any organic solvent, which could cure peptic ulcer. In the present study, gastroretentive beads of suitable antiulcer drug such as Nizatidine shall be made with the aim of increasing the gastric residence time of the formulation thereby giving controlled release in the gastric fluid. This could cure peptic ulcer more efficiently by releasing the drug especially in stomach and also for a prolonged duration of time. The emulsion ion gelation method was used and calcium chloride was used for entrapment. The use of sodium alginate and combinations of sodium alginate with pectin were used to study the effect on the sustaining property of the formed beads. Nizatidine-entrapped beads were prepared and capsulated within hard gelatin capsules. It was found that sodium alginate was not sufficient to sustain the drug release at gastric pH. Instead of it, appropriate combination of alginate and pectin could provide the sustain release of drug. The results showed that these beads can entrap even a water soluble drug as Nizatidine in sufficient amount and also can successfully deliver the drug in stomach for a prolong duration of time The evaluation was based on size analysis, buoyancy, bead water uptake, % yield, % drug loading, In Vitro tests, and statistical analysis. The optimized formulation showed floating of over 15 hrs and In Vitro release of 94.8%.
Formulation and Evaluation of Orodispensible Tablets of Trimethobenzamide Hydrochloride

Sakshi Garg\textsuperscript{1}, Ritesh Kumar\textsuperscript{1}, and Vijay Kumar Sharma\textsuperscript{1}

\textsuperscript{1}Dr. K N Modi Institute of Pharmaceutical Education and Research, Modinagar

Email: sakshigarg1310@gmail.com

ABSTRACT

In the present work, orodispensible tablets of Trimethobenzamide HCl were prepared by direct compression method with a view to enhance patient’s compliance and to mask the bitter taste of drug. Three different superdisintegrants viz. crosspovidone, sodium starch glycolate and croscarmellose sodium were used along with microcrystalline cellulose (Avicel PH 102) and directly compressible mannitol which enhances the mouth feel. Nine formulations having superdisintegrants at different concentration levels were prepared. These tablets were evaluated for drug content, weight variation, friability, hardness, wetting time and \textit{in vitro} disintegration time. Among the formulated tablets containing crosspovidone (at 4.5\% level) showed superior organoleptic properties along with excellent \textit{in-vitro} disintegration time that is 20-25 seconds and better drug release as compared to other formulations. It was concluded that superdisintegrants addition technique is a useful method for preparing oral dispersible tablets by direct compression method.
Conservation of Orchids

Bindiya Prakash¹*, Ritu Thakur Bais²

¹Department of Botany, Sarojini Naidu Govt. Girls Post Graduate (Autonomous) College Shivaji Nagar, Bhopal (M.P) India

²Department of Botany, Govt. Maharani Laxmi Bai Girls Post Graduate (Autonomous) College, Bhopal (M.P) India

ABSTRACT

The conservation of plant biodiversity is an important issue concerning the human population worldwide. Orchids are some of the best known and the largest plant families. Orchids are an integral part of the forest ecosystem but unfortunately the significance of their conservation has not yet caught the conscious eye of the user groups. Orchids are not only a slow growing species in nature but they also take long time to establish better colonies for their survival in a host. This natural complexity, coupled with their popularity worldwide, inspires urgency for orchid conservation while the pressure on the natural environment increases daily. Many orchid species are now considered to be at risk of extinction as a result, directly or indirectly, of two types of human activities: habitat alteration or destruction derived from change in the use of land, and extraction of wild plants for trade. On one hand, collecting for trade affects mostly those few taxa that either produce very showy flowers or provide certain edible products (e.g. salep, vanilla). On the other hand, habitat loss is by far the main threat to most orchids. Plant tissue culture is one of the most widely used techniques for rapid asexual In-vitro propagation of orchid. So to conserve orchids plant tissue culture could be one of the most suitable alternative method.
Stability Study of Laboratory Prepared Ayurvedic Formulation Sitopaladi Churna

Bharti Ahirwar¹, Dheeraj Ahirwar²

¹Institute of Pharmacy, Guru Ghasidas Central University, Bilaspur (CG)-495006,
²School of Pharmacy, Chouksey Engineering College, Bilaspur (CG)

Email: ah_bharti@yahoo.com

ABSTRACT

Stability is aimed at assuring that the drug/drug product remains within specifications established to ensure its identity, strength, quality and purity. Keeping this perspective in mind stability study of laboratory prepared Ayurvedic formulation sitopaladi churna was carried out. Sitopaladi churna was prepared according to Ayurvedic Formulary and accelerated temperature study was carried out at 25±1°C, 30±1°C and 40±1°C for 60, 120 and 180 days for observing the changes in physico-chemical nature of sitopaladi churna. No change was noticed in color, odor ant taste of sitopaladi churna up to storage of 180 days at accelerated temperature while at the same temperature after 120 days no changes were observed in odor also whereas color becomes creamish to whitish brown and taste become acri. In case of pH slightly changes were noticed at the accelerated temperature during storage. Moisture content at 0 day of sitopaladi churna was 5.98% which reduced after 60 days to 5.95% and after 120 days it was 5.91% while after 180 days it was also 5.91%. These results of physicochemical parameters at accelerated stability analysis reveals that no or very little changes were noticed in these parameters during the length of time of 180 days, which is indicative of higher stability of the laboratory prepared sitopaladi churna and a shelf life of more than 2 years may be assigned.
Fate of Phytochemical Products

H. J. Dhongade

Department of Pharmacognosy, Shri Rawatpura Sarkar Institute of Pharmacy, Kumhari, Durg, C.G, (India)

Email: hemantdhongade@gmail.com

ABSTRACT

Most secondary metabolites are bioactive compounds of natural origin. A typical protocol to isolate a pure phytoconstituent from natural origin is bioassay-guided fractionation, meaning step-by-step separation of extracted components and assessing the biological activity, followed by again separation and assaying. The fate of phytoconstituents include fractionating the crude extract, e.g. by solvent partitioning or chromatography, testing the fractions thereby generated with in vitro assay, again fractionating and assaying until pure, active compounds are obtained. After that structural determination of active compounds, typically by using spectroscopic methods. In vitro activity does not necessarily translate to activity in humans or other living systems. The most common means for fractionation are high-performance liquid chromatography (HPLC), flash chromatography, column chromatography, vacuum-liquid chromatography (VLC), thin-layer chromatography (TLC), with each technique being most appropriate for a given amount of starting material. After isolation of a pure substance, the task of elucidating its chemical structure can be addressed. For this purpose IR, nuclear magnetic resonance spectroscopy (NMR) and mass spectrometry (MS) can be used. In the case of drug discovery efforts, structure elucidation of all components that are active in vitro is typically the end goal. The work does not stop after structural identification of in vitro actives, however. The task of "dissecting and reassembling" the crude drug one active component at a time, in order to achieve a mechanistic understanding of how it works in phytotherapy, is quite interesting. This is because it is simply too difficult, from cost, time, regulatory, and even scientific perspectives, to study experimental fractions of the crude drug in humans. In vitro assays are therefore used to identify chemical components of the crude drug that may rationally be expected to have a given pharmacological effect in humans, and to provide a rational basis for standardization of a crude drug formulation to be tested in humans.
Industry - Academic Skill Gap a Conceptual Investigation with Special Emphasis on the Management Education in India

Banafar A¹, Turkane D.R.², Bhairam M³

¹Department of Pharmaceutics, Royal College of Pharmacy, Raipur, C.G
²Department of Pharmacology, All India Institute of Medical Science, Raipur, C.G
³Department of Pharmaceutics, Columbia College Of Pharmacy, Raipur, C.G

Email: banafaralisha83@gmail.com

ABSTRACT

In recent decades, natural products have undisputedly played a leading role in the development of novel medicines. Yet, trends in the pharmaceutical industry at the level of research investments indicate that natural product research is neither prioritized nor perceived as fruitful in drug discovery programme as compared with incremental structural modifications. The Gap between the needs of the industry and aspirations of academic community is very large. Academicians always have a strong feeling that unless these initiatives find a place in industrial sector, this interaction will be confined to only developmental activities. There is a strong mismatch in perceptions of the two on the issues related to technology development. At present, the academic community is not geared to face this challenge of translating an evolving idea into technology development. The present scenario in mind, this paper is an effort to highlight a number of current and future initiatives aimed at gearing up and accelerating interdependence between academic and industrial prospects in India by laying special emphasis on research and development initiatives, governance of Indian management schools, building centres of excellence and attractive packages to allure competent faculty.
Clinical Study Of An Ayurvedic Formulation –Dashmoola Kwatha Gandusha (Retention) Incase Of Mukhpaka (Stomatitis)

Dr. Sandeep Kumar

Deptt. Of Swasthvritta, Uttaranchal Ayurvedic College, Dehradun (UK)

Email: dr.vanshandeep@gmail.com, 9416578727

ABSTRACT

To evaluate the efficacy of Dashmoola Kwatha Ganusha for its antimicrobial activity and improvement in oral hygiene index in patient of stomatitis compare the efficacy of a popular medicinal brand available in market used in case of stomatitis. The study was conducted in 20 patients, 10 in each group-1&2. GROUP -1 was given that market available brand while group-2 was given Dashmoola Kwatha for Gandusha(retention). The effect of treatment was observed both in subjective symptoms & objective parameter (where salivary pH and buffering capacity & microbial count were measured before & after the treatment). Dashmooladi kawatha Gandusha (retention) in Group-2 provided better results in Daha (burning sensation), Srava (secretion), Lalima (redness of tongue), JihavaVedna (Tounguepain), Sarambha (inflammation), pH of saliva and microbial count in salivary sample. On the other hand in Group-1 we got result better to control burning sensation and pain only. Study concluded that both group were effective, but Dashmoola kwatha Gandusha group’s patients got better relief in subjective symptoms compare to popular market available brand.
Role of Ayurvedic Drugs in the management of skin Diseases

Munish Kumar

Deptt. Of Agadtantra, Uttaranchal Ayurvedic College, Dehradun (UK)

Email: munishs91@gmail.com

ABSTRACT

Ayurveda is an ancient system of medicine which is primarily concerned with the preventive and curative aspects for human wellbeing through holistic concepts of physical and mental health. Skin diseases are numerous and a frequently occurring health problem affecting all ages from the neonates to the elderly and cause harm in number of ways. The prevalence of skin diseases are increasing day by day. Contemporary medicines provide temporary relief but not complete cure. Therefore, for safe and complete cure of diseases the whole world is gradually turning towards Ayurveda. Ayurveda can contribute specially in the field of skin problems. ‘Twak’ (skin) is external outermost protecting covering which envelopes the whole surface of the body. This is the base of ‘sparsana Gyanendriya’ (Tactile sensation) it is broad amongst all five Gyanendriyas. The sensation of touch is located in Twak (skin). Acharya Sushruta mentioned 7 layers of skin. In Ayurvedic literature Acharyas mentioned the function of Ayurvedic herbs is to purify blood and eradicate vitiated doshas (Vata, Pitta, and Kapha) from the body as they are mainly responsible for skin disorders and other diseases. In ayurveda skin diseases are known by the common term Kustha. It is of two types: Maha Kustha&Ksudra kustha. According to the tridosha philosophy of Ayurveda insanitary conditions, unbalanced dieting affects aggravate the dosha vata, pitta and kapha which in term affect the skin. Skin is base of Bhrajaka pitta and regulates the temperature of the body. In Ayurvedic literature Acharyas mentioned various herbs as Manjistha(Rubia cordifolia), Haridra(Curcuma longa), Nimba(Azadirachta indica), Khadir(Acacia catechu), Chandana(Santalum album), Sariva(Hemidesmus indicus), Yastimadhu(Glycyrrhiza glabra) etc. are described in many forms (Lepa, Kwatha, Abhyanga, Gandusha, etc.). The aim of this article mainly discussed about the skin diseases and its treatment mentioned in different samhitas of Ayurveda.
Role of Microbial Dynamics and Enzymes during Composting Of Herbal Pharmaceutical Industrial Waste

Mary Ekka

Department of Forestry, Wildlife and Environmental Sciences

Email: mary.evs11@gmail.com

ABSTRACT

The present study was done to analyze the dynamics of microbial, enzymes and chemical parameters during composting of herbal pharmaceutical waste. All the parameters were analyzed at three different intervals of composting (1st, 15th and 60th days). Initially there was high temperature (45.6 ºC) composting mass and on 60th day it dropped to 30.2 ºC. The pH of the sample was initially acidic (3.4) and with the progress of decomposition gradually changed to neutrality (6.8). Electrical conductivity (EC) value was high during initial days on comparing the last day and other stages of composting. The activity of degradative enzymes namely dehydrogenase and urease were initially high (3.98 mg /g/h and 0.25 mg /g/h respectively) while it decreased with composting. The beneficial microbial load was initially low and very high at the last stages of decomposition. The bioassay studies using compost extracts revealed that the 60th day old sample was not phytotoxic in nature.
Biogenic Silver Nanoparticles for Antimicrobial Therapy

Sanjay Kumar Bharti¹, Debarshi Kar Mahapatra², Vivek Asati¹

¹Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur - 495009, Chhattisgarh, India

²Department of Pharmaceutical Chemistry, Kamla Nehru College of Pharmacy, Nagpur – 441108, Maharashtra, India

ABSTRACT

Nanotechnology is an emerging branch of science utilizing technological advances of nanomaterials of size 1 to 100 nm. The nanotechnology in biomedical research and clinical practices emerged as nanomedicine that makes a major impact on human health. Now-a-days, nanomaterials are increasingly used in therapeutics, diagnostics, theranostics and targeted drug delivery due to their unique and specific function at the cellular, atomic and molecular levels. Silver and silver containing compounds have been used therapeutically as antimicrobial agents since ages. With the pace of time, silver nanoparticles (AgNPs) have gained utmost position due to wide range of pharmacological activities such as anti-cancer, anti-inflammatory, anti-platelet, anti-microbial, anti-parasitic and anti-viral etc. AgNPs have traditionally been synthesized using wet chemical techniques, where the chemicals used are often toxic, produces by-products, expensive, and flammable. In the present study, the eco-friendly, simple, size/shape-controlled biosynthesis using plant extract(s), characterization, plausible mechanism of formation and antimicrobial potential of AgNPs have been highlighted.
Ayurvedic Medicines in the Management of Emergency Conditions

Parvesh Kumar

Department of Agadtantra, Uttaranchal Ayurveda College, Dehradun,

Email: dr.parvesh15@gmail.com

ABSTRACT

Each and every physician faces situation where emergency or quick result is required. The main aim of the treatment is to relieve from diseases. Various systems of medicine developed due to different patterns of approach for management of diseases. Ayurveda is eternal. On the account of principles, all systems of medicine have their bases in Ayurveda. Therefore, there is no need of comparison among them. Besides this, various advanced methods used in other including modern medical science may be incorporated in Ayurveda with due consideration of its fundamentals. There are various conditions, which are fatal, and life threatening. In these conditions, specific treatment should be planned out. At present, this treatment is called as emergency management. It is not true to say that Ayurvedic texts are not having description of emergency management. Ancient Acharyas have used various terms like SadyahAshu, Twarita in emergency conditions where quick management is needed.
Efficacy of Ayurvedic Drugs in Management of Ascites (Jalodar)

Dharmendra Panwar

Uttaranchal Ayurvedic College, Dehradun (UK)

Email: Dharmendrachaudhary.bo@gmail.com,

ABSTRACT

Ayurveda is said to be Upaved of Atharvaveda. Samhitas like Charaka, Sushruta and Vagbhat are the richest sources of drugs and diseases. Ascites (Jalodar) is accumulation of fluid in the peritoneal cavity. Ascites is commonly due to cirrhosis and severe liver diseases. Ascites itself is a symptom of several serious problems. The presence of ascites may indicate liver cirrhosis, hepatitis, pericarditis etc. In Ayurveda Jalodar (Ascites) is mentioned under the Udar Roga. In Ayurvedic literature mandagni,, atimadyapan etc. are mentioned under the causes of Jalodra(Ascites). Treatment Of Jalodra (Ascites) in Ayurveda includes oral medicines as well as Virechna (Purgation) to reduce the accumulation of fluid. Virecha (Purgation) have diuretic function which helps to excrete the fluid. Ayurvedic drugs like Kalmegh( Andrograhis paniculata), Kutki( Picrorrhiza kurrora),Bhringraj(Eclipta alba), Punarnava( Borhevia diffusa), Kareer(Capporis aphylla)act as hepatoprotective. Cow milk gives strength to body without increasing fluid level. The aim of his Article discussed abaout the ayurvedic management of Jalodar roga (Ascites).
Antioxidant Potential and the Estimation of Total Phenolic and Flavonoid Contents of the Rhizome Extract of *Polygonatum Verticillatum* and *Polygonatum Cirrhifolium*

Sandeep Kumar Singh*, Dr. Arjun Patra

Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

E-mail: drskmpd@hotmail.com

**ABSTRACT**

*Polygonatum verticillatum* and *Polygonatum cirrhifolium* dried rhizomes (20g) were extracted successively with petroleum ether (60-80 °C), dichloromethane, chloroform, and ethanol and finally aqueous via soxhlation. All the extracts were subjected to total phenolic content, total flavonoid content and antioxidant activity using 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay and 2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid) (ABTS). Petroleum extract and ethanolic extract exhibit antioxidant activity and ethanolic extract showed the highest antioxidant potential with 62.47±4.8% and 58.32±2.1% inhibition at a higher concentration (*Polygonatum verticillatum* and *Polygonatum cirrhifolium* respectively). The remaining two solvents; chloroform and aqueous extracts showed sound antioxidant activity when compared with the standard; and dichloromethane did not exhibit activity. The total phenol content was 82.65±1.8, 68.22±1.7 and 53.01±0.3 mg g⁻¹ and 69.06±2.5, 59.19±0.7 and 51.01±2.3 mg g⁻¹ in the ethanol, pet. ether and aqueous extracts respectively. In all, ethanolic extract generally, exhibited the highest values of antioxidants. The anti-radical potential of *Polygonatum verticillatum* and *Polygonatum cirrhifolium* extract were shown significant antioxidant potential against BHA (Butylated hydroxyanisole). The greater amount of phenolic compounds leads to more potent radical scavenging effect as shown by both the extract.
A Potentiality of Chhattisgarh to Start Large Scale Production of Herbal Pharmaceuticals

Khomendra Kumar Sarwa*, Vijendra Kumar Suryawanshi

Shri Rawatpura Sarkar Institute of Pharmacy, Kumhari, Durg-490042

ABSTRACT

The demand for plant based therapeutics is increasing in national as well as international market. A government of Chhattisgarh release the ‘Make in Chhattisgarh Vision 2016’ similar to Make in India Vision of central government. The state government is planning to start manufacture of Ayurvedic medicines on a large scale. In this vision, Ayurvedic drug manufacturers would be invited to set up herbal drug production units in the state, based on Public Private Partnership (PPP) mode. It provides the means of livelihood to a large population, specially the tribals who are involved in collection of medicinal plants and fruits. Sustainable development of medicinal plants sector could positively contribute towards the overall economy of the state as well as its people. The Chhattisgarh State Medicinal Plant Board has identified around 2,021 medicinal and aromatic plants (MAPs) in the state. They are mainly found in Abhujmad region, Bailadilla hills, Kanger Reserve and Kurchel valley in Bastar division and in some parts of Surguja division in north Chhattisgarh. The actively traded medicinal and aromatic plants from the state are Bhui Aonla (Phyllanthus amarus), Baheda Chhilka (Terminalia belerica), Kalmegh (Andrographis paniculata), Safed Musli (Chlorophytum tuberosum), Aama Haldi (Curcuma amada), Bhelwa Fruit (Semecarpus anacardium), Van Tulsi (Ocimum gratissimum), Dhawai Phool (Woofordia fruitcosa) and about 100 others.
In- Vitro Anti-Inflammatory Study of Tridax Procumbens L. Leaf, Stem, Root, and Flower Extracts

Debarshi Kar Mahapatra¹*, Manish Kamble², Ruchi Shivhare¹, Kavita Pandey¹

¹Department of Pharmaceutical Chemistry, Kamla Nehru College of Pharmacy, Nagpur - 441108, Maharashtra

²Department of Pharmacognosy, Kamla Nehru College of Pharmacy, Nagpur - 441108, Maharashtra

ABSTRACT

Tridax procumbens L. is a traditional plant known for its anti-inflammatory activity, however, many literatures have reported the potentiality, but the actual vital portion where the liable phytoconstituents are present is still debated. In order, to determine the same, in vitro anti-inflammatory activity of Tridax procumbens L. plant part (leaf, stem, root, and flower) extracts (aqueous, ethanol, methanol, and chloroform and petroleum ether) were investigated by human red blood cell membrane stabilization (HRBCM) method. All the plant part extracts showed moderate to significantly high activity. The alcoholic leaf extract (ethanol and methanol) demonstrated noteworthy HRBCM stabilization activity at 200 μg/mL (69.68%, and 70.44%) compared to standard drug diclofenac sodium (81.37%). Moreover, the extracts displayed considerable anti-inflammatory potential. The result of the study revealed the traditional importance of this plant in inflammation.
Formulation Development Of Extended Release Matrix Tablets Of Antihypertensive Combination.

Alpana Ram, Barsa B Mahapatra
SLT Institute of Pharm. Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur,(CG)

ABSTRACT

Hypertension is the major problem in this era. The aim of the study was to prepare extended release matrix tablets of Losartan Potassium and Nifedipine combination for effective lowering of blood pressure. Matrix tablets were prepared by wet granulation method and characterized for hardness, thickness, percent drug content, weight variation and friability. In vitro drug release was 52% in 12 hours. Drug release increased with increasing concentration of hydrophilic agent HPMC. Change in pH and agitation intensity showed no significant difference on drug release. Drug release followed zero order models. The tablets were stable at room temperature and at 40°C upto 3 months. Shelf life was more than 2 years. Blood pressure was induced in healthy Sprague Dawley rats by uninephrectomy and simultaneous administration of 1-1.5% w/v sodium chloride. Matrix Tablet was surgically inserted into rat’s stomach and compared with marketed tablet. Matrix tablets normalized the blood pressure after 8 hours which was maintained for 12 hours whereas the marketed tablets reduced blood pressure in 4 hours after which it was again raised. Thus the prepared extended release matrix tablets are a promising drug delivery for once daily administration of Nifedipine and Losartan Potassium for effective treatment and management of hypertension.
Development Of Domperidone Floating Microspheres Byusing Response Surface Methodology

Mr. Nilesh Gorde, Konkan Gyanpeeth Rahul Dharkar

College of Pharmacy and Research Institute, Karjat, Dist-Raigadh., University of Mumbai, Maharashtra, India

ABSTRACT

The aim of the current research was to design floating microspheres of Domperidone and to optimize them by using response surface methodology (RSM). Floating microspheres were prepared by the emulsion solvent diffusion method utilizing enteric acrylic polymers dissolved in a mixture of dichloromethane and ethanol. Full factorial design employed in formulating the floating microspheres with ratio of dichloromethane: ethanol and Eudragit RS100: Eudragit RL100 as independent variables. Buoyancy and t50% (time for 50% drug release) were selected as dependent variables. Formulation variables were found to be significant for buoyancy and t50% (P < 0.05). Optimization of the formulations was achieved by applying the constrained optimization. Experimental values of % buoyancy and t50% release for the optimized formulation were found to be 88.79±2.35% and 10.19±0.89 hours, respectively which showed an excellent agreement with those predicted with mathematical model. The quadratic mathematical model developed could be used to further predict formulations with desirable release and buoyancy.
Community Pharmacy Education and Pharmacist

Sandeep Waghulde, Konkan Gyanpeeth Rahul Dharkar

College of Pharmacy and Research Institute, Karjat, Dist-Raigadh., University of Mumbai, Maharashtra, India

ABSTRACT

The role of the pharmacist is developing rapidly to meet the needs of modern health care systems. Ensuring accurate dispensing of prescribed medicines against prescriptions and providing sound advice on responsible self-medications remain vitally important parts of the service provided by pharmacists. Pharmacists have, however, recognized for some years that equally important roles are to advise other healthcare professionals on safe and rational use of medicines. Demand for community-based services will increase to meet growing patient needs; a community pharmacist is the professional who would be in direct access to the public and whose duties are widely sought after by the public and patients. He dispenses medicines with a prescription and in certain cases without a prescription where applicable (OTC drugs). A community pharmacist can also advise on the administration of the medication, provide information on the storage of the medication and wherever necessary he can counsel the patient. Education regarding the disadvantage of polypharmacy can also be given to the patient. Drug information system should be set up and access to adverse drug reaction system should be made. A community pharmacist should do therapeutic drug monitoring and he should have a sound knowledge of genotype reporting i.e. predictive pharmacology. In the Indian health care system, pharmacist is underutilized because community pharmacy and pharmacy practice are yet to be established strongly and pharmacists working in community pharmacies do not provide patient counseling in the usual situation. We need to work closely with the pharmacist associations and share our common experiences and frame appropriate guidelines for India so that community pharmacist who plays a major role in providing better health care can be recognized.
Determination and Characterization of antimicrobial activity of bark of
*Moringa oleifera* L

Pritam Juvatkar, Konkan Gyanpeeth Rahul Dharkar

College of Pharmacy and Research Institute, Karjat, Dist-Raigadh., University of Mumbai,
Maharashtra, India

ABSTRACT

Antimicrobial activity of different extracts of bark of Moringa oleifera was studied against ten bacterial strains these bacteria are gram +ve and gram -ve. Bark was extracted with a petroleum ether, chloroform, ethyl acetate, and ethanol and aqueous. In the present work the antibacterial activity was done by cup plate method. The antibacterial activity was expressed as zone diameter in millimeters. Different extracts from bark of the plant was compared with standards like benzyl penicillin for gram +ve bacteria and streptomycin for gram –ve bacteria using DMF as control. The readymade media for inoculum and culture was obtained from Himedia labs. Prepared herbal extracts from the bark of the plant were screened against bacteria organisms at the concentration range between 50 µg and 300 µg/0.1ml. The present investigation reveals that the aqueous, chloroform and ethyl acetate extracts and in some cases petroleum ether extract showed significant antimicrobial activity when compared with standard.
Use of Animal Handling in Modern Pharmacology

Pravin Naik, Konkan Gyanpeeth, Rahul Dharkar

College of Pharmacy and Research Institute, Karjat, Dist-Raigadh., University of Mumbai, Maharashtra, India

ABSTRACT

From its earliest beginnings pharmacology has relied on empirical data collected through testing. This review data illustrates the changes during the last three decades that has taken place in the methods employed in pharmacological research and how this impacts on current teaching practice. Surveyed pharmacology students in undergraduate medical science degree programs indicated that they found practical classes effective in helping them understand key concepts in each of the subject areas and also in the development of their laboratory skills. The learning that takes place in laboratory classes does not just involve development of laboratory skills. Indeed, a considerable list of diverse items is learned or developed in the laboratory context. The basic concepts of measuring drug action and potency have not changed over time; however some of the techniques to achieve these outcomes continue to evolve. The teaching of experimental pharmacological techniques should be dependent on the need to develop student understanding as well as keeping up to date in the technological changes that are occurring in society. More recently there has been a significant rise in the use of techniques in molecular biology and protein chemistry.
Formulation and Evaluation of Floating Tablets of Captopril


Department of Pharmaceutics, Vinayaka Mission’s College of Pharmacy, Vinayaka Missions University, Salem, Tamil Nadu

ABSTRACT

Recent scientific and patent literature shows increased interest in academics & industrial research groups regarding novel dosage forms that can be retained in the stomach for prolonged & predictable period of time and the most feasible approach for this is to control the gastric residence time using gastroretentive dosage forms which will provide new & important therapeutic option but the problem can arise if there is a narrow window for drug absorption in the GIT or drug is unstable in the intestinal fluid. So the development of oral controlled dosage form is not just to prolong the drug release but also to ensure the presence of dosage form in the stomach or upper GIT so that drug is released and absorbed for the desired period of time. Captopril was used with various grades of HPMC K4M, HPMC K15M, HPMC K100M, Lactose, Sodium bicarbonate and Magnesium stearate in varying ratios to formulate the floating tablets. The tablets were prepared by Direct compression method. Differential Scanning Calorimetry (DSC) studies of the prepared matrix tablets and the drug and the excipients showed that no polymorphic changes occurred during manufacturing of tablets. Observations of all formulations for physical characterization had shown that, all of them comply with the specifications of official pharmacopoeias and/or standard references. Results of in vitro release profile indicated that formulation (F5) was the most promising formulation as the extent of drug release from this formulation was high as compared to other formulations. Results of in-vitro swelling study indicate that the formulation F5 was having considerable swelling index. From the in vitro buoyancy studies, it was found that almost all the batches containing effervescent agent showed immediate floatation followed by floatation period of more than 8hr. It was concluded that the tablets of batch F5 had considerable swelling behaviors and in vitro drug release. It was observed that tablets of batch F5 followed the Higuchi modal release profiles. From the results obtained, it was concluded that the formulation F5 is the best formulations as the extent of drug release was found to be around 96.22% at the desired time 8 hrs. This batch also showed immediate floatation and floatation duration of more than 8hr.
Ligand Conjugated Nanocarriers for Intracellular Delivery of Anticancer Agent

Balak Das Kurmi and Shivani Rai Paliwal

Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G., 495009

Email: bdkurmi@gmail.com

ABSTRACT

The objective of this study were developing and exploring potential of ligand lactoferrin (Lf)-conjugated dendritic nanocomposite for lung targeting of methotrexate (MTX) for the treatment of lung related cancers. 5.0G poly(propylene imine) (PPI) dendrimer and lactoferrin (Lf) conjugated 5.0G PPI dendrimer were synthesized and characterized by fourier-transform infrared spectroscopy (FT-IR), nuclear magnetic resonance (NMR) and transform electron microscopy (TEM). The entrapment efficiency, in vitro release and hemolytic toxicity were assessed. The pharmacokinetic studies showed that elimination half life of MTX loaded plain PPI dendrimer (10.41 ± 2.12 h, p <0.05) and MTX loaded Lf-conjugated PPI dendrimer (12.23±1.53 h, p <0.01) was significantly higher than the free drug (5.85 ± 1.19 h). Organ distribution assessment of different formulations displayed significant (p <0.05) higher accumulation of drug in lungs by MTX–Lf–PPI (1329 ± 26.7 ng/g of tissue) as compared with MTX–PPI (721 ± 23.4 ng/g of tissue) and free MTX (575 ± 19.7 ng/g of tissue) after 6 h of administration. The in vitro drug release studies, in vivo pharmacokinetic and tissue distribution studies suggested that in the treatment of lung cancer lactoferrin conjugated 5.0G PPI dendrimers can be a promising drug targeting carrier for anticancer bioactive. Present study suggests that lactoferrin can target MTX encapsulated 5.0G PPI dendrimer to the lung. Hence we can say that lactoferrin mediated biodisposition and cellular interaction of 5.0G PPI dendrimer, especially at the target sites would be a focal paradigm for the upcoming research in the field of lung cancer drug delivery.
New Trends in the Treatment of Diabetes Mellitus and Its Complication

Kamleshwar Bande*

Royal college of pharmacy, behind pt. R.s.u. campus, dumar talab (mohaba bazaar), Raipur (C.G)

ABSTRACT

Diabetes mellitus is an endocrinological and/or metabolic disorder with an increasing global prevalence and incidence. High blood glucose levels are symptomatic of diabetes mellitus as a consequence of inadequate pancreatic insulin secretion or poor insulin-directed mobilization of glucose by target cells. Diabetes mellitus is aggravated by and associated with metabolic complications that can subsequently lead to premature death. Diabetes mellitus (DM) is a metabolic disorder resulting from a defect in insulin secretion, insulin action, or both. Insulin deficiencies in turn leads to chronic hyperglycaemia with disturbances of carbohydrate, fat and protein metabolism. It is the most common endocrine disorder and by the year 2010, it is estimated that more than 200 million people worldwide will have DM and 300 million will subsequently have the disease by 2025. Thus, diabetes covers a wide range of heterogeneous diseases. Diabetes mellitus may be categorized into several types but the two major types are type 1 and type 2. Drugs are used primarily to save life and alleviate symptoms. Secondary aims are to prevent long-term diabetic complications and, by eliminating various risk factors, to increase longevity. Insulin replacement therapy is the mainstay for patients with type 1 DM while diet and lifestyle modifications are considered the cornerstone for the treatment and management of type 2 DM. Insulin is also important in type 2 DM when blood glucose levels cannot be controlled by diet, weight loss, exercise and oral medications. Oral hypoglycaemic agents are also useful in the treatment of type 2 DM. Oral hypoglycaemic agents include sulphonylureas, biguanides, alpha glucosidase inhibitors, meglitinide analogues, and thiazolidinediones.
Innovating Botanical Extraction through Microwave Technology: The Case of Ursolic Acid

Kamal Sen, Roshni Tandey, Harneet kaur, Rajendra Mehta, Vivekananda Mandal*

Department of Rural Technology, Guru Ghasidas Central University, Bilaspur (C.G) 495009
Institute of Pharmacy, Guru Ghasidas Central University, Bilaspur (C.G) 495009

Email: kamalagril@gmail.com, pharmafriend@rediffmail.com

ABSTRACT

In this paper the applicability of microwaves on improving the extraction efficiency of ursolic acid from the leaves of Ocimum sanctum have been evaluated with a view that this research can become the basis for its large scale extraction in the near future. Several factors which were thought based to influence the extraction process have been studied in a organized fashion to derive the optimum conditions for maximum yield of ursolic acid. Microwave based extraction overcomes many serious disadvantages associated with conventional Soxhlet extraction, the two most important being longer heating hours and thermal safety of the constituents. In order to develop a robust microwave extraction method several influential extraction parameters were optimized such as microwave power, irradiation time, solvent composition and pre-leaching time. A laboratory scale microwave extractor with adjustable power levels and temperature control fitted with reflux system was used in the experiment. 6 min of microwave exposure time under 40% power level, with 90% methanol and 10 min of pre-leaching time produced the maximum yield of 2.41% w/w of ursolic acid. On the other hand 24 hours of maceration and Soxhlet extraction could produce only 0.78% w/w and 1.33%w/w of ursolic acid respectively. All quantifications were done by HPTLC estimation using standard ursolic acid. No degradation of the target analyte was observed under optimum conditions as shown by stability studies. The proposed method also showed good reproducibility. Results from MAE were also compared with that of accelerated solvent extraction technique. A unique heat transfer model has also been proposed for accounting the accelerated yield through MAE. Higher yield in much lesser time with thermal safety are the key features of the proposed technique and this optimization study can be the basis of large scale industrial extraction. In the recent era it is highly important that technology and environment shoud go hand in hand. In this regard green technologies shall be the key for sustainable growth in the near future.
Hepatoprotective Activity of *Aerva Lanata* Linn. Against Drug Induced Inducedhepatotoxicity in Rats

Pritt Verma¹, Shravan K. Paswan¹, Surya Praksah Singh¹, Sajal shrivastva², Chandana Venkateswara Rao

Pharmacognosy and Ethnopharmacology Division, CSIR- National Botanical Research Institute, (Council of Scientific and Industrial Research) Rana Pratap Marg, Post Box No. 436, Lucknow-226001, Uttar Pradesh, India.

Email: chvrao72@yahoo.com

Amity Institute of Pharmacy, Amity University, Lucknow, India

**ABSTRACT**

The present study was conducted to evaluate the hepatoprotective activity of hydroalcoholic extract of *Aerva lanata* whole plant against drug induced liver damage in rats. The hydroalcoholic extract of *Aerva lanata* (500mg/kg) was administered orally to the animals with hepatotoxicity induced by paracetamol (3gm/kg) Silymarin (100mg/kg) was given as reference standard. All the test drugs were administered orally by suspending in 0.5% Carboxy methyl cellulose solution. The plant extract was effective in protecting the liver against the injury induced by paracetamol in rats. This was evident from a significant reduction in serum enzymes alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP) and bilirubin. The whole plant extract *Aerva lanata* has showed dose dependent activity, among which at the dose level of 200 & 400 mg/kg. The further investigations, whole plant extract *Aerva lanata* identify the active constituents responsible for hepatoprotection. It was concluded from the result that the hydroalcoholic extract of *Aerva lanata* possesses hepatoprotective activity against paracetamol induced hepatotoxicity in rats.
Evaluation of the Antioxidant & Wound Healing Activity of Ethanolic Leaves Extract of *Ficus religiosa* in Rats

Shravan K. Paswan¹, Pritt Verma¹, Abhisek Raj¹, Sajal shrivastva², Chandana Venkateswara Rao

Pharmacognosy and Ethnopharmacology Division, CSIR- National Botanical Research Institute, (Council of Scientific and Industrial Research) Rana Pratap Marg, Post Box No. 436, Lucknow-226001, Uttar Pradesh, India

Email: chvrao72@yahoo.com

Amity Institute of Pharmacy, Amity University, Lucknow, India

ABSTRACT

This study was designed to judge the wound healing potential of 50% leaf extract of *Ficus religiosa* through the excision wound model and evaluates the useful changes, in biochemical and antioxidant parameters. Leaf extract of *Ficus religiosa* was developed as ointment (5% & 10% w/w) with easy ointment base B.P. The ointment was then evaluated for excision wound healing activity. Parameters as well as antioxidant, measurement of wound space &, wound contraction index, a measurement of tensile strength and histopathological examination content were determined. Remarkable wound healing activity was observed with the 10% (w/w) ointment of 50% ethonolic leaf extract of *Ficus religiosa*. Statistical analysis was performed by one-way analysis of variance followed by t-test. Wound treated with 5% and 10% (w/w) 50% ethonolic leaf extract ointment exhibited significant excision wound and antioxidant parameter, the healing activity of the excision wound as evidenced by increased wound contraction, shorter epithelization time, higher tissue breaking strength and increased hydroxyproline content. This plant has important biological activities and responsible for the antioxidant and wound healing properties. The study provided sufficient evidences that *Ficus religiosa* might be indeed potential sources to treat many diseases.
Formulation and Evaluation Of Anti Hypertensive Drugs and Stability Studies at Different Packing Conditions

Palanisamy.P*, Jaykar.B, B.S.Venkateswarlu, R.Margret Chandira, Pasupathi A

Department of Pharmaceutics, Vinayaka Mission’s College of Pharmacy, Vinayaka Missions University, Salem, Tamil Nadu

ABSTRACT

In the present work an attempt made to develop a stable and robust manufacturing process for ACE inhibitor tablets 10 mg, 20 mg and compound 10/25 mg by wet granulation technique, in this method the dry mix was taken in a fluid bed granulator and the drug was mixed in the binder solution and sprayed onto the powder mix, the dried granules were lubricated and compressed into tablets. The Problem encountered during preparation of these tablets was that the % of ACE inhibitor at impurity was higher than the limit specified. Formulation developments were carried out with Ethanol and Hydroxy Propyl Cellulose to solve the problem of formation of ACE inhibitor at and Diketopiperazine impurities in tablets. The tablets are packed in HDPE container with child resistant cap and loaded for stability as per ICH Guidelines. The accelerated stability studies carried out for all the prepared formulations as per the ICH guidelines and kept at 40±2°C and 75±5% RH for the period of 3 months and evaluated for assay, related substances, dissolution, water content, LOD, IPA content, Hardness. It concludes that the HDPE bottle pack with child resistant cap has more prominent and suggestible packing to maintain the hardness of the tablet for longer period and reduce the percentage of the impurities of ACE inhibitor (ACE inhibitor and Diketopiperazine).
Formulation and Evaluation of Immediate Release Tablets Of Oral Contraceptive Hormones

Muruganantham.V*, Jaykar.B, B. S.Venkateswarlu

Department of Pharmaceutics, Vinayaka Mission’s College of Pharmacy,
Vinayaka Missions University, Salem, Tamil Nadu

ABSTRACT

Oral contraceptives are used to prevent pregnancy. Combined oral contraceptives contain two hormones similar to the natural hormones in woman’s body – an estrogen and progestin. Also called combined pill and birth control pills. Oral contraceptives come in variety of formulations. The main division is between combined oral contraceptive pills, containing both estrogen and synthetic progestogens and progestogens only pills. When taken by mouth every day, these pills inhibit female fertility. Oral contraceptives are among the most effective means of contraception. A generic version of Tablets was developed that is safe, efficacious and bioequivalent to the reference product. The Innovator product Femilon (USP) is available. In this research work Emphasis on mainly selection of drug that is Desogestrel & Ethinylestradiol and Various Excipients like Lactose monohydrate, Pregelatinised starch, were used to formulate uncoated tablet of Oral contraceptives. These were prepared in a Rapid mixing granulator (RMG), fluidized bed Processor (FBP). In the preformulation studies work is done for solubility study, and compatibility study. In solubility studies various pH Buffers were taken but, pH 6.8 Phosphate buffer (SLS) was mainly used. In compatibility studies it is done for Initial analysis stage and storage conditions for 2 weeks (50°C). In the formulation study, nine Formulations (F1 – F9) were formulated, based on preformulation studies, Formulation F8 is chosen for development. Release Kinetics, Koresmeyer-Peppas plots In Dissolution profile studies at 30 mins etc were carried out. The Drug percentage release for formulation f8 (99.8% at 30 min) matches when compared with the Marketed Product (101.2% at 30min). One month stability study for optimized batch was carried out; various parameters like Description, Assay, Water content, related substance etc were carried out. Optimized batch results were very much comparable to the innovator product.
Study of Antihypertensive Potential of *Hedychium Spicatum* Leaves Extract in Rats

Amrita Singh

Department of Pharmacology, SLT Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur (C.G.) - 495009, India

**ABSTRACT**

*Hedychium spicatum*, known as Shati in Ayurvedic classics, is documented for the treatment of cough, fever, asthma and various kidney dysfunctions. The present study includes the evaluation of ethanolic extracts of the dried leaves of *H. spicatum* against uninephrectomized induced hypertensive Sprague Dawley albino male rats. The extracts were administered orally, daily as suspension, in 1% carboxymethyl cellulose for 21 days in rats. An initial dose-dependent anti-hypertensive action of ethanolic extracts (100, 200 and 400 mg/kg, p.o.) was performed against uninephrectomized rats. The 200 mg/kg dose of extract was selected for further studies in rats, showed significant decrease in systolic BP, diastolic BP and mean arterial pressure as compared to the control group. Extracts did not show any toxic effect in mice even at the 2000 mg/kg dose indicating the safety of the extract. The result confirms the indigenous use of this plant helped in hypertension and other cardiovascular disorders.
Collaboration between institute and industry: Challenges and opportunities

Shilpi Prasad

Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur, C.G., India, 495009

Email: shilpipharma24@gmail.com

ABSTRACT

For survival in the fast paced global environment, in the present scenario, Indian Industries demands to collaborate strongly with Institutions, Universities and Professional Colleges. In India there exists a long gap between the two. Institutions are becoming guardians of knowledge networks with global control. There is a great need for the industries who are the users of knowledge for markets to interact closely with institutions. According to recent report of Indian brand equity foundation, India is likely to be among the top three pharmaceutical markets by incremental growth and sixth largest market globally in absolute size by 2020. On the other hand pharmacists are still struggling for their existence and employment. This irony shows that there is a gap and it should be fulfilled. UGC, AICTE, PCI and other government organizations who are the decision making bodies should take appropriate measures to fill this gap. Some measures have been taken like Skill India and Make in India. In this regard skilled researchers and pharmacist should be appointed to fulfill the regulatory compliance. To accomplish the new challenges there is a necessity to rejuvenate the pharmacy education with modern teaching technologies along with collaboration with research institutes and industries in India and abroad so that the pharmacists coming out from these institutes become so much skilled and trained so that industries should demand their service not only in India but also in foreign nationals.
Exploration of the Structural Requirements of Azetidin-2-Ones Derivatives for Anticancer Activity by Using Docking Studies, Pharmacophore Modeling and 3D-QSAR Approaches For Lead Identification

Vijay Kumar Patel*, Harish Rajak

S.L.T. Institute of Pharmaceutical Science, Guru Ghasidas Central University, Bilaspur (C.G.) 495009, India

Email: vijay0305@gmail.com,

ABSTRACT

Azetidin-2-ones have been recognized as effective tubulin polymerization inhibitors that bind to the colchicine site on β-tubulin. Molecular docking (structure based method) were performed on a series of azetidin-2-ones using colchicines binding site of β tubulin. The docking studies indicate important interactions of trimethoxy benzene with Cys241 and Val318 for anticancer activity. Pharmacophore and atom based 3D QSAR modeling (ligand based method) were performed on 71 compounds of azetidin-2-ones derivatives as tubulin-binding agents for antitumor activity. Five-point common pharmacophore hypothesis were selected for alignment of all compounds. The 3D-QSAR models developed using training set of 51 compounds and test set of 20 compounds. The generated common pharmacophore hypothesis (CPHs) and 3D-QSAR models were confirmed further externally by estimating the activity of database of compounds and comparing it with actual activity. Structure based pharmacophore mapping (hybrid structure and ligand based method) explain how the energy parameter from the dock scoring function are plotted onto pharmacophore sites from the docked fragments so as to rank their implication for binding. We have established structure activity correlation by using Docking Studies Pharmacophore Modeling and 3D-QSAR by using schodinger and discovery studio software. The results of these studies would be beneficial to refine the pharmacophore for design of novel potential compounds for antitumor activity.
Antimutagenic Potential of *Aegle Marmelos* Leaf Extract on Chromosomal Aberrations

Nirmala Gupta¹*, Anita narwariya²

¹Institute for Excellence in Higher Education, Bhopal (MP), India

²Jawaharlal Nehru Cancer Hospital & Research Centre, Idgah hills, Bhopal (MP), India

ABSTRACT

*Aegle marmelos* (Bael) has been used since ancient times, as medicinal plant. In the present study of investigation, the antimutagenic effect of *Aegle marmelos* (AM) leaf extract has been evaluated using “in vivo chromosomal aberration assay” in Swiss albino mice. Cyclophosphamide (CP) a well known mutagen was given at a single dose of 50 mg/kg b.w. intraperitoneally. Pretreatment with 450, 675 and 900 mg/kg b.w. of freshly prepared hydromethanolic AM leaf extract was given intraperitoneally prior to CP administration. Animals from all the groups were sacrificed at sampling time of 24 hour and their bone marrow tissue was analysed for chromosomal damage. The animals of the control group (CP alone) show a significant increase in Chromosomal aberration (CA) at 24 hrs. Sampling time. AM leaf extract alone did not significantly induced aberration at the sampling time, confirming its non-mutagenicity. However, in the AM leaf pretreated and CP post-treated groups, a dose dependent decrease in cytogenetic damage was recorded. Thus, results of the present investigation revealed that AM leaf extract has anticlastogenic potential against CP induced chromosomal mutations in Swiss albino mice.
Phytochemicals: Repositories of Therapeutic Properties of Medicinal Plants

Lakshya DharamDasani, Prerna Bodhankar

Institute for Excellence in Higher Education, Bhopal (MP), India

ABSTRACT

Phytochemicals are “plant chemicals” that are found in vegetables, fruits, beans, whole grains, nuts and seeds. Medicinal plants which are responsible for healing and curing human ailments are due to the presence of these plant derived compounds. Phytochemicals are primary and secondary compounds. Primary constituents are Chlorophyll, proteins and common sugars and Terpenes, Alkaloids, Phenolic compounds; Carotenoids, Flavonoids and Glycosides are secondary constituents. Flavonoids are the most diverse group of phytochemicals and numerous reports support their use as antioxidants or free radical scavengers inhibit inflammation and tumor growth, boosts immune system, etc. Alkaloids function in the defense of plants against herbivores and are exploited as pharmaceuticals, stimulants, narcotics and poison due to their potent biological activities. Phenolic compounds naturally occur as color pigments responsible for the color of fruits of plants, also applied in the control of pathogenic infections and many more applications in therapeutics. Each and every phytoconstituent helps in one or the other way to cure various diseases such as cancer, heart diseases and many more. They also possess antibacterial, antifungal and antioxidant activities. So, these compounds become of great interest owing to their versatile applications in pharmaceuticals and nutraceuticals.
Biofilm: Microbial Sessile Community on Surfaces

Kriti Rai, Pallavi Nair

Institute for Excellence in Higher Education, Bhopal (MP), India

ABSTRACT

A biofilm is a group or community of microbial cells attached to a surface and produces extracellular polymeric substance (EPS), that facilitates attachment and matrix formation which results in an alteration in the phenotype of the organism. It can comprise a single or multiple microbial species and can form on a range of biotic and abiotic surfaces such as natural aquatic and soil environments, living tissues such as tooth enamel, heart valves, or the lung, and middle ear, medical devices or potable water pumping systems. Biofilm forming microbes are major threat towards public health perspective because the adhesion property provides advantages such as resistance against antimicrobial agents and host’s immune system. They too cause numerous chronic infections such as chronic osteomyelitis, chronic cystitis, chronic pneumonia, etc. Biofilm forming microbes are much more resistance to antimicrobial agents than are Planktonic (suspended) organisms and it’s because of colonization of medical device with a biofilm, which may be associated with infections. This characteristic of biofilm associated microorganisms is presenting challenge for pharmaceutical industries to develop effective and novel therapeutic agents for preventing and controlling the formation of biofilm rather than its treatment.
In Vivo Anti Tumor Activity of Soy Isoflavones against B16F10 Melanoma Induced C57BL Mice

Pratima Sharma
Institute for Excellence in Higher Education, Bhopal (MP), India

ABSTRACT

Soybeans are one of a very few plants that provide a complete protein source and yet are free of cholesterol and low in saturated fat. It contains certain specific photochemicals such as Isoflavones, a class of flavonoids that have been implicated for regulatory/preventive or curative effect against many human and animal diseases. The present study was aimed to explore the tumor inhibiting activity of Soy Isoflavones against B16F10 melanoma induced in C57BL mice. Isoflavones were quantified by HPLC from Soybeans by using mixture of genestein and diadzin as standards. B16F10 melanoma cell lines were injected in C57BL mice and 10 mice were taken in each group: Control and experimental i.e. Tumor growth inhibiting and Tumor prevention effect. The silent period for the control group was found to be 7.4 days, whereas for tumor inhibiting and tumor preventive it was found to be 11.62 and 15.5 days, respectively. Likewise, the Isoflavones proved to be more effective than soy flour extract. Thus, the Isoflavones, the flavonoid proved to have antitumor activity against B16F10 melanoma cell lines induced in C57BL mice.
In Situ Forming Polymeric Formulations as Drug Delivery Systems: Recent Advances and Future Perspectives

Priya D. Khode*, Debarshi Kar Mahapatra
Kamla Nehru College of Pharmacy, Nagpur 440108, Maharashtra
Email: priya.khode93@gmail.com

ABSTRACT

In situ forming polymeric formulations serve as excellent drug delivery systems. These polymers undergo sol-gel transition, once administered gelation they undergo at body temperature undergo gelation in situ, to from a gel. In situ gel structure formation occurs due to one or more combination of different stimuli like pH change, temperature modulation and ionic exchange. Generally gel formation occur based on following important factors like temperature modulation, pH change, presence of ions and ultraviolet irradiation, electrical sensitivity, enzyme sensitive, from which the drug gel released in a sustained and controlled manner. Hydrogels are presently under investigation as a delivery system for bioactive molecules, because of their similar physical properties as that of living tissue, which is due to their high water content, soft and rubbery consistency, and low interfacial tension with water or biological fluids. Different methods of preparation of hydrogels, novel methods of cross-linking used in the preparation of hydrogels, the mechanism of water transport through the ionic hydrogels. It is concluded that the advantages of using biodegradable polymers in clinical applications are apparent. The role of various natural and synthetic polymers is used for formulation development of in site forming drug delivery. These in situ gel formulation include gellan gum, alginic acid, xyloglucan, pectin, chitosan, poly (DL-lactic acid), poly-caprolactone, poly (DL-lactide-co-glycolide), etc are highlighted. Mainly in situ gel administered by oral, ocular, rectal, vaginal, injectable, and intraperitoneal routes. The in situ gel forming polymeric formulations offer several advantages like sustained and prolonged action in comparison to conventional drug delivery system. Therefore, it may be concluded that biodegradable and water soluble polymers for the in situ gel formulations can be more acceptable and excellent drug delivery systems in future.
Horrible Menorrhagia – Simple Herbal Concoction

E.Susithra*1, K. Pasupathi2, T.K. Gopal1, Rajasekhar Chekkara3

1Faculty of Pharmacy, Sri Ramachandra University, Porur, Chennai – 600116, Tamilnadu, India
2Aztec Biopharma, Thakkolam, Chennai, Tamilnadu
3GVK Bioinformatics, Hyderabad, Telangana

ABSTRACT

Efficacy of polyherbs greatly misplaced due to under research or due to misplaced apprehension. Menorrhagia (excess menstrual process) is widely prevalent in menopause stage, largely resulting during operation of uterus, with various psychological disorders affecting the biological clock of our systems. Green waste used as herbs concoction stops the bleed within three days. This includes herbs like Sara indica, Acacia arabica, Terminalia arjuna, Punica granata, Eriodendrum anfracto, Aegle marmelosa fruit sheath, Quercis infectoria, Mangifera indica, Azima tetracantha along with digestive property medicine like Triphala. These herbs has pungent odor, sour taste and has inhibitory effect on Follicle Stimulating Hormone and Luteinizing Hormone. They trigger the endocrine system through lymphatic nodes, brings the menses to normality by correcting the normal trigger of immune system. Before onset, WBC, neutrophil is too erratic, but the final result shows normality. Endometrium thickness become normally bulged, uterus reduces in size, reduces the cyst formation, finally reducing the menstrual pain. The mode of intake is also simple concoction of different grades for different disorders (not diseases), affordable, cost effective even to the base of pyramid people and has good reachability and marketability with 90% positive results. It also demands a total revisit with innovative approach on herbal studies. The market cap of this product is astonishingly competitive. Green points can be earned, only regeneration sheath is used and it also facilitates green revolutions.
Spectrophotometric and HPTLC Studies On Selected Spices Extracts

Priyanka Soni, Vishal Soni, Payal Sharma

1Department of Herbal Drug Research, B.R. Nahata College of Pharmacy, Research Centre, Mhow Neemuch Road, Mandsaur 458001, India

ABSTRACT

The present work was carried out with a view to analyze the major phytochemical compounds of Indian spices, Dalchini (Cinnamomum zeylanicum) bark, and Coriander (Coriander sativum) fruit. Hydro-alcoholic (30% ethanol in water, v/v) extracts were prepared and analyzed for percent yield, loss on drying (LOD), pH and phytoconstituents. Phytochemical compounds such as total alkaloids, phenols, flavonoids and tannins were quantified by spectrometric methods. Hydro-alcoholic extracts from selected spices revealed the pH to be 5.36-6.8, loss on drying (5.84–16.86%) and extract yield (6.46-22.2%). Phytochemical screening revealed the presence of various phytoconstituents terpenoids, glycosides, carbohydrates, phenolic, flavonoids, saponins etc. Among the investigated samples, higher levels of alkaloids (1.03%), total phenolics (7.69%) and flavonoids (8.83%) and tannins (2.6 %) were found in Coriander sativum as compare to Cinnamon zeylanicum. The hydro-alcoholic extracts were subjected to HPTLC analysis and the results suggested the presence of nine different major phytochemical compounds in Coriander sativum and whereas Cinnamon zeylanicum extract displayed only seven major peak. The outcome of this study might prove beneficial in herbal industries for drug formulations.
Qualitative and Quantitative Determination of Phytoconstituents in Some Antifertility Herbs

Vishal Soni*1, Arvind Kumar Jha2, Jaya Dwevedi3, Priyanka Soni1

1Department of Herbal Drug Research, B.R. Nahata College of Pharmacy, Research Centre, Mhow Neemuch Road, Mandsaur 458 001, India

2Faculty of Pharmaceutical Sciences, Shri Sankarachary group of Institution, Shri Sankarachary Technical Campus, Junwani Bhilai Chhattisghur, 490020

3Department of Chemistry, Banasthali Vidyapith Banasthali University, Rajasthan, 304022

Email: vishalpanacea@rediffmail.com

ABSTRACT

Antifertility herbs are used to prevent conception or fertilization. This study aimed to evaluate some antifertility herbs Bambusa arundinacea (leaf), Bauhinia racemosa Lam. and Ficus racemosa (bark) qualitatively and quantitatively in term of their phytoconstituents. The total phenolic content was determined by folin-ciocatechu reagent using Gallic acid as standard, total flavanoid content by aluminium chloride assay using Quercetin as a standard and total tannin content was determined by folin-denis reagent. Saponin content was determined in crude powder of drugs. The extracts were screened for presence of various phytoconstituents using preliminary chemical tests. Among the four extracts, ethanolic extract of B. arundinacea leaves shows maximum amount of phenolic content (2.24±0.34) mg/g and flavonoid content (4.65 ± 0.74) mg/g as compare to F. racemosa & B. racemosa bark extract whereas total tannins content was found maximum in F. racemosa bark (8.96± 1.54) mg/g. Preliminary phytochemical screening revealed the presence of alkaloid, glycoside, flavonoids, carbohydrates, tannins, phenolic, saponin etc. This study gives an insight to the phytoconstituents present in the plant it can be useful for quantification of the compound in herbal formulation.
Pharmacognostical Evaluation of Root and Shoot Parts of *Hollarehena antidysenterica* Roxb. (Kurchi)

**Harish shah**1, Vivek Tiwari1, Rajkumar Tiwari, T.N. Shivananda2

1. Deptt. Of Pharmacy, IIMT College of Medical Sciences, Ganga Nagar, Meerut (U.P)
2. Division of Medicinal & Aromatic Plant, Indian institute of Horticulture Research (IIHR) Hassergatta. Bangaluru, Karnataka

**ABSTRACT**

*Hollarhena antidysenterica* (Apocyanace) is a deciduous tree found in India, Burma, Pakistan, Nepal and Africa. It is distributed throughout India especially in the wet forest and tropical Himalayas up to an altitude of 1,200m. The stem barks which is commonly known as kurchi in the Indian subcontinent and as conessi bark in Europe. It is used in traditional Ayurvedic medicine to treat amoebic dysentery, piles, haemorrhage, leprosy, worm, thirst and diarrhea. In Present study three parts of kurchi (Leaves, stem, root) was subjected to Pharmacognostical study which include the powder microscopy of each parts and Physiological analysis (Proximate analysis) like Extractive Value - Alcohol extractive value - Leaves (16.8%), Bark (8.4%), Root (10.4%), Water soluble extractive value - leaves (8.4%), Bark (12%), root (6.4%). Ash value like- Total ash Leaves (13.7%), Bark (11.8%), root (8.3%), Acid Insoluble Ash Leaves (4.9%), Bark (1.6%), root (1.9%). The Moisture content leaves (2.1%), Bark (2.1%) Root (2.2%). Study of microscopy revealed variation between samples of different parts of plants. Proximate analysis of *Hollarehena antidysenterica* Sample showed wide variation in parts wise but were in compliance to standard monographs.
Nanoparticle: A Novel Drug Delivery System

Omika Yadu*

Email: omiiyadu@gmail.com

Columbia Institute of Pharmacy Tekari, Raipur, (c.g)

ABSTRACT

The use of nanotechnology in medicine and more specifically drug delivery is set to spread rapidly. Currently many substances are under investigation for drug delivery and more specifically for cancer therapy. Interestingly pharmaceutical sciences are using nanoparticles to reduce toxicity and side effects of drugs and up to recently did not realize that carrier systems themselves may impose risks to the patient. The kind of hazards that are introduced by using nanoparticles for drug delivery are beyond that posed by conventional hazards imposed by chemicals in classical delivery matrices. For nanoparticles the knowledge on particle toxicity as obtained in inhalation toxicity shows the way how to investigate the potential hazards of nanoparticles. The toxicology of particulate matter differs from toxicology of substances as the composing chemical(s) may or may not be soluble in biological matrices, thus influencing greatly the potential exposure of various internal organs. This may vary from a rather high local exposure in the lungs and a low or neglectable exposure for other organ systems after inhalation. However, absorbed species may also influence the potential toxicity of the inhaled particles. For nanoparticles the situation is different as their size opens the potential for crossing the various biological barriers within the body. From a positive viewpoint, especially the potential to cross the blood brain barrier may open new ways for drug delivery into the brain. In addition, the nanosize also allows for access into the cell and various cellular compartments including the nucleus. A multitude of substances are currently under investigation for the preparation of nanoparticles for drug delivery, varying from biological substances like albumin, gelatin and phospholipids for liposomes, and more substances of a chemical nature like various polymers and solid metal containing nanoparticles. It is obvious that the potential interaction with tissues and cells, and the potential toxicity, greatly depends on the actual composition of the nanoparticle formulation. This paper provides an overview on some of the currently used systems for drug delivery.
Formulation Of Herbal Flavonoids (Quercetin And Kaempfrol) From Vitis Vinifera Linn And Their Anti-Microbial Activities

T. K. Gopal, D. Chamundeeswari

Department of Pharmacognosy, Faculty of Pharmacy, Sri Ramachandra University, Chennai - 600 116, Tamil Nadu, India

Email: tkgopal23@gmail.com

ABSTRACT

The present research has been undertaken with the aim to formulate and evaluate the herbal gel containing physiochemical parameters of formulations (pH, viscosity, spreadability etc.) were determined. Plants are the natural resource of compounds that have been used to maintain human health and improve the quality of life for hundreds of years. Traditional medicine using plant extracts, Vitis vinifera Linn herbal mixtures and Formulations showed various ranges of antibacterial activity at concentrations of 250 µg, 500 µg and 1000 µg. Antibacterial activity of formulation revealed that the zone of inhibition (percentage of inhibition) against both gram positive and negative bacteria ranges between 10 mm (11.11%) to 24 mm (26.66%). Similarly, antifungal (Candida albicans) activities of formulation showed maximum zone of inhibition Formulation has showed zone of clearance and percentage of inhibition at higher concentration (1000 µg) against human pathogenic bacteria. Maximum zone of inhibition exhibited formulation of different organism Based on the zone of inhibition; concentrations of formulations were selected for minimum inhibitory concentration against ten bacterial pathogens and one fungal pathogen (Candida albicans). The in vitro results were classified as follows if the extracts displayed a MIC of less than 100 mg/mL, the antibacterial activity was considered good from 100 to 500 mg/mL, the antibacterial activity was considered moderate from 500 to 1000 mg/ mL, the antibacterial activity was considered weak over 1000 mg/mL the extracts were considered inactive The concentrations used for MIC were 500, 250, 125, 62.5, 31.25, 15.62 and 7.81µg/mL. Formulations showed minimum inhibitory concentrations ranging between 15.62 µg/mL and 250 µg/mL while, standard kanamycin showed MIC at 7.8 µg/mL the present results has shown very good antimicrobial activity against the human pathogenic organisms.
Paclitaxel-Induced Lipid Peroxidation Using Reduced Glutathione as Model Marker: Protective Role of Water Extract Of *Spirulina Platensis*

Supratim Ray* and Sarbani Dey Ray

Department of Pharmaceutical Sciences, Assam University, Silchar, 788011, Assam

**ABSTRACT**

The aim of the study was to investigate free radical scavenging activity of water extract of *Spirulina platensis* on paclitaxel-induced lipid peroxidation using reduced glutathione as model marker. The *in vitro* study was performed using goat liver as source of lipid. The liver tissue homogenates were divided into four equal groups. One portion of the homogenate was kept as control while a second portion was treated with the paclitaxel at a concentration of 0.143μM/g tissue homogenate. The third portion was treated with both paclitaxel at a concentration 0.143μM/g tissue homogenate and water extract of *Spirulina platensis* at a concentration of 0.1666 mg / g homogenate and the fourth portion was treated only with water extract of *Spirulina platensis* at a concentration of 0.1666 mg / g tissue homogenates. After paclitaxel and /or water extract of *Spirulina platensis* treatment, the liver tissue homogenate samples were shaken for five hours and the reduced glutathione content of various portions were determined. Interpretation of the result is supported by student “t” test. Analysis of variance (ANOVA) and multiple comparison analysis were performed using least significant different procedure. The study reveals that paclitaxel showed a decrease in GSH (-12.24%) content in samples with respect to control of 5 of incubation. When tissue homogenates were treated both with paclitaxel and water extract of *Spirulina platensis* then the GSH (4.21%) levels increased in comparison to paclitaxel-treated as well as control group. Tissue homogenates treated only with water extract of *Spirulina platensis* also increase the GSH (6.22%) contents in comparison to the control samples. It is seen that there is significant differences among various groups (F1) such as paclitaxel-treated, paclitaxel and water extract of *Spirulina platensis* -treated and only water extract of *Spirulina platensis* -treated. But within a particular group, differences (F2) are insignificant which shows that there is no statistical difference in animals in a particular group. The results also indicate that the level of GSH in all three groups i.e. paclitaxel –treated, paclitaxel and water extract of *Spirulina platensis*-treated and only water extract of *Spirulina platensis* -treated groups are statistically significantly different from each other. The data presented in this work demonstrate the lipid peroxidation induction potential of paclitaxel, which may be related to its toxic potential. The results also suggest the antiperoxidative effects of water extract of the algae and demonstrate its potential to reduce paclitaxel induced toxic effects.
ABSTRACT

The present study deals with exploration of lipid peroxidation induction capacity of paclitaxel, an anticancer drug, and in vitro evaluation of water extract of Spirulina platensis as a suppressor of paclitaxel induced lipid peroxidation. Goat liver homogenate has been used as the lipid source. This evaluation was done by measuring the nitric oxide content of the tissue as markers of lipid peroxidation. The liver tissue homogenates were divided into four equal groups. One portion of the homogenate was kept as control while a second portion was treated with the paclitaxel at a concentration of 0.143μM/g tissue homogenate. The third portion was treated with both paclitaxel at a concentration 0.143μM/g tissue homogenate and water extract of Spirulina platensis at a concentration of 0.1666 mg / g homogenate and the fourth portion was treated only with water extract of Spirulina platensis at a concentration of 0.1666 mg / g tissue homogenates. After paclitaxel and/or water extract of Spirulina platensis treatment, the liver tissue homogenate samples were shaken for five hours and the reduced glutathione content of various portions were determined. Interpretation of the result is supported by student “t” test. Analysis of variance (ANOVA) and multiple comparison analysis were performed using least significant different procedure. The study reveals that paclitaxel showed a decrease in nitric oxide (-4.22%) content in samples with respect to control of 5 of incubation. When tissue homogenates were treated both with paclitaxel and water extract of Spirulina platensis then the nitric oxide (9.3%) levels increased in comparison to paclitaxel-treated as well as control group. Tissue homogenates treated only with water extract of Spirulina platensis also increase the nitric oxide (6.28%) contents in comparison to the control samples. It is seen that there is significant differences among various groups (F1) such as paclitaxel-treated, paclitaxel and water extract of Spirulina platensis -treated and only water extract of Spirulina platensis -treated. But within a particular group, differences (F2) are insignificant which shows that there is no statistical difference in animals in a particular group. The results also indicate that the level of nitric oxide in all three groups i.e. paclitaxel –treated, paclitaxel and water extract of Spirulina platensis-treated and only water extract of Spirulina platensis -treated groups are statistically significantly different from each other. The present results showed the lipid peroxidation induction potential of paclitaxel, which may be related to its toxic potential. The results also suggest the antiperoxidative effects of water extract of the algae and demonstrate its potential to reduce paclitaxel induced toxic effects. However the present study should be repeated in an in vivo system before any final conclusion could be drawn.
Formulation and Characterization of Quercetin-Loaded Mesoporous Silica Nanoparticles for Skin Cancer

Khusboo Agrawal*, Swarnlata Saraf

University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur

Email: khusboo_agrawal@rediffmail.com

ABSTRACT

Quercetin, a flavonol provides a cellular protection against UV induced oxidative damages due to its excellent free radical scavenging activity and exerts a direct pro-apoptopic effect on tumor cells. However, its topical use is limited due to its poor water solubility, low stability, and short half life. The present study was aimed to evaluate the potential of mesoporous silica nanoparticles as topical carrier system for delivery of quercetin. Complexes of quercetin with mesoporous silica was prepared with different weight ratios and characterized by thermo gravimetric analysis, X-ray diffraction, high resolution TEM, FT-IR spectroscopy, zeta potential measurements and differential scanning calorimetry. The protective effect of this vehicle on UV-induced degradation of the quercetin was investigated revealing a certain positive influence of the inclusion on the photostability over time. Epidermal accumulation and transdermal permeation of this molecule were ex vivo evaluated using Franz diffusion cells. The immobilization of Quercetin in mesoporous silica nanoparticles (MSNs) increased the stability without undermining the antioxidant efficacy.
Development and Characterization of Rutin Transferosomal Gel: An Approach for Penetration Enhancement

Prakriti Diwan*

University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur

ABSTRACT

The aim of the present study was to investigate the effect of transferosomes containing Span 80 and Tween 80 as surfactants on the skin permeation and deposition of rutin. Particle size and entrapment efficiency percent (EE %) were measured by the dynamic light scattering and dialysis method, respectively. The in vitro permeation capacity of the formulations was compared with conventional gel formulations using a modified Franz diffusion cell. The mean particle size of the transferosomes and liposomes was 135 ± 10 and 134 ± 6 nm, respectively. Corresponding values for the EE % were obtained (69.2 and 63.4 %). The maximum flux values belonged to transferosomal gels (135.85 ± 13.61 and 130.65 ± 21.02 μg/cm²/h) which were about six-fold higher than conventional gel. A significant increase was observed in mean deposition percent of transferosomal and liposomal gels after 24 h compared with conventional gel (P < 0.05). The results confirmed that the transferosomes are promising carriers for the skin permeation and deposition of rutin.
Development of Self-Nanoemulsifying Drug Delivery System (Snedds) For Candesartan Cilexetil

Suresh keshwani*¹, S.N Sakarkar¹ and Rajendra Jangde²

¹Shri Rawatpura sarkar college of Pharmacy Durg (C.G)
²University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur (C.G)

ABSTRACT

Candesartan Cilexetil (CC) is an inactive racemic prodrug of Candesartan, which is a highly potent and selective angiotension II type I (AT₁) receptor antagonist. CC has poor aqueous solubility and exhibits incomplete intestinal absorption which results in low oral bioavailability. In current study CC self nano-emulsifying drug delivery system was prepared in an attempt to circumvent such obstacles. The solubility of CC was determined in various oils, surfactants and co-surfactants; preliminary screening was carried out to select proper ingredient combinations. All surfactant screened were recognized for their bioactive aspects. Ternary phase diagram was constructed to identify areas of nano-emulsion formation. The optimized liquid nano-emulsion preconcentrate was adsorbed in adsorbent and converted into free flowing powder. The in-vitro release study was performed using USP type II dissolution apparatus. The optimized solid SNEDDS exhibited superior in–vitro dissolution profile as compared to drug suspension and marketed tablet under similar conditions. The DSC of solid nano-emulsion preconcentrate stated the presence of CC in molecular dissolved state; this was further verified by XRD study. The outer morphology of solid SNEDDS was visualized by SEM. The stability of the optimized formulation was retained after storage at 40°C for three months. The results implicated that incorporation of lipophilic drug into an optimized nano-sized self emulsifying system may be promising in improving absorption.
Role of Natural Antioxidants in Oxidative Stress Induced Diabetes Mellitus

Akanksha Sharma*, Shiv Shankar Shukla

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Diabetes mellitus (DM) is a chronic abstractive metabolic disorder disturbing around 1.5% of the entire population that persisting to present a global health trouble. It is characterized by abnormally elevated levels of blood glucose level due to insufficiency in insulin secretion and insulin action or both, with chronic hyperglycemia as well as disturbances in carbohydrate, fat and protein metabolism. High sugar level leads to rise in oxidative stress which is one of the important causative factors for diabetes. Several studies have purposed that oxidative stress play a major role in reduced secretion of pancreatic β-cells, it also improve systemic inflammation, endothelial damage and impaired glucose consumption in peripheral tissues. The absolute treatment of DM with insulin as well as oral hypoglycemic agents with no side effect has been difficult. The use of antioxidants can be an apparent substitute in patients with diabetes mellitus. Antioxidants obtained from natural source help in neutralization of reactive oxygen species and significantly reduce the probability of progression of diabetic complications. Herbal products or plant products rich of antioxidants, phyto-constituents are able to terminate free radical reactions and prevent our body from oxidative damage, and show reduction in blood glucose levels. A variety of nutritionally important vitamins, supplements and some constituents of natural food sources, naturally reduce the injury caused by oxidative stress in diabetes mellitus. The review describes the oxidative stress, antioxidants and their role in diabetes mellitus.
Pharmacological Evaluation of Topical Gel Containing Plant Proteinases on Wound Healing Using Excision and Incision Wound Model

Gunde MC1,2*, Amnerkar ND3

1Kamla Nehru College of Pharmacy, Butibori, Nagpur, Maharashtra, India
2Suresh GyanVihar University, Mahal, Jagatpura, Jaipur, Rajasthan, India
3Adv.V.R.Manohar Institute of Diploma in Pharmacy, Wanadongari, Nagpur, Maharashtra, India

Email: - mgunde@gmail.com.

ABSTRACT

The aim of present study was to evaluate wound healing activity of topical gel containing plant proteinases using excision and incision wound model. In excision wound model, Circular wounds of about 2.5cm diameter were made on depilated dorsal thoracic region of anaesthetized rat under aseptic condition. All the topical gels were applied once daily starting from the day of wounding. The percentage of wound contraction was calculated from the measured wound area in 3 day interval and epithelization time was also noted. Histopathological study performed to check healing markers. In incision wound model, Paravertebral long incision of about 6 cm length were made on depilated back of the rats. The parted skin was kept together and stitched at about 0.5 cm intervals continuously and tightly using non absorbable surgical sutures. When the wounds were cured thoroughly, the sutures were removed on day 9 and the tensile strength of the healed wounds were measured on day 10. Data obtained were analyzed using one way ANOVA and post hoc test done using graph pad prism version 5. The results of present study indicated that chitosan gel containing mixture of plant proteinases shows good wound healing activity as compare to other groups by increasing percentage of wound contraction, reducing epithelization time and improving breaking strength. Histopathological studies also support the results. The more wound healing activity may be due to synergistic effects of plant proteinases and chitosan with each other.
Development and Formulation with Identification of Parental Drug Citicoline Sodium

Dept. of Pharmacy, IIMT College of Medical Sciences, Meerut
Email: atulsingh2207876@gmail.com

ABSTRACT

Citicoline sodium have best property of neurological recovery and it is kind of neuroprotective agent also it acts as an antioxidant. The present study was undertaken with an intention to develop a stable and effective parenteral formulation containing the drug citicoline sodium. Solubility analysis of the drug citicoline sodium performed soluble in water. So various identification techniques using like UV analysis and estimated by HPLC. The drug was made into injection formulation administering as a route of Intravenous. Various batches of citicoline sodium injection formulation were prepared in order to assess the influence of heat, light, atmospheric oxygen and antioxidant on the stability of the drug, the formulation were also subjected to accelerated stability test out of all trials. Formulation containing all the ingredients like sodium hydroxide, Hydrochloric acid and water for injection was found to be more stable and passed test F2 satisfactorily.
Attention Deficit Disorder: Herbal Approach

Pradhan Pankaj*

Himachal Institute of Pharmaceutical Education & Research, Nadaun, Himachal Pradesh

Email: pnkj.pradhan@gmail.com

ABSTRACT

Attention Deficit Disorder is a biologically based condition causing a persistent pattern of difficulties resulting inattention, hyperactivity and impulsivity type behaviors. It is a common childhood disorder. It is estimated to affect 3–7% of all children in the whole word. Exact causes of this disorder may not be configured but some common causes responsible for this are Organic Brain Damage, Environmental factors, Genetics problems and Family factors. Diagnosis of Attention Deficit Disorder involves screening for bipolar disorder, depression, eating disorder, learning disability, panic disorder (including agoraphobia), sleep disorder, substance abuse, or tourette's syndrome. Four types of therapies allopathic, herbal, homeopathic and dietary therapy are used in attention deficit disorder. Allopathic remedies are Dextroamphetamine, Pemoline, methylphenidate, desipramine, amitriptyline, buproprion, fluoxetine and carbamazepine. There are several side effects of Allopathic remedies are nervous tics, irregular heartbeat, loss of appetite, and insomnia. Now days all focus on herbal and plant based remedies in the treatment of attention deficit disorder. Herbal remedies are Brahmi, California Poppy, Catnip, Ginkgo, Grape Seed Extract, Hops, Kava Kava, Lemon Balm, Skullcap, St. John's Wort, Oats, Jatamansi, Gudduchi and Valerian. Homeopathic remedies are Aurum metallicum, Belladonna, Calsaria, Capsicum, Cinna, Hyoscyamus, Lachesis, Lyssinum, Mancinella, Nux moschata, Platina, Scorpion, Tuberculinum, Cannabis indica, Nux moschata, Opium, Tarentula hispania. In dietary therapy focuses on a nutritional plan that is high in protein and complex carbohydrates and free of white sugar and salicylate-containing foods such as strawberries, tomatoes, and grapes. Some ayurvedic therapies like meditation, pranayama, panchakarma, abhyanga are play a vital role in treatment of this disorder.
Pharmacognostic and Phytochemical Investigation of Bark and Leaf of Moringa Concanensis Nimmo

Amerendra Singh

Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

The plant species *Moringa concanensis* Nimmo is a tree belongs to the family Moringaceae. The plant is locally termed as Kattumurungai by tribal peoples of Nilgiris hill in the region of Tamil Nadu state. In view of its medicinal importance and taxonomic confusion, pharmacognostic studies, microscopical structure, morphological characteristics, chemical analysis and numerical values in epidermal studies was carried out to supplement the necessary information for the systematic identification and authentication of this plant, as per WHO guidelines. Pharmacognostical and preliminary phytochemical and antimicrobial investigations of the plant were carried out and reported. Apart from nutritional supplement this plant parts were used as a Ayurveda and Unani medicinal systems for the treatment of several ailments including anti-inflammatory, purgative, analgesic, potential antitumor, anti-fungal, antispasmodic, anti-inflammatory and diuretic activity. The ethanolic extract of the flowers of *Moringa concanensis* (family: Moringace) was tested for phytochemicals, anti-inflammatory, analgesic and antipyretic activity. The pharmacognostical and phytochemical studies made on the bark and leaf of *Moringa concanensis* like macroscopical and microscopical characters, powder microscopy, and physico-chemical constants like ash values, extractive value, thin layer chromatography analysis, High performance thin layer chromatography (HPTLC) analysis, loss on drying, drug extract preparation by using different solvents and phytochemical analysis gave valuable information. However, the data produced in the present investigation is also helpful in the preparation of the crude drug’s monograph and inclusion in various pharmacopoeias.
Development and Characterization of Quercetin-Loaded Liposomes for Enhanced Wound Healing

Rajendra Jangde*, Deependra Singh

University Institute of Pharmacy, Pt. RavishankarShukla University, Raipur, Chhattisgarh, India 492010.

Email: rjangdepy@gmail.com

ABSTRACT

A wound is defined as a defect or break in the skin, resulting from physical or thermal damage or as a result of the presence of an underlying medical or physical condition. We aimed to develop a biocompatible, biodegradable and controlled release of quercetin loaded-liposomal formulation. Quercetin-loaded liposome were prepared thin-film hydration method by optimizing ratio of active drugs and soya phospholipids. The prepared liposomes werw characterized by in vitro studies like in-vitro release study, entrapment efficiency, particle size, surface morphology and stability studies. Then further liposomal formulation was characterized by in-vivo study in excision wound model. The in-vitro release was found to be 66.54% in 24 hrs, Entrapment efficiency 86.5%, particle size 145.3 nm, SEM studies revealed the porous surface morphology in-vivo study were observed wound contraction 95.52±0.37% . The quercetin loaded liposomal formulation provides a direct continuous or sustained release of the anti-inflammatory and antioxidants at the wound surface. The prepared liposome caused an accelerated healing of open wounds.
Phytotherapeutic Approach for Prevention and Treatment of Alzheimer’s Disease - an Overview

Sachan Kapil¹*, Singh Pranjal Kumar², Singh Ranjit³

¹*Sunder Deep Pharmacy College, Ghaziabad, UP, India
²Kalka Institute for Research and Advanced Studies, Meerut, UP, India
³Shobhit University, NH-58, Meerut, UP, India

Email: bp.kapil@gmail.com

ABSTRACT

Herbs may play a promising role in the early treatment of Alzheimer's disease and other conditions involving poor memory and dementia. One of the chief benefits is that they have a low toxicity compared to pharmaceutical agents. The role of different medicinal plants in treatment of Alzheimer’s disease can also be explained as the effect on physiological pathway. *Bacopa monnieri*, essential oils and individual monoterpenoids obtained from *Salvia lavandulaefolia*, *Acorus calamus*, *Epimedium coreanum*, peels of *Citrus medica*, *Salvia lerrifolia*, *Phagnalon saxatile* have found to possess significant anticholinesterase activity. The antioxidants limonene and γ-terpinene obtained from peel of *Citrus medica*, the dietary omega-3 fatty acid docosahexaenoic acid (DHA), *Ginkgo biloba* leaf extract, *Ligusticum wallichii* extract containing tetramethyl pyrazine have shown significant effects in Alzheimer’s disease. Antiexcitotoxic agents like Ginsenoside from *Panax ginseng*, genistein, genistin, daidzein, daidzin, formononetin, equol, Eugenol, n β-carotene and zeaxanthin from *Lycium barbarum* and *Gossypium herbaceum* play an active role in treatment of Alzheimer’s disease. *Paonaria suffruticosa*, *Uncaria rhynchophylla*, *Ptychopetalum olacoides* and *Centella asiatica* have Anti amyloidogenesis property. Curcumin from *Curcuma longa* found to have Anti neuroinflammatory potential. *Perilla frutescens* seed oil, ginkgo leaf extract found to act as mitochondrial protectants. The treatment strategies for the management of patients with Alzheimer’s disease will have to include a variety of interventions directed at multiple targets. Thus, multidisciplinary investigations on medicinal herbs as well as new medicinal herbs using modern biological tools and animal models followed by extensive clinical trials are needed in order to develop effective therapeutic protocols for the management of the Alzheimer’s disease.
Formulation and Characterization of Sustained Release Tablets of Glimepiride by Using Synthetic and Natural Polymers

Mukesh katakwar*
Columbia Institute of pharmacy, Tekari, Raipur, Chhattisgarh, India

ABSTRACT

The present research work was aimed to develop matrix tablets of Glimepiride with Aloe barbadensis miller leaves mucilage and Povidone and to study its functionality as a matrix forming agent for sustained release tablet formulations. Physicochemical properties of dried powdered of guargum and HPMC tablet blend were studied. They found to have better satisfactory physicochemical properties with low SD values. The swelling behavior and release rate characteristics were studied. The dissolution study proved that the dried Aloe barbadensis miller mucilage and Povidone combination can be used as a matrix forming material for making Sustained release matrix tablets.
Qsar, Docking and E-Pharmacophore Approach on Novel Series of Hdac Inhibitors with Thiophen Linker as Anticancer Agents

Preeti Patel and Harish Rajak

Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur, C.G. 495009

Email: ppatelpharma@gmail.com

ABSTRACT

HDAC inhibitors can reactivate gene expression and inhibit the growth and survival of cancer cells. The 3D-QSAR and Pharmacophore modeling studies were performed to identify important pharmacophoric features and correlate 3D-chemical structure with biological activity. The pharmacophore hypotheses were developed using e-pharmacophore script and phase module. Pharmacophore hypothesis represents the 3D arrangement of molecular features necessary for activity. A series of 55 compounds with well-assigned HDAC inhibitory activity was used for 3D-QSAR model development. Best 3D-QSAR model, which is a five PLS factor model with good statistics and predictive ability, acquired Q2 (0.7293), R2 (0.9811) and standard deviation (0.0952). Molecular docking were performed using Histone Deacetylase protein (PDB ID: 1t69) and prepared series of hydroxamic acid based HDACIs. Docking study of compound 43 shows significant binding interactions Ser 276 and oxygen atom of dioxine cap region, Gly 151 and amino group and Asp 267 with carboxyl group of CONHOH, which are essential for anticancer activity. On docking, most of the compounds exhibited better glide score values between -8 to -10.5. We have established structure activity correlation using docking, energetic based pharmacophore modelling, pharmacophore and atom based 3D QSAR model. The results of these studies further used for the design and testing of new HDAC analogs.
Microemulsion: A Novel Ocular Drug Delivery System

Nivedita Gautam

Email: gautamnivedita89@gmail.com

Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G)

ABSTRACT

Eye diseases are common in day to day life. Ocular drug delivery has been a major challenge for pharmaceutical scientists due to the unique anatomy and physiology of eyes which contain various types of barrier layers. The most common approach for administering ophthalmic drugs is the microemulsion as ocular drug delivery system. Microemulsions are clear, stable, isotropic mixtures of oil, water and surfactant, frequently in combination with a cosurfactant. These systems are currently of interest to the pharmaceutical scientist because of their considerable potential to act as drug delivery vehicles by incorporating a wide range of drug molecules. They are particularly attractive for delivering hydrophobic drugs to the cornea because of the possibility of loading the drugs in the oil particle. Microemulsions enhance the solubilization capacity and dissolution efficiency of poorly soluble drugs as well. In last decade, microemulsions have been recognized as an interesting and promising ocular topical delivery vehicle for both hydrophobic and hydrophilic drugs. The aim of present review is to present the potential of microemulsions for ocular delivery. The review covers an update on the state of the skill of drug incorporation, a brief account concerning the components and classification of oil/lipids in microemulsions. Metabolism after topical administration and the applications are thoroughly discussed.
Study of Effect of Poly Aromatic Hydrocarbon Induced Oxidative Stress on the Nutraceutical Integrity of Leafy Edible Plants Grown In The Vicinity Of Thermal Power Units

Roshni Tandey, Vivekanand Mandal,
Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) 495009

ABSTRACT

Green leafy vegetables are an important part of human diet since it contains carbohydrates, proteins, vitamins, minerals and trace elements. One of the important pathways for the dietary intake of toxic air pollutants such as polyaromatic hydrocarbons (PAH) could be through vegetable and crops through the deposition of these types of pollutants. Excessive uptake of this type of toxic pollutants may cause serious health problems including cancer. Moreover, it also causes oxidative stress condition to plants which results in the loss of their nutraceutical properties. The purpose of the present study was to evaluate the content of accumulation of phenanthrene a PAH which is a potent carcinogenic, and also to evaluate the antioxidant capacity, total phenolic, flavonoid, β-carotene, chlorophyll contents in such edible plants (Brassica Alba and Spinach Oleracea) grown in urban and industrial area. A significant decrease in all these parameters were detected in plants growing in the vicinity of thermal power plants giving a clear indication that metabolic machinery inside the plants which is responsible for the production of secondary metabolites was compromised. Pearson coefficient hinted towards a direct relation between accumulation of phenanthrene and decrease in antioxidant and phenolic/flavonoid principles. Fingerprint analysis also indicated the possibility of presence of toxic degradation products.
Studies on Clonal Cultures & *Agrobacterium Transformation* of Important Medicinal Plant

Priya Patro, M. Thirunavoukkarasu

Email: Priyapatro163@gmail.com

Department of Biotechnology, Gd Rungta College of Science & Technology, Bhilai, CG, India

ABSTRACT

There is a mounting pressure on medicinal plants due to demand for plant based raw materials, the genetic loss of medicinal plants can be overcome by tissue culture techniques. In the recent years, tissue culture has emerged as a viable and reproducible technique to produce sufficient, disease-free, true-to-type materials of several economically important plants in limited time and space irrespective of climatic condition. For the first time, Tissue culture method was developed by G.Haberlandt in (1902), He is often called the “FATHER OF PLANT TISSUE CULTURE”. Explants cultured in plant growth regulator free medium only single shoot formation observed also time taken to form shoot was between 8-10 days. Shoots obtained from the cultures were routinely rooted on the root induction medium. Addition of an auxin to the medium was essential to induce rooting in the regenerated shoots. Root initiation occurred within 7-10 days on half-strength *MS medium* supplemented with or without 0.5 and 1.0 mg/l of IAA or IBA.

*Hairy root culture*, also called transformed root culture, is a type of plant tissue culture that is used to study plant metabolic processes or to produce valuable secondary metabolites or recombinant proteins, often with plant genetic engineering. Induction of multiple shoot is dependent on plant growth regulator present in the medium. Percent response was maximum when the *MS medium* had BA 0.5 mg/l + IAA 0.25 mg/l where about 85.71(%) culture responded and the maximum number of shoots per explants was 5.42 ± 2.11 with a mean shoot length of 2.19 ± 1.2 cm. Explants cultured in plant growth regulator free medium only single shoot formation observed also time taken to form shoot was between 8-10 days. Shoots obtained from the cultures were routinely rooted on the root induction medium. Experimental approaches used for the propagation of medicinal plants through tissue culture can be divided into three broad categories. The most common approach is to isolate organised meristem like shoot tips or axillary buds and induce them to grow into complete plants. In the second approach, adventitious shoots are initiated on leaf, root and stem segments or on callus derived from those organs. The third system of propagation involves induction of somatic embryogenesis in cell, callus and protoplast cultures.
An overview on Enzyme Immobilization

Dushyant Dewangan; Lokesh Verma; Akash Sao; Chandrakant Yadav

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

Email: dkglobals@gmail.com

ABSTRACT

The use of enzymes in industrial application is limited because most of the enzymes are relatively unstable, of high cost isolation, purification, and recovery of active enzymes from the reaction mixtures. Due to these reasons, the enzyme must be immobilized on the surface of same solid support or otherwise manipulated so that it can convert a continuous flow of substrate to product without being lost. Enzyme immobilization is a technique of confining the enzyme molecules to a distinct phase from the one in which the substrates and the products are present. This may be achieved by fixing the enzyme molecules to or within some suitable materials. Immobilization of enzyme molecules does not necessarily render them immobile; but in some methods of immobilization, the enzyme molecules move freely within their phase. The materials used for immobilization of enzymes, called carrier matrices, are usually inert polymers or inorganic materials. The method of immobilization fall into four main categories – (i) Physical adsorption onto an inert carrier, (ii) inclusion in the lattices of a polymerized gel, (iii) cross-linking of protein with a bi-functional reagent, and (iv) covalent binding to a reactive insoluble support. Enzyme immobilization is used in the development of biosensor, bioelectronics sensor in fermentation technology as well as in enzyme therapeutics. Enzyme immobilization is utilized in anchoring on the surface phase however, may be in the form of fine particulate, membranes or monolithic spheres.
Current Prospect of Herbal Neuraceuticals

Saraswati Sahu, Sangeeta Kumari, Akash Kesharwani, Vishal Kesharwani, Pragya Baghel, Shiv Shankar Shukla

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Medicinal herbs are plant parts, sometimes ground, extracted, or otherwise prepared, used for health profit. Nutraceuticals, a more recent and more general term, are a group of ordinary substances that includes assured herbs and such products as cholesterol-lowering margarines and psyllium-fortified products that are used as dietary supplements and keeping pace as foods. Most dietary supplements used in alternative medicine are derived from plants, and some are derived from animals. Avoid the side effect. May increase the health beneficial effect, May have naturally dietary supplement, so do not have unpleasant side effect, May increase the health value, our diet and improve medical condition of human, May easily be available and economically affordable.
Bridging Gap between Academic & Pharmaceutical Industries

Ravin Kumar Sahu

SLT Institute of Pharmaceutical Sciences Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G)

Email id: pravin.sahu02@gmail.com

ABSTRACT

We have always looked to higher education, business and industrial research and development to create individual prosperity, drive societal economic development and elevate in global commerce. However, several chronic and persistent disconnect between and within higher education and industry have created a gap that slows stalls or even prevents progress. We are too satisfied with copying products and business models others have developed. University graduates, when motivated toward entrepreneurship, will often settle for operating a franchise or founding a distributorship rather than doing something new and creative. We are not aiming far enough. These problems are not beyond our ability to solve, but it requires new ways of viewing some long-established systems and relationships, and the willingness to break with tradition for the betterment of both academia and industry. Academic researchers can find a way to perform basic research by having scientific learning and development programs along with real-time need by industry sector. In order to abreast with new technologies and needs, industries can connect to researchers to explore further paths for their problems. To bring industry and academia closer in terms of having productive discussion about the opportunities where they can work for mutual benefits & explore the possibilities of having customized curriculum as per the need of industry. We can connect industries with professional training pool by academia to bring desired skill set in their manpower, by providing a constant learning base and update knowledge for changing environment and market realities.
Microemulsions: A Novel Approach for Futuristic Transdermal Drug Delivery

Deepa Biswas*
Email: Biswasdeepa4@gmail.com
Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Since the discovery of microemulsions by Jack H. Shulman, there have been huge progresses made in applying microemulsions in the field of research and industrial processes. Microemulsions are isotropic, thermodynamically stable transparent (or translucent) systems of oil, water and surfactant, frequently in combination with a cosurfactant with a droplet size usually in the range of 20-200 nm. To date microemulsions have been shown to be able to protect labile drug, control drug release, increase drug solubility, increase bioavailability and reduce patient variability. Furthermore, it has proven possible to formulate preparations suitable for most routes of administration. Due to their unique properties, such as, ultralow interfacial tension, large interfacial area, thermodynamic stability and the ability to solubilized otherwise immiscible liquids, uses and applications of microemulsions have been numerous.

Topical microemulsions allow rapid penetration of active molecules due to the large surface area of the internal phase, and their components reduce the barrier property of stratum corneum. Microemulsions thereby enhance dermal absorption compared with conventional formulations and are therefore a promising vehicle due to their potential for transdermal drug delivery.
Grafted Polymer

Sandeep Minj

Email: Sandeepminj21592@gmail.com

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

The modification of polymers has received much attention recently. Among the methods of modification of polymers, grafting is one of the promising methods. In principle, graft co-polymerization is an attractive method to impart a variety of functional groups to a polymer. Graft co-polymerization initiated by chemical treatment, photo-irradiation, high-energy radiation technique, etc. is documented in this review. Several prime controlling factors on grafting are discussed. In the past several years, there has been increased emphasis on applications of grafted polymers. The modified polymers through grafting have a bright future and their development is practically boundless. In this review, we have tried to cover two important applications employing grafting technique, viz. membrane separation science and conducting polymers.
Role of Herbal Medicine in Asthma

Preeti Sen*, Pushpa Prasad, Amit Roy

Email: sweetisen4@gamil.com

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Asthma is a chronic inflammatory disorder of respiratory airway. The chronic inflammation is associated with airway hyper responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness, and coughing, particularly at night and in morning. 300 million people are affected with asthma worldwide which is increasing 50% every decade. The disease can affect any age but prevalence of this disease is more common in children. Asthma is a multifactorial disease which includes environment, allergen, infection, genetic, exercise, obesity, and component. The physical exercise like yoga, massage is also helpful. Pharmacological treatment with short-acting beta-agonists, anti-inflammatory drugs, and anticholinergics. Generally, pharmacological treatments are divided into 2 groups: quick-relief medications and controller medications. Antiasthma herbal medicine intervention could be complex interactions between herbal formula constituents produce synergistic effects and reduce possible side effects of some herbs. The importance of natural products, especially those derived from higher plants, in Tribal and non-tribal inhabitants used nearly 80 medicinal plants for treating asthma.
Studies on Controlled Release Transdermal Polymeric Matrix Film to Treating Hypertension

Debjit Bhowmik*, Amrendra Singh

Himachal Institute of Pharmacy Education and Research
Naudan, Bela, Hamirpur, Himachal Pradesh, Pin-177033, India

Email: debjit_cr@yahoo.com

ABSTRACT

Metoprolol succinate is a an anti-hypertensive agent which selected for the preparation of Transdermal delivery system as it complies with physicochemical properties required to permeate through skin. The pre formulation studies involving solubility, melting point, partition coefficient and pH of the drug were found to be comparable with the standard. The Transdermal films of metoprolol succinate were prepared by solvent evaporation method and were subjected for evaluation parameters such as weight variation, thickness, folding endurance, drug content, percentage moisture absorption, percentage moisture loss and diffusion studies. All the parameters showed by the formulations were within the limits. The Transdermal drug delivery system K1 (HPMC K 15 M alone) showed the drug release (95.16±1.534), but lasts only for 8 hrs. The Transdermal drug delivery system K2 (EC alone) showed lowest drug release but successfully prolonged the release. Thus, formulations K3 to K10 were developed using different ratios of HPMC K 15 M and EC, in order to achieve better release along with sustained action. All the formulations carried Dibutyl Phthalate as plasticizer and Dimethyl sulfoxide as permeation enhancer. The formulation K10 containing HPMC K 15 M: EC (400:400mg) showed better release (97.36±1.089) for sufficiently long period, up to 24 hrs and emerged as ideal formulation for metoprolol succinate. From this studies improving patient compliance of metoprolol succinate by development of Transdermal Drug delivery system using HPMC K 15 M and Ethyl cellulose.
Quinoxaline, Its Derivatives and Applications

Palash Uikey, Omkar Sahu, Sarakshi Toppe
Faculty of Pharmaceutical Sciences, SSTC-SSGI, Bhilai

ABSTRACT

Quinoxaline derivatives are an important class of heterocycle compounds, where N replaces some carbon atoms in the ring of naphthalene. Its molecular formula is C8H6N2, formed by the fusion of two aromatic rings, benzene and pyrazine. It is rare in natural state, but their synthesis is easy to perform. In this review the State of the Art will be presented, which includes a summary of the progress made over the past years in the knowledge of the structure and mechanism of the quinoxaline and quinoxaline derivatives, associated medical and biomedical value as well as industrial value. Modifying quinoxaline structure it is possible to obtain a wide variety of biomedical applications, namely antimicrobial activities and chronic and metabolic diseases treatment.
Sonogenetics: A non invasive approach

Yogesh Sharma*, Sumit Kumar

Himachal Institute of Pharmaceutical Education & Research
Nadaun, Hamirpur H.P.

ABSTRACT

Reliably activation of individual neurons in deeper brain regions is the major challenge in neuroscience. Optogenetic approaches require invasive surgical procedures to deliver light of specific wavelength to target cell to activate or silence them. The use of low-pressure ultrasound as a non-invasive trigger to activate specific ultrasonically sensitized neurons in the nematode. Ultrasound stimulation is non-invasive. This is particularly important for manipulating vertebrate neurons, as it eliminates the need for invasive surgery to insert fiber optics (required for some current optogenetic methods). Furthermore, ultrasound is well-suited for stimulating neuron populations as it focuses easily through intact thin bone and deep tissue to volumes of a few cubic millimeters. Dubbed sonogenetics is a new way to selectively activate brain, heart, muscle and other cells using ultrasonic waves. Dubbed son genetics, has some similarities to the burgeoning use of light to activate cells in order to better understand the brain. This new method, which uses the same type of waves used in medical sonograms, may have advantages over the light-based approach, known as optogenetics, particularly when it comes to adapting the technology to human therapeutics. Senior author Sreekanth Chalasani said that light-based techniques are great for some uses, but this is a new, additional tool to manipulate neurons and other cells in the body. In optogenetics, researchers add light-sensitive channel proteins to neurons they wish to study. By shining a focused laser on the cells, they can selectively open these channels; either activating or silencing the target neurons. But using an optogenetics approach on cells deep in the brain is difficult: typically, researchers have to perform surgery to implant a fiber optic cable that can reach the cells. Plus, light is scattered by the brain and by other tissues in the body. Chalasani added that both optogenetics and sonogenetics approaches hold promise in basic research by letting scientists study the effect of cell activation. And they also may be useful in therapeutics through the activation of cells affected by disease. However, for either technique to be used in humans, researcher’s first need to develop safe ways to deliver the light or ultrasound-sensitive channels to target cells.
Neuropeptide Y: Role in Food Intake and Obesity

Shweta Dutta, Kamleswari Bhardwaj, Aditee Keshtwani, Hemlata Dewangan

Columbia Institute of Pharmacy, Tekari, Raipur, Chhattisgarh, India

ABSTRACT

Neuropeptide Y (NPY) is a 36-amino acid neuropeptide that acts as a neurotransmitter in the brain and in the autonomic nervous system of humans; slight variations of the peptide are found in many other animals. It has various functions, including increasing food intake and storage of energy as fat, reducing anxiety and stress, reducing pain perception, affecting the circadian rhythm, reducing voluntary alcohol intake, lowering blood pressure, and controlling epileptic seizures etc. The effects of NPYergic activity on food intake is also demonstrated by the blockade of certain NPY receptors (Y1 and Y5 receptors), which, as was expected, inhibited NPYergic activity; thus, decreases food intake. Various studies conducted by different researchers revealed that the factors contributed to obesity in rats such as, an increase in glucocorticosteroid concentrations in plasma, insensitivity or resistance to insulin, mutation of leptin receptor; and an increase in NPY mRNA and NPY release.
Recent Trends in Cancer Prevention and Control in India-Challenges for New Millenium

Lucky Kumar*, P. Rai
Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

Recent times have seen an increase in the incidence of cancer. This is mainly attributed to urbanization, industrialization, lifestyle changes, population growth and increased life span (in turn leading to an increase in the elderly population). In India, the life expectancy at birth has steadily risen from 45 years in 1971 to 62 years in 1991, indicating a shift in the demographic profile. It is estimated that life expectancy of the Indian population will increase to 70 years by 2021–25. This has caused a paradigm shift in the disease pattern from communicable diseases to non-communicable diseases like cancer, diabetes and hypertension. Population based cancer registries within the National Cancer Registry Programme and outside the network has provided a picture of the cancer pattern in India. There are areas, which are largely un-represented, but the general pattern seems to hold good. Based on the cancer registry data it is estimated that there will be about 800,000 new cancers cases in India every year. At any given point there is likely to be 3 times this load that about 240,000 cases. Cancer sites associated with tobacco form 35 to 50% of all cancers in men and about 17% of cancers in women. These cancers are amenable to primary prevention and can be controlled to a large extent India is the one of the few developing countries that has formulated a National Cancer Control Programme. The programme envisages control of tobacco related cancers; early diagnosis and treatment of uterine cervical cancer; and distribution of therapy services, pain relief and palliative care through augmentation of health infrastructure. Suggested surrogate outcome measures include change in tobacco use, 'Knowledge, Attitude, Practice'(KAP) pattern, compliance to screening programmes, changes in referral practices and shift in stage distribution.
Recent Trends in Market Scope and Opportunities of Transdermal Drug Delivery System

Parveen Kumar*, P. Rai
Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

As a substitute for the oral route Transdermal drug delivery enables the avoidance of gastrointestinal absorption, with its associated pitfalls of enzymatic and pH associated deactivation. Transdermal delivery has many advantages over conventional modes of drug administrations, it thus avoids hepatic first pass metabolism and improves patient compliance. This approach of drug delivery is more permanent in case chronic disorders like hypertension which requires long term dosing to maintain therapeutic drug concentration. These systems are easy to apply and remove as when desired. In Intensive research has shown that Transdermal route is a potential mode of delivery of lipophilic drugs in systemic circulation. The market for Transdermal devices is currently estimated at US$ 1.2 billion, approximately 10% of the entire US $ 28 billion drug delivery market. In addition, Transdermal drug delivery market is currently based on only 10 drugs. Hence, Pharmaceutical scientists are striving to add new deliverables to the short list of approved Transdermal products. This proposed method also allows for reduce therapeutic dosaging due to the shortened metabolization pathway of the Transdermal route versus the gastrointestinal pathway. The main aim and objective of Transdermal drug delivery system are topical administered medicaments in the form of patches that deliver drugs for systemic effect at a predetermined and controlled rate. Transdermal systems deliver drugs direct through the skin. Worldwide market revenues for transdermal drug delivery systems are at US$3 billion with the growth rate expected to increase 12% annually through 2007. The market value for transdermal delivery was $12.7 billion in 2005 and it is expected to increase to $21.5 billion in the year 2010 and $31.5 billion in the year 2015.
Innovative Approaches for Nasal Drug Delivery System and Its Challenges and Opportunities

Shikha Thakur*, P. Rai

Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

Novel drug delivery is one of the fastest growing healthcare sectors, with sales of drugs incorporating novel drug delivery systems increasing at an annual rate of 15%. There are great opportunities for companies investing in R&D for new, improved drug delivery systems, allowing for improved therapeutic absorption and efficacy in patients. Conventionally, the nasal route has been used for the local delivery of drugs for the treatment of nasal allergies and infections. In recent years, research has established that the nasal route is a safe and acceptable alternative to the parenteral administration of drugs. The nasal route has also been found to be useful in targeting drugs to the central nervous system. In addition, absorption of drug at the olfactory region of the nose provides a potential for a pharmaceutical compound to be available to the central nervous system. The nasal delivery of vaccines is another very attractive application in terms of efficacy and patient acceptance. The use of the nasal route for the delivery of challenging drugs has created much interest in recent years in the pharmaceutical industry. Consequently, drug delivery companies are actively pursuing the development of novel nasal drug-delivery systems and the exploitation of these for administration of conventional generic drugs and peptides, both in-house and with partners in the pharmaceutical industry. The nasal cavity is covered by a thin mucosa which is well vascularised. A drug molecule can therefore quickly be transferred across the single epithelial cell layer directly to the systemic blood circulation without first-pass hepatic and intestinal metabolism. The effect is often reached within 5 min for smaller drug molecules. Nasal route is a part of drug delivery strategy that is emerging to be a fastest growing drug delivery system with an annual growth of 11% for locally acting drugs & 30% for systemically acting drugs.
Review On, Colon Specific Drug Delivery- Strategies and *In-Vitro In-Vivo* Evaluation

Prachi Thakur®, P. Rai

Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

**ABSTRACT**

The increase in the interest in targeted delivery of drug to the colon via the oral route. The colon is a site where both local and systemic delivery of drugs can take place. Local delivery could, for example, allow topical treatment of inflammatory bowel disease. Treatment could be made more effective if it were possible for drugs to be targeted directly on the colon. Systemic side effects could also be reduced. Colon specific systems might also allow oral administration of peptide and protein drugs, which are normally inactivated in the upper parts of the gastrointestinal tract. Colon-specific systems could also be used in diseases that have diurnal rhythms. To achieve successful colonic delivery continuous efforts have been focused on designing colon-specific delivery systems with improved site specificity and versatile drug release kinetics to accommodate different therapeutic needs. Among the systems developed for colon-specific delivery, four systems were unique in terms of achieving in vivo site specificity, design rationale, and feasibility of the manufacturing process i.e. coating with pH-sensitive polymers, formulation of timed released systems, exploitation of carriers that are degraded specifically by colonic bacteria, and osmotic controlled drug delivery systems. The focus of this review is to provide detailed descriptions of the four systems, and in vitro/in vivo evaluation of colon-specific drug delivery systems.
Recent Advances of Nasal Drug Delivery Systems-A review

Rohit Kaundal*, P. Rai

Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

As the field of biotechnology continues to advance, nasal drug delivery is increasingly becoming a more viable alternative to oral and injectable routes of administration. Recently, it has been shown that many drugs have better bioavailability by nasal route than by oral route. This has been attributed to rich vasculature and a highly permeable structure of the nasal mucosa coupled with avoidance of hepatic first-pass elimination, gut wall metabolism and/or destruction in the gastrointestinal tract. The nasal route could be particularly important for drugs used in crisis management such as for pain and for centrally acting drugs where the pathway from the nose to brain might provide a faster and more therapeutic effect. Therapy through intranasal administration has been an accepted form of treatment in the Ayurvedic system of Indian Medicine. In recent years many drugs have been shown to achieve better systemic bioavailability through nasal route than by oral administration. Advances in biotechnology have made available a large number of protein and peptide drug for the treatment of a variety of diseases. These drugs are unsuitable for oral administration because they are significantly degraded in the gastrointestinal tract or considerably metabolized by first pass effect in the liver. Even the parenteral route is inconvenient for long term therapy. Of many alternate routes tried, intranasal drug delivery is found much promising for administration of these drugs. Nasal drug delivery has always been a key development area for both pharmaceutical and device development companies, presenting many opportunities and challenges. The physiology of the nose presents obstacles, but offers a promising route for systemic delivery of numerous therapies and debatably drug delivery route to the brain. Leading authorities in nasal drug delivery and associated technologies will cover aspects of physiology, nasal anatomy, nasal delivery to the brain, vaccination via the nose, nasal delivery to the sinuses, the regulation of nasal products and much more. In addition, case histories of existing/in development products/delivery systems will be explored. Intranasal vaccination has gained increased interest in recent years as a delivery route for new vaccines as it can provide superior protection at mucosal surfaces. This, in combination with the minimally invasive nature of the nasal vaccination route, makes intranasal delivery an attractive alternative to immunization via injection.
Recent Challenges and Advances in Ophthalmic Drug Delivery System

Vishal Dhiman*, P. Rai

Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

Ocular drug delivery is one of the most fascinating and challenging tasks facing the Pharmaceutical researchers. One of the major barriers of ocular medication is to obtain and maintain a therapeutic level at the site of action for prolonged period of time. Ocular drug delivery is hampered by the barriers protecting the eye. The bioavailability of the active drug substance is often the major hurdle to overcome. Conventional ocular dosage form, including eye drops, is no longer sufficient to combat ocular diseases. This article reviews the constraints with conventional ocular therapy, essential factors in ocular pharmacokinetics, and explores various approaches like eye ointments, gel, viscosity enhancers, prodrug, penetration enhancers, microparticles, liposomes, niosomes, ocular inserts, implants, intravitreal injections, nanoparticles, nanosuspension, micro emulsion, in situ-forming gel, iontophoresis, and periocular injections to improve the ocular bioavailability of drug and provide continuous and controlled release of the drug to the anterior and posterior chamber of the eye and selected pharmacological future challenges in ophthalmology. In near future, a great deal of attention will be paid to develop noninvasive sustained drug release for both anterior and posterior segment eye disorders. Current momentum in the invention of new drug delivery systems holds a promise toward much improved therapies for the treatment of vision-threatenng disorders.
Transdermal Ionophoresis Technique-A Potential Emerging Drug Delivery System

Tushar Sharma*, P. Rai
Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

The objective of delivery system is to achieve optimum therapeutic management. But, it still remains a challenge in the field of pharmaceuticals for delivery of ionic species such as proteins and peptides. Development of iontophoretic system is a breakthrough in this field designed to improve the delivery rate of ionic compounds. This technique generates an electrical potential gradient that facilitates the movement of solute ions across the membrane. Moreover with the advent of more sophisticated techniques available for the production of recombinant proteins and peptides, there is an ever-increasing demand of novel delivery systems that could effectively deliver these ionic species at the specific site. Iontophoresis seems to be an ideal candidate to sort out the limitations associated with the delivery of ionic drugs. This delivery system utilizes electric current as a driving force for permeation of ionic and non-ionic medications. The rationale behind using this technique is to reversibly alter the barrier properties of skin, which could possibly improve the penetration of drugs such as proteins, peptides and other macromolecules to increase the systemic delivery of high molecular weight compounds with controlled input kinetics and minimum inter-subject variability. Although iontophoresis seems to be an ideal candidate to overcome the limitations associated with the delivery of ionic drugs, further extrapolation of this technique is imperative for translational utility and mass human application. The controlled or feedback iontophoretic drug delivery may include the use of polymeric system responsive to an oscillation magnetic field, temperature sensitive polymers, polymers responsive to externally applied ultrasound and chemically sensitive polymers. The iontophoretic delivery of macromolecules will open the doors to non-invasive transdermal delivery of peptide-based pharmaceuticals, following the advances in recombinant DNA technology, which are the wonder drugs of tomorrow.
Microchip Drug Delivery - New Era of Drug Delivery System

Savita*, P. Rai
Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

Microchip drug delivery system is the most wonderful system of delivering the drug for a great span of time without the intervention of the patient to whom it is fixed. It consists of varied number of sockets containing drug (generally ranging from 50-300) which release the drug at the fixed intervals each at a time. Microchips have developed its core technology for drug delivery by hermetically sealing small quantities of drug in the micro reservoirs, and releasing that drug on schedule or demand. In drug delivery, there are several fundamental challenges: Long-term storage and protection of the compound, Appropriate delivery (i.e., timing and pharmacokinetics), Release of precise amounts of a compound at desired interval Compliance to prescribed therapy. A microchip system has the ability to store a large number of drugs or chemicals, control the time at which release begins, and control the rate at which the chemicals are released. Drug delivery device is capable of controlled, pulsatile or continuous release of a wide variety of drugs that can be safely implanted inside the body. The microchip could be integrated with a tiny power supply and controlled by a microprocessor, remote control, or biosensors.
Telemedicine- An Innovating Healthcare System in India

Asish Sharma*, P. Rai

Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

Telemedicine is a rapidly developing application of clinical medicine where medical information is transferred through the phone or the Internet and sometimes other networks for the purpose of consulting, and sometimes remote medical procedures or examinations. Telemedicine may be as simple as two health professionals discussing a case over the telephone, or as complex as using satellite technology and video-conferencing equipment to conduct a real-time consultation between medical specialists in two different countries. Telemedicine generally refers to the use of communications and information technologies for the delivery of clinical care. Telemedicine has been steadily gaining ground in the state with public-private initiatives touching the lives of rural people. It is important considering the fact that rural patients have to travel long distances and also incur additional expenses to have access to super specialty Medicare.
Nanosuspension - A Novel Approaches In Drug Delivery System

Piyesh Mahajan*, P. Rai

Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

The interest in the preparation and application of nanometer-sized materials is increasing due to their tremendous potential as a drug delivery system with wide range of applications. Recently, nanoscale systems have received much interest as a way to resolve solubility issues because of their cost-effectiveness and technical simplicity compared to liposomes and other colloidal drug carriers. Nanosuspensions have proven to be a better alternative over other approaches currently available for improving bioavailability of number of drugs with low solubility. Nanosuspensions have been extensively developed for a wide range of drugs and have been evaluated for in vitro and in vivo applications by various routes: parenteral, oral, pulmonary, topical. They have also been used for drug targeting. Different preparation methods for nanosuspensions and their application are being reported and patented. In fact, the number of products based on nanosuspension in the market and under clinical study is higher than that of other nanotechnology-based applications. A surprisingly large proportion of new drug candidates emerging from drug discovery programmes are water insoluble, and therefore poorly bioavailable, leading to abandoned development efforts. These so-called 'brickdust' candidates can now be rescued by formulating them into crystalline nanosuspensions.
Nutraceutical –a Bright Scope and Opportunity of Indian Healthcare Market

Rahul Thakur*, P. Rai

Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

Nutraceutical is regarded as the bio active substance and the constituents are either of known therapeutic activity or are chemically defined substance generally accepted to contribute substantially to the therapeutic activity of the drug. Phytochemicals screening involves botanical identification, extraction with suitable solvents, purification and characterization of the bioactive constituents of pharmaceutical importance. Quality control for the officially and safely of herbal product is essential .The quality control of photochemical may be defined as the status of a drug which is determined either by identity, purity, constant and other chemical physical biological properties or by manufacturing process .compound with synthetic drug The critical and approach for herbal drug are much more complex

Nutraceutical, a portmanteau of the words “nutrition” and “pharmaceutical”, is a food or food product that reportedly provides health and medical benefits, including the prevention and treatment of disease. A product isolated or purified from foods that is generally sold in medicinal forms not usually associated with food. A nutraceutical is demonstrated to have a physiological benefit or provide protection against chronic disease. The dietary and advanced analytical techniques for the determination and quantification of various neutraceuticals supplements and nutraceutical market is projected to achieve a global market size of about Rs.90 billion in 2013 at a CAGR of 20.24% . There has been resurgence in the area of nutraceutical development in past few years especially because of the development of highly sophisticated.
Microencapsulation Technology-New Era of Novel Drug Delivery System

Kamal Kishore*, P. Rai

Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

Microparticulate drug delivery systems provide tremendous opportunities for designing new controlled and delayed release oral formulations, thus extending the frontier of future pharmaceutical development. The Microparticulate offers a variety of opportunities such as protection and masking, reduced dissolution rate, facilitation of handling, and spatial targeting of the active ingredient. It is the process by which individual particles or droplets of solid or liquid material (the core) are surrounded or coated with a continuous film of polymeric material (the shell) to produce capsules in the micrometer to millimeter range, known as microcapsules. Microencapsulation technology can protect active materials against environment, stabilize them, prevent or suppress volatilization. Microencapsulation technology can provide new forms and features and many polymeric drug delivery systems, biodegradable polymers have been used widely as drug delivery systems because of their biocompatibility and biodegradability. Microencapsulation is a powerful technique to achieve targeted delivery and on-demand release of different active ingredients. Many synthetic and natural biodegradable polymers present exciting opportunities in tailor-making the micro particle formulations for long-term drug release with specific release rates. Hence finally concluded that continuous knowledge upgradation is required in order to make desired drug delivery system and minimization of problems associated with physicomechanical techniques and complete knowledge about selection of raw materials and method for their microencapsulation to get desire goal of study.
Food Poisoning: Causes, Symptoms, Diagnosis and Remedies

Debjit Bhowmik*

Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

Food poisoning occurs when you swallow food or water that contains bacteria, parasites, viruses, or toxins made by these germs. Most cases of food poisoning are from common bacteria such as Staphylococcus or E. coli. Food poisoning, also known as acute gastroenteritis, is an acute inflammation of the lining of the stomach and small bowel. Food poisoning is a common, usually mild, but sometimes deadly illness that occur suddenly (within 48 hours) after consuming a contaminated food or drink. Most of the common contaminants cause nausea, vomiting, diarrhea, and abdominal cramping. Depending on the contaminant, fever and chills, bloody stools, dehydration, and nervous system damage may follow. Food poisoning comes from eating foods that contain germs like bad bacteria or toxins, which are poisonous substances. Bacteria are all around us, so mild cases of food poisoning are common.
Emerging Trends of Oral Control Drug Delivery Systems-An Overview

Rohit Dhiman*, P. Rai

Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

Oral controlled release drug delivery is a drug delivery system that provides the continuous oral delivery of drugs at predictable and reproducible kinetics for a predetermined period throughout the course of GI transit and also the system that target the delivery of a drug to a specific region within the GI tract for either a local or systemic action. All the pharmaceutical products formulated for systemic delivery via the oral route of administration, irrespective of the mode of delivery (immediate, sustained or controlled release) and the design of dosage form (solid, dispersion or liquid), must be developed within the intrinsic characteristics of GI physiology. Therefore the scientific framework required for the successful development of oral drug delivery systems consists of basic understanding of (i) physicochemical, pharmacokinetic and pharmacodynamic characteristics of the drug; (ii) the anatomic and physiologic characteristics of the gastrointestinal tract and (iii) physicochemical characteristics and the drug delivery mode of the dosage form to be designed.
Cox-2 Regulators and Their Role in Inflammation

Nushrat Parveen, Triveni Kanwar, Monika Keshri, Nitu Patel, Pushpa Prasad, Ram Kumar Sahu

Columbia Institute of Pharmacy, Tekari, Raipur (C.G.), India

ABSTRACT

Inflammation is the immune system’s response to infection and injury and has been implicated in the pathogenesis of arthritis, cancer and stroke, as well as in neurodegenerative and cardiovascular disease. Inflammation is an intrinsically beneficial event that leads to removal of offending factors and restoration of tissue structure and physiological function.

Cyclooxygenase (COX), officially known as prostaglandin-endoperoxide synthase (PTGS), is an enzyme that is responsible for formation of prostanoids, including thromboxane and prostaglandins such as prostacyclin. The two cyclooxygenase isoforms, COX-1 and COX-2, are targets of nonsteroidal anti-inflammatory drugs (NSAIDs). COX-1 and COX-2 are of similar molecular weight, approximately 70 and 72 kDa, respectively, and having 65% amino acid sequence homology and near-identical catalytic sites. COX-2 is an inducible enzyme as it is produced under certain specific conditions like inflammation and is located in macrophages, leukocytes and fibroblasts. COX-2 is involved in the synthesis of prostaglandins that causes pain and inflammation in the body. Different types of prostanoids can be easily synthesized in the body by using an enzyme named as cyclooxygenase (COX). These prostanoids including prostaglandins, prostacyclin and thromboxane are important biological mediators that play crucial role in the development of pain and inflammation in the body. So it is possible to get relief from pain and inflammation by inhibiting the COX enzyme.
Some Plant Having Antidiabetic Activity in Homeopathic Medicine

Bhupendra Negi*

Columbia Institute of Pharmacy, Tekari, Raipur (C.G.), India

Email: Bhupendranegi24@gmail.com

ABSTRACT

The aim of present review is to establish the use of plants parts or extract in curing diabetes mellitus. It also collates available on plants with hypoglycaemic effects. In the present investigation if is focused or experimental studies in hyperglycaemic plants and their bioactive components. A brief description on type of diabetes related physiological disorders and available herbal plants for antidiabetic activity.
Recent Advances in Nanoparticles

Swapna Singh*, Venkat Ram, Dilip Kumar, Salman Khan

Columbia Institute of Pharmacy, Tekari, Raipur (C.G)

ABSTRACT

Powder technology has already extended its scope of interest to nanoparticles with novel properties and functionalities. Since the establishment of the national nanotechnology center (Nanotec) in 2003, research activities in nanotechnology have shot up remarkably, including the production of nanoparticles via physical, chemical and biological method. Nanotechnology refers to the creation and utilization of materials whose constituents exist at the nanoscale; and, by convention, be up to 100 nm in size. Nanotechnology explores electrical, optical, and magnetic activity as well as structural behavior at the molecular and submolecular level. It has the potential to revolutionize a series of medical and biotechnology tools and procedures so that they are portable, cheaper, safer, and easier to administer. Nanoparticles can be synthesized chemically or biologically. Metallic nanoparticles that have immense applications in industries area of different types, namely, gold, silver, alloy, magnetic etc. This study aims to present an overview of nanoparticles, with special reference to their mechanism of biosynthesis and types.
Role of Prostaglandins in Inflammation and Development of Colorectal Cancer

Suresh Kumar Ghritlahare*, Uttam Kumar Yadav, Kamal BabuAditya, Trilochan Satapathy

Columbia Institute of Pharmacy, Raipur, Chhattisgarh, India

ABSTRACT

More than one million new cases of colorectal cancer (CRC) are diagnosed worldwide each year. Prostaglandins are originally derived from membrane phospholipids, which are cleaved by phospholipase A2 (PLA2) thereby generating arachidonic acid, the mother substance for both the prostaglandins. Prostaglandins, being generated from arachidonic acid in reactions dependent on cyclooxygenases (COX-1, COX-2), have been implicated in carcinogenesis of many organs. Approximately 70–80% of human colorectal carcinomas have increased levels of cyclooxygenase-2 (COX-2). Early diagnosis of CRC can prevent the mortality. The CRC can be diagnosed by various techniques such as analysis of DNA and RNA real time PCR, ELISA, Immumohistochemistry etc. Various methods used for treatment of CRC such as gene therapy, chemotherapy, immunogenetherapy and laparoscopic surgery etc.
Diabetes Mellitus and Its Herbal Treatment

Kunal Chandrakar* Dr. Trilochan Satpathy

Columbia Institute of Pharmacy, Tekari, Near Vidhan Sabha Road, Raipur, (C.G.), 493111

ABSTRACT

Diabetes mellitus is a group of metabolic diseases characterized by high blood sugar (glucose) levels that result from defects in insulin secretion, or action, or both. Herbal medicines have been highly esteemed source of medicine throughout the human history. They are widely used today indicating that herbs are a growing part of modern high-tech medicine. Some of the herbal plants and active chemical constituents which have a role in the management of Diabetes mellitus are compiled here are discussed in this review.
Recent Advances in Treatment of Gastro Esophageal Reflux Disease

Hemlata Dewangan*, Aditee Kesharwani, Trilochan Satapathy, Jyoti Dewangan

Columbia Institute of Pharmacy, Tekari, Raipur, C.G, 493 111

ABSTRACT

Gastro esophageal reflux disease (GERD) is a common chronic disorder that is associated with a huge economic burden in the many countries and significantly decreased quality of life. The association between increasing body mass index (BMI) and symptoms of gastro esophageal reflux disease (GERD). Changes in gastro esophageal anatomy and physiology caused by obesity may explain the association. These include an increased prevalence of esophageal motor disorders, diminished lower esophageal sphincter (LES) pressure, the development of a hiatal hernia, and increased intragastric pressure. GERD can lead to complications that include esophageal stricture and esophageal adenocarcinoma. Investigations and technical advances have enhanced our understanding and management of gastro esophageal reflux disease such as with the availability of sophisticated imaging studies, endoscopic ultrasound etc. Therapy for Gastro esophageal reflux disease consists of Antacids, proton pump inhibitors. Acid suppression by the H2 blocker, anti cholinergics and protective agents. This review focuses on the various multicultural issues in the epidemiology, Pathophysiology, diagnosis, and treatment of GERD.
Cystatin C: A Specific Biomarker For Early Kidney Damage

Debashish Paramanick1*, Khilesh Kumar Sahu2*, Jyoti Dewangan3*, Shiv Kumar Bhardwaj4*

Columbia Institute of Pharmacy Raipur, Chhattisgarh, India

ABSTRACT

Cystatin C is a 13-kDa basic protein belonging to the cystatin super family of cysteine proteinases inhibitor with widespread distribution in biological fluids. It is produced by virtually all nucleated cells, and the production rate is unaffected by inflammatory processes, age, sex, and nutritional status, and is freely filtrated through the glomerular membrane and nearly completely reabsorbed and degraded by the proximal tubular cells. In clinical practice Cystatin C is becoming more frequently known as the biomarker of choice for detecting renal failure? Cystatin C may help clinicians in diagnosing early kidney damage more effectively than by measuring creatinine levels alone. Early intervention in the development of this kind of disease may consequently reduce the number of patients developing chronic renal failure.
Spherical Agglomeration: An Innovation in Tablet Technology

Dipesh kumar sahu*, Sanjib bahadur, Uttam kumar sahu

Columbia Institute of pharmacy, Tekari, Near Vidhansabha, Raipur, C.G., 493111, India

ABSTRACT

Direct tabletting technique is modern and efficient technology used in tablet manufacturing and it has been successfully applied for various poorly soluble and drugs with poor micromeritic properties. Spherical crystallization is a particle engineering technique which involves the transformation of fine crystals into spherical shape which enhances the micromeritic properties such as bulk and tapped densities, compressibility, porosity, packability, solubility and dissolution. The present review gives a glimpse on spherical crystallization technique and its utility in direct compression of tablets. It also provides comprehensive review on merits of direct compression over granulation technique. It provides information about methods and mechanisms of spherical crystallization techniques such as solvent change method, quasi emulsion solvent diffusion method, ammonia diffusion method and neutralization methods, how to optimize conditions such as crystallization solvent medium, temperature, speed of agitation, amount of bridging liquid and how micromeritic properties improved with this techniques. This review emphasis principle steps involved in the process of spherical crystallization such as flocculation zone, zero growth, fast growth zone and factors curbing the process of agglomeration such as solubility profile, mode and intensity of agitation, amount of bridging liquid and temperature, advantages and disadvantages of spherical agglomeration and evaluation of agglomerates.
Development of Phytoconstituent Based Mucoadhesive Antifungal Vaginal Gel

Ananta Choudhury*, Amit Roy, Suman Saha, Sanjib Bahadur, Shashikant Chandrakar, Pushpa Prasad

Department of Pharmaceutics, Columbia Institute of Pharmacy, Tekari, Raipur, C.G.

ABSTRACT

The present experimental study has been designed with an aim to develop phytoconstitute based mucoadhesive antifungal vaginal gel for wide range of fungal infections. This topic of research has been selected addressing the clinical status of the women’s health related problems. Around 75% of world women population experience acute episodes of vaginal candidasis at least once during their life time and if not treated properly may prove life threatening. All the formulations were prepared incorporating optimized concentration of curcumin and fluconazole as active constituents. Antifungal activities of Phyto-combination were screened based on In-Vitro antifungal study. Mucoadhesive polymers like Carbopol 940 and HPMC K4M were used to prepared gel base. In-vitro evaluation such as determination of pH, viscosity, spreadability, mucoadhesive study, Drug content, drug release study and In-Vivo study like RVI (rabbit vaginal irritation test) were performed to evaluate the performance of prepared formulations. Based on the result it was concluded that prepared formulations were safe, effective and overall performances were found satisfactory. Among the several preparations, F2 formulations that contain 1:4 ratios of curcumin and fluconazole show better result.
Microemulsion: A New Phenomenon to Enhance Drug Absorption

Roshan Sonwani*, Shashikant Chandrakar, Dr. Amit Roy

Columbia Institute of Pharmacy, Tekari, Raipur (C. G) - 493111

ABSTRACT

Microemulsions are optically isotropic and thermodynamically stable liquid solutions of oil, water and amphiphile. Currently, antifungal drugs are generally used as conventional cream and gel preparations in topical treatment. Microemulsions are quaternary systems composed of an oil phase, a water system, surfactants and a cosurfactant. Droplet diameter in stable microemulsion is usually within the range of 10-100 nm (100-1000 Å). Topical delivery administration is a localized drug delivery system anywhere in the body through ophthalmic, rectal, vaginal, and skin as topical routes. These systems are currently of interest to the pharmaceutical scientist because of their unique characteristics and considerable potential to act as drug delivery carrier by incorporating a wide range of drug molecules. Preparing a pharmaceutically acceptable microemulsion demands a clear understanding of the micro-emulsion structure, phase behavior, factors leading to its thermodynamic stability, factors influencing drug release from the formulation, requirements of ideal microemulsion excipients, and the potential uses and limitations of the microemulsion system. Microemulsions are readily distinguished from normal emulsions by their transparency, low viscosity and more fundamentally their thermodynamic stability. Microemulsions are shown to be effective dermal delivery mechanism for several active ingredients for pharmaceutical and cosmetic applications. Topical microemulsions allow rapid penetration of active molecules due to the large surface area of the internal phase, and their components reduce the barrier property of stratum corneum. Microemulsions thereby enhance dermal absorption compared with conventional formulations and are therefore a promising vehicle due to their potential for transdermal drug delivery.
Recent Advances in Mucoadhesive and Bioadhesive Drug Delivery System

Niteshwari Bhargav*, Ananta Chowdhury, Amit Roy

Columbia Institute of Pharmacy, Tekari near Vidhansabha Raipur 493111

ABSTRACT

Bioadhesion can be defined as a phenomenon of interfacial molecular attractive forces amongst the surfaces of the biological substrate and the natural or synthetic polymers, which allows the polymer to adhere to the biological surface for an extended period of time. Bioadhesive polymeric systems have been used in the development of products for various biomedical applications and surgical glue. The bioadhesive polymers can be broadly classified into two groups, namely specific and nonspecific. The specific bioadhesive polymers (e.g. lectins, fibrin) have the ability to adhere to specific chemical structures within the biological molecules while the nonspecific bioadhesive polymers (e.g. polyacrylic acid, cyanoacrylates) have the ability to bind with both the cell surfaces and the mucosal layer. Current use of mucoadhesive polymers to increase contact time for a wide variety of drugs and routes of administration has shown dramatic improvement in both specific therapies and more general patient compliance. Hence mucoadhesive polymers can be used as means of improving drug delivery through different routes like gastrointestinal, nasal, ocular, buccal, vaginal and rectal.
Tuberculosis

Priyanka Morewala*, Khushboo Verma, Moniza Nurez Khan, Prachi Gurudewan

Columbia Institute of Pharmacy, Raipur, Chhattisgarh, 493111

Email: priyankamorewala08@gmail.com

ABSTRACT

Tuberculosis (TB) remains a global health threat. Although it is generally accepted that TB results from intensive cross-talk between the host and the pathogen *Mycobacterium tuberculosis* underlying mechanisms remain elusive. We need to develop better and faster-acting medicines to fight tuberculosis and therefore bridge the gap between the scientific discovery and the market in order to provide affordable TB treatment to anyone in the world. Although most cases of tuberculosis (TB) can be cured with antibiotics, relapse is common if patients do not continue chemotherapy for at least 6 months. Thus, improved therapeutic strategies are urgently needed. In the present work, the efficiency of the immune system with the combined DNA vaccine may be a valuable adjunct to shorten the duration of antibacterial chemotherapy. It is suggested that the combined DNA vaccine along with conventional TB chemotherapy has strong potential for TB immunotherapy and may provide new alternatives to control the disease.
Transdermal Drug Delivery System

Sachin Pradhan*, Sandip Prasad Tiwari, Amit Roy

Columbia Institute of Pharmacy Tekari, Raipur Chhattisgarh

ABSTRACT

Transdermal drug delivery is the application of drug on the skin surface so that it can infuse through the skin and touches the systemic circulation at appropriate concentration to confirm satisfying efficacy. Transdermal drug delivery system (TDDS) has numerous merits over conventional system; TDDS offers sustained drug release, escaping of first pass effect, patient obedience, easiness of application and deduction in case of toxicity as well as diminish in the side effects as compared with conventional therapy. The stratum corneum acts as a barrier that limits the permeation of substances through the skin and this limitation can be overcome by penetration increasing techniques. A transdermal patch has numerous components such as backing membrane, drug reservoir, adhesive layer, release control membrane and liner etc. This review article offers an overview of TDDS, its advantages over conventional dosage forms, Limitations, various components of transdermal patches, types of transdermal patches, and its methods of evaluation and the advancements done in this field.
Topical Gel: A Recent Approach for Novel Drug Delivery

Seema Sahu*, Rishi Paliwal, Amit Roy

Columbia Institute of Pharmacy, Tekari, Near Vidhan Sabha, Raipur, (C.G)

ABSTRACT

Drug delivery systems are methods which are used to ensure that drugs get into the body and reach the area where they are needed. These systems must take a number of needs into account, ranging from ease of delivery to effectiveness of the drugs. The gel formulation provides better application property and stability in comparison to cream and ointment. Topical gel drug administration is a localized drug delivery system anywhere in the body through ophthalmic, rectal, vaginal and skin as topical routes. Drug delivery systems also need to consider the way in which a drug is metabolized by the body. Skin is the one of the most extensive and readily accessible organs on human body for topical administration and is main route of topical drug delivery system. Topical application of drugs offers potential advantages of delivering the drug directly to the site of action and acting for an extended period of time. Topical drug delivery systems involve the introduction of a drug to the surface of the body, in a formulation which can be absorbed. Topical gels are intended for skin application or to certain mucosal surfaces for local action or percutaneous penetration of medicament or for their emollient or protective action. Skin patches are an example of topical drug delivery systems. These systems are often very easy for patients to use, which makes them appealing. In all cases, the goal of a drug delivery system is to get the right dosage to the right place.
Polymeric Nanosystems: Emerging Multiparticulates for Carcinoma Specific Drug Delivery

Kuldeep Singh Sisodia*, Dr. SK Lanjhiyana

Institute of Pharmaceutical Sciences, Guru Ghasidas Central University, Bilaspur, Chattisgarh, India

ABSTRACT

The objective of this review is to outline current major cancer targets for nanosystem and give insight into the direction of the field. This review aims to explore recent work directed towards more targeted treatment of cancer, whether through more specific anti-cancer agents or through methods of delivery. These areas include delivery by avoiding the reticuloendothelial system, utilizing the enhanced permeability and retention effect and carcinoma-specific targeting. These nano-sized systems like Hydrogels, Micelles, liposome, Nanomaterial formulation, Nanocells, Dendrimers, Nanotubes, Polymersomes, Nano sensors, Quantum dots, XPclad® nanoparticles have small size, customized surface, improved solubility, and multi-functionality of nanoparticles will continue to open many doors and create new biomedical applications. This rapidly growing system requires multiple approaches of development and cross checking results and then further development to ameliorate various issues of drug targetibility. This article highlights brief summary of nanosystems for the “Nanotist” and discusses nanosystem that has shown promising features in targeting colorectal carcinomas via oral route for therapeutic drug bioavailability. To conclude with successful targeted drug delivery, a drug needs to be protected from degradation, release and/or absorption by various factors in body. Genetic basis has to keep in mind as it can reduce toxic effects and drug amount of “anti-oncoceuticals”, which is an important requirement of current therapeutic and treatment system. And for this reason, considering the selective uptake of nano or sub-nanosystem by adenocarcinomaous and inflamed cells/ tissues, a nano-sized formulation is expected to give better pharmacological effect in the colon. This review aims to focus such aspects of nanosystems.
Mucoadhesive Gel: A Novel Approach for Drug Delivery System

Anjali Gaute*, Ananta Choudhury

Columbia Institute of Pharmacy Raipur, Chhattisgarh, India

ABSTRACT

Mucoadhesion is commonly defined as the adhesion between two materials, at least one of which is a mucosal surface. Mucoadhesive polymers have numerous hydrophilic groups, such as hydroxyl, carboxyl, amide, and sulfate. These groups attach to mucus or the cell membrane by various interactions such as hydrogen bonding and hydrophobic or electrostatic interactions. Mucoadhesion gel describes the attractive forces between a biological material and mucus or mucous membrane. Mucus membranes adhere to epithelial surfaces such as gastrointestinal tract (GI-tract), vaginal wall, lung, eyes, etc. They are generally hydrophilic in nature. Different mucoadhesive gels used to prepared, using various gelling agents like sodium carboxymethylcellulose (SCMC), poloxamer 407, hydroxyethylcellulose, hydroxypropylcellulose, hydroxypropylmethylcellulose, and the mucoadhesive polymer carbopol 934P.
Therapeutic Activity of Apigenin: A Review

Preeti Sen*, Pushpa Prasad, Amit Roy

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Apigenin is a natural Photochemical found in fruits, Vegetables, spices and herbs. Main Important food sources of apigenin as identified to date are parsley and celery. Pure Apigenin is used as a research chemical. Apigenin (5, 7, 4-trihydroxy flavones) belong to the subclass of flavones and is present in very low amount in the human diet. This compound aspect like bioavailability distribution or excretion in human. They are compound according to their substituent into flavanols (Kaempferol and quercetin), anthocyanins, flavones, and flavonones chalcones. Natural plant constituents can be content from any part of the plant like, bark, leaves, flowers, roots, fruits, seeds etc. Natural plant are different part contain the active compound. Various plants belong to the different families, which number of compound such as alkaloids, tannins, saponin, di and tri-terpenoids etc. Out of there are apigenin, A flavonid found in many plants like, Acacia Arabica, Bombax ceiba, Cuseuta reflexa roxb, Daucus carota linn, Hovenia dulcis, Holostemma adakodien, Phyanthus ginseng, primula denticulate, Digitalis purpurea linn, Gingko biloba ,Camellia sinensis linn, Ocimum spicata linn. The apigenin contained plants are used for the treatment of different diseases and infection like diabetes, dysentery, hepatitis, blennorrhagia, cancer arthritis, inflammation, woods, hemorrhoids and leishmanial ulcers.
Cardiac Arrhythmias: Diagnosis, Symptoms, and different Treatments approaches

Arvind Kumar, Dr. Trilochan Satapathy, Amit Roy

Columbia institute of pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Cardiac arrhythmia, also known as cardiac dysrhythmia, The cardiac arrhythmia is characterized by irregular rhythm of heartbeat which could be either too slow (<60 beats/min) called bradycardia or too fast (>100 beats/min) known as tachycardia and can happen at any age. The use of pacemaker and defibrillators devices has been suggested for heart arrhythmias patients. The antiarrhythmic medications have been reported for the treatment of cardiac arrhythmias or irregular heartbeats. There are four main types of arrhythmia: extra beats, supraventricular tachycardias, ventricular arrhythmias, and bradyarrhythmias. While most types of arrhythmia are not serious, some predispose a person to complications such as stroke or heart failure. Others may result in cardiac arrest. The diagnosis, symptoms, and treatments of cardiac arrhythmias as well as the radiofrequency ablation, tachycardia, Brugada syndrome, arterial fibrillation, and recent research on the genetics of cardiac arrhythmias have been described here. Arrhythmias are due to problems with the electrical conduction system of the heart.
Chicoric Acid: Review on A New Entity

Kamlesh Kumar Sahu*, Preeti Sen, Pushpa Prasad, Amit Roy

Columbia Institute of Pharmacy, Tekari, near vidhan sabha, Raipur, Chhattisgarh (INDIA), 493111

Email: Kamlesh422@gmail.com

ABSTRACT

Chicoric acid was first identified in 1958, plants from at least 63 genera and species have been found to contain chicoric acid. Detrital and living leaves of the tropical seagrass Syringodium filiforme Kutz. were screened for their phenolic contents. For the first time, the major polyphenols were identified, as chicoric acid (CA) and caftaric acid (CAF), by means of NMR and LC/MS. Caffeic acid and chlorogenic acid have been described. A natural chicoric acid purified and extract from Cichorium intybus root has been shown to increase insulin secretion by pancreatic β-cells and glucose uptake by muscle cells and it’s an antioxidant molecule that stimulates AMP kinase pathway in L6 Myotubes, a hypoglycemic agent from Ocimum gratissimum and these drug has been found to be one of the most potent HIV-I integrase inhibitor. In case of oral intake of chicoric acid reduce acute alcohol induced hepatic steatosis.
Fungus: *Candida Albicans* Pathogenicity Mechanisms

Chitrasen Verma*, Ananta Choudhury, Amit Roy

Columbia Institute of Pharmacy, Tekari, Near Vidhansabha, Raipur (C.G)

ABSTRACT

The polymorphic fungus *Candida albicans* is a member of the normal human microbiome. In most individuals, *Candida albicans* resides as a lifelong, harmless commensally. Under certain conditions, however, *Candida albicans* can cause infections that range from superficial infections of the skin to life-threatening systemic infections. Several factors and activities have been identified which contribute to the pathogenic potential of this fungus. Among them are molecules which mediate adhesion to and attack into host cells, the secretion of hydrolys, the yeast-to-hypha transition, contact sensing and thigmotropism, bio-film formation, phenotypic switching and a range of strength attributes. Our understanding of when and how these mechanisms and factors contribute to infection has significantly increased during the last years. In addition, novel virulence mechanisms have recently been discovered.
Food Poisoning—Causes, Symptoms, Diagnosis and Remedies

Debjit Bhownik*

Himachal Institute of Pharmaceutical Education and Research
Nadaun, Hamirpur, Himachal Pradesh

ABSTRACT

Food poisoning occurs when you swallow food or water that contains bacteria, parasites, viruses, or toxins made by these germs. Most cases of food poisoning are from common bacteria such as Staphylococcus or E. coli. Food poisoning, also known as acute gastroenteritis, is an acute inflammation of the lining of the stomach and small bowel. Food poisoning is a common, usually mild, but sometimes deadly illness that occur suddenly (within 48 hours) after consuming a contaminated food or drink. Most of the common contaminants cause nausea, vomiting, diarrhea, and abdominal cramping. Depending on the contaminant, fever and chills, bloody stools, dehydration, and nervous system damage may follow. Food poisoning comes from eating foods that contain germs like bad bacteria or toxins, which are poisonous substances. Bacteria are all around us, so mild cases of food poisoning are common.
Diabetes Treatment: Traditional Medicinal Plants

Chunendra Kumar*, Dr. Ravindra Kumar Pandey

Columbia institute of pharmacy, Tekari, Near Vidhansabha, Raipur (C.G.), 493111

ABSTRACT

Diabetes mellitus (DM) is a group of metabolic disorder characterized by hyperglycemia, which is associated with abnormalities in carbohydrate, fat and protein metabolism result in chronic complications. The main objective of the study to presenting the medicinal plants used in India for anti-diabetic purposes. Traditionally most of the plants show promising anti-diabetic activity. Whole plant and parts of the plant such as bark, leaf, fruit etc. are being used by the ethnic community to cure diabetes. In compares to the other parts of the plant the leaves are the mostly used by the traditional people as anti-diabetic purposes of the different plant. The article summarize the significance of medicinal plants that are used in north-east India as anti-diabetic purposes and the requisite level of activity as well as toxicity would be considered for further scrutiny to develop the potential drug molecules.
Treatment of Diabetes

Nasreen Siddiqui, Suraj Kashyap, Suman Sahu, Suman Patel

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Diabetes is a chronic disease in which body does not produce or properly use insulin. Two types of diabetes occur: Type 1 which is insulin depended and other is insulin independent. Approx 180 medicines available to treat type-1 and type-2 diabetes including 128 for diabetes and 52 for diabetes related conditions. A medicines that improve glucose-dependent insulin secretion, medicine design to inhibit enzyme linked to diabetic neuropathy, stimulate and enhance the generation of insulin producing cell. Three drugs are DPP-4 inhibiter class sigaliptin, saxagliptin, vildagliptin and two others are lingaliptin and alogliptin. DPP – 4 inhibiter inhibit the DPP – 4 enzymes which are responsible for inactivation of GLP – 1 and GLP. Result in the increasing of insulin and decreasing glucogen secretion.
Liposome: A Novel Drug Delivery System

Rameshwar Sahu*

Columbia Institute of Pharmacy, Near Vidhan Sabha Tekari, Raipur (C.G.) 493111

Email: rameshwarsahu5@gmail.com

ABSTRACT

Liposomes are sphere-shaped vesicles consisting of one or more phospholipids bilayers. Liposomes characterize an advanced technology to deliver active molecules to the site of action. One or more of these should prove to be a medically useful and commercially viable product within the next few years. Liposomes are simple microscopic vesicle in which an aqueous volume is entirely enclosed by a membrane composed of lipid molecules. The drug molecules can either be encapsulated in aqueous or intercalated into the lipid bilayers. Liposomes have been widely investigated since 1970 as drug carriers for improving the delivery of therapeutic agents to specific sites in the body. Liposomes, which are biodegradable and essentially non-toxic vehicles, can encapsulate both hydrophilic and hydrophobic materials, and are utilized as drug carriers in drug delivery systems.
Liposome in Cancer Therapy: A Review

Narendra Kumar Sahu*, Suman Saha, Amit Roy

Columbia Institute of Pharmacy, Tekari, Near Vidhan Sabha, Raipur, (C.G)

ABSTRACT

A liposome is a tiny bubble (vesicle), made out of the same material as a cell membrane. Liposomes can be filled with drugs, and used to deliver drugs for cancer and other diseases. The name liposome is derived from two Greek words: 'Lipos' meaning fat and 'Soma' meaning body. Structurally, liposomes are concentric bleeder vesicles in which an aqueous volume is entirely enclosed by a membraneous lipid bilayer. Liposomes have long been recognized as drug delivery vehicles for chemotherapeutics since they were first described in the 1960s. They are well suited for this purpose as they can accommodate both hydrophilic and hydrophobic drugs by storing them either in their internal aqueous core or their phospholipid bilayer, respectively. A significant challenge in the treatment of cancer involving chemotherapy is the efficient delivery of cytotoxic agents to tumor tissue while at the same time minimizing the undesired negative side effects associated with these drugs. The use of drug delivery systems (DDSs) such as liposomes can alter drug pharmacokinetics and biodistribution in a manner that improves the overall pharmacological properties of commonly used chemotherapeutics. Drug delivery systems offer the potential to enhance the therapeutic index of anticancer agents, either by increasing the drug concentration in tumor cells and/or by decreasing the exposure in normal host tissues.
Molecular Mechanism: Necrosis of Pancreatic $\beta$-cell in Type-1 And Type-2 Diabetes

Tupendra Kumar Sen*, S. Prakash Rao, Vijay Singh, Amit Roy

Columbia Institute of Pharmacy, Tekari, Near Vidhansabha, Raipur

ABSTRACT

Type 1 and type 2 diabetes are characterized by progressive $\beta$-cell failure. Apoptosis is probably the main form of $\beta$-cell death in both forms of the disease. It has been suggested that the mechanisms leading to nutrient and cytokine induced $\beta$-cell death in type 2 and type 1 diabetes, respectively, share the activation of a final common pathway involving interleukin (IL)1$\beta$, nuclear factor (NF)$\kappa$B, and Fas. We review herein the similarities and differences between the mechanisms of $\beta$-cell death in type 1 and type 2 diabetes. In the insulitis lesion in type 1 diabetes, invading immune cells produce cytokines, such as IL1$\beta$, tumor necrosis factor (TNF)$\alpha$, and interferon (IFN)$\gamma$. IL1$\beta$ and/or TNF$\alpha$ plus IFN$\gamma$ induce $\beta$-cell apoptosis via the activation of $\beta$-cell gene networks under the control of the transcription factors NFkB and STAT1. NFkB activation leads to production of nitric oxide (NO) and chemokines and depletion of endoplasmic reticulum (ER) calcium. The execution of $\beta$-cell death occurs through activation of mitogen activated protein kinases, via triggering of ER stress and by the release of mitochondrial death signals. Chronic exposure to elevated levels of glucose and free fatty acids (FFAs) causes $\beta$-cell dysfunction and may induce $\beta$-cell apoptosis in type 2 diabetes. Exposure to high glucose has dual effects, triggering initially “glucose hyper sensitization” and later apoptosis, via different mechanisms. High glucose, however, does not induce or activate IL1$\beta$, NFkB, or inducible nitric oxide synthase in rat or human $\beta$-cells in vitro or in vivo in Psammomys obesus. FFAs may cause $\beta$-cell apoptosis via ER stress, which is NFkB and NO independent. Thus, cytokines and nutrients trigger $\beta$-cell death by fundamentally different mechanisms, namely an NFkB–dependent mechanism that culminates in caspase 3 activation for cytokines and an NFkB–independent mechanism for nutrients. This argues against a unifying hypothesis for the mechanisms of $\beta$-cell death in type 1 and type 2 diabetes and suggests that different approaches will be required to prevent $\beta$-cell death in type 1 and type 2 diabetes.
Formulation and Characterization of Sustained Release Tablets of Glimepiride by Using Synthetic and Natural Polymers

Mukesh katakwar*

Columbia Institute of pharmacy, Tekari, Raipur, Chhattisgarh, India

Email: mukeshkatakwar03@gmail.com

ABSTRACT

The present research work was aimed to develop matrix tablets of Glimepiride with Aloe barbadensis miller leaves mucilage and Povidone and to study its functionality as a matrix forming agent for sustained release tablet formulations. Physicochemical properties of dried powdered of guargum and HPMC tablet blend were studied. They found to have better satisfactory physicochemical properties with low SD values. The swelling behavior and release rate characteristics were studied. The dissolution study proved that the dried Aloe barbadensis miller mucilage and Povidone combination can be used as a matrix forming material for making Sustained release matrix tablets.
Solubility Enhancement and Factor Affecting Solubilization

Mukesh Katakwar*

Columbia Institute of pharmacy, Tekari, Raipur, Chhattisgarh, India

Email: mukeshkatakwar03@gmail.com

ABSTRACT

Solubility is the phenomenon of dissolution of solid in liquid phase to give a homogenous system. Solubility is one of the important parameter to achieve desired concentration of drug in systemic circulation for pharmacological response to be shown. Poorly water soluble drugs often require high doses in order to reach therapeutic plasma concentrations after oral administration. Low aqueous solubility is the major problem encountered with formulation development of new chemical entities. Any drug to be absorbed must be present in the form of an aqueous solution at the site of absorption. Water is the solvent of choice for liquid pharmaceutical formulations. Most of drugs weakly acidic and weakly basic with poor aqueous solubility. Hence various techniques are used for the improvement of the solubility of poorly water-soluble drugs include micronization, chemical modification, pH adjustment, solid dispersion, complexation, co-solvency, micellar solubilization, hydrotropy etc. The purpose of this review article is to describe the techniques of solubilization for the attainment of effective absorption and improved bioavailability.
Current Challenges and Factors Affecting Production Planning and Control in Pharmaceutical Industry

Omesh Kumar Soni*, Pushpendra Singh Verma, Rajkumar Tiwari, Ananta Choudhury
Prof. Amit Roy

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Production planning & control is an important aspect & separate department for any production oriented pharmaceutical industry. The basic objective of the manufacturing organization is to make the products. Thus the production is the nucleus or the centre of entire business operations. It must be emphasized, however that on signal system of forecasting preplanning planning and control is suited to all industrial enterprises, no matter how well it may meet the needs of this on that special company. PPC comprises of the planning, routing, dispatching in the manufacturing processes so that the movement of material, performance of machines and operation of labor will contribute to quantity, quality, time and place. Planning and control are two basics and interrelated managerial function. They are so interrelated that they can be and often are considered is being one function. Planning is the preparation activity while control is the post-operation function. Both of them are so closely related that they are treated as Siamese twins. Planning sets the objective, goal, targets on the basis of available resources with their constraints control is the integral part of effective planning similarly control involves assessment can be made effectively only when some standard are set in advance. Planning involves setting up to such standard and deviations are ascertained and analyzed.
Oral Controlled Drug Delivery System

Bhupendra Pradhan*, Suman Saha, Amit Roy

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Oral drug delivery is the most preferred and convenient route for controlled delivery of drug that provides maximum active surface area among all the drug delivery system for administration of various drugs. Usually conventional dosage form produces wide range of fluctuation in drug concentration in the bloodstream and tissues with consequent undesirable toxicity and poor efficiency. The maintenance of concentration of drug in plasma within therapeutic index is very critical for effective treatment. These factors as well as factors such as repetitive dosing and unpredictable absorption lead to the concept of oral controlled release drug delivery systems. Controlled release drug delivery system works on many different mechanisms to control the rate of release of drugs. Various mechanisms like osmotic pressure, matrix system, reservoir system, altered density system etc. have been utilized as formulation approaches.
Helicobacter Pylori and Peptic Ulcer

Monika Keshri*, Nitu Patel, Ram Kumar Sahu, Amit Roy

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Peptic ulcer disease can have a major impact on quality of life and on the utilization of the health system. Understanding the causative roles of Helicobacter pylori and non-steroidal anti-inflammatory drugs has led to changes in management of the disease. Helicobacter pylori are a spiral-shaped bacterium that is found in the gastric mucous layer or adherent to the epithelial lining of the stomach. H. pylori cause more than 90% of duodenal ulcers and up to 80% of gastric ulcers. Infected persons have a 2- to 6-fold increased risk of developing gastric cancer and mucosal associated-lymphoid-type (MALT) lymphoma compared with their uninfected counterparts. The role of H. pylori in non-ulcer dyspepsia remains unclear. Therapy for H. pylori infection consists of 10 days to 2 weeks of one or two effective antibiotics, such as amoxicillin, tetracycline, metronidazole, or clarithromycin, plus either ranitidine bismuth citrate, bismuth subsalicylate, or a proton pump inhibitor. Acid suppression by the H2 blocker or proton pump inhibitor in conjunction with the antibiotics helps alleviate ulcer-related symptoms (i.e., abdominal pain, nausea), helps heal gastric mucosal inflammation, and may enhance efficacy of the antibiotics against H. pylori at the gastric mucosal surface.
A Potential Drug Development and Delivery System: Polymeric Micelles

Shubham Chaturvedi*, Ram Kumar Sahu, Amit Roy

Columbia Institute of Pharmacy, Tekari, Near Vidhansabha Raipur 493111

ABSTRACT

Oral administration is the most commonly used and readily acceptable form of drug delivery system, however, it is finding that many drugs are difficult to attain enough bioavailability when administered via this route. Polymeric micelles (PMs) can overcome some limitations of the oral delivery acting as carriers able to enhance drug absorption, by providing protection of the loaded drug from the harsh environment of the GI tract, release of the drug in a controlled manner at target sites, prolongation of the residence time in the gut by mucoadhesion, and inhibition of efflux pumps to improve the drug accumulation. To explain the mechanisms for enhancement of oral bioavailability, we discussed the special stability of Polymeric Micelles, the controlled release properties of pH-sensitive Polymeric Micelles, the prolongation of residence time with mucoadhesive polymeric micelles, and the P-glycoprotein’s inhibitors commonly used in Polymeric Micelles, respectively. These factors make polymeric micelles appears to be a viable option for a promising drug delivery. Polymeric micelles are used as a method for oral delivery of poorly water-soluble drugs.
Antioxidant Prevent To the Drug Induce Lipid Peroxidation

Pooja Tiwari*, Bibhas Pandit

Columbia Institute of Pharmacy, Tekari near Vidhansabha, Raipur, C.G-493111, India

Email:tiwaripuja239@gmail.com

ABSTRACT

Non-steroidal anti-inflammatory drug (NSAIDs) are general in reduce pain, pyrexia and inflammation, in patients with rheumatoid arthritis and osteoarthritis. As these drug are Affined with high rate of gastrointestinal ulceration, bleeding and kidney damage which can be associated with lipid Peroxidation, The study was aimed to observe lipid Peroxidation stimulation capacity of NSAIDs (diclofenac sodium, ibuprofen, flurbiprofen, paracetamol, nimesulide, celecoxib and Indomethacin) by determining 4-hydroxy-2-nonenal (4-HNE) focus as an index of lipid Peroxidation and to see the Inhibition potential of ascorbic acid on NSAID induced lipid Peroxidation. The result reported the diclofenac sodium, ibuprofen, flurbiprofen, paracetamol, nimesulide, celecoxib, attempted soft antioxidant activity. Indomethacin extracts statistically important increase in 4-HNE content, representing statistically important Peroxidation activity. Ascorbic acid can a lot decrease indomethacin-induced lipid Peroxidation.
Nanotechnology Applications in Cosmetic Preparations

Rajni Yadav*, Ram Sahu, Pushpa Prasad, Amit Roy

Columbia Institute of Pharmacy, Tekari 492111

Email: rajniyadav303@gmail.com

ABSTRACT

Nanotechnology represents one of the most advance technologies of the 21st century. Recently the nanotechnology has great importance across various streams of science, from electronics to medicine and now found a lot of applications in the field of cosmetics under the name of nanocosmetics. Depending on physicochemical properties of the compound, different pathways of penetration across the skin have been recognized that are intercellular, trans-cellular, and transappendageal like through hair follicles and sweat glands. Number of factors that influence the dermal absorption of nanoparticles can be divided into three groups as location and skin conditions at the application site, physicochemical properties of the penetrating molecule, and physicochemical properties of the vehicle dispersing the penetrating molecule. Cosmetic manufacturers use nano scale versions of ingredients to provide better UV protection, deeper skin penetration, long-lasting effects, increased color and finish quality etc, this widespread use of nanoscale materials in cosmetics is due to the fact that these nanoparticles obtain newer properties which differ from the large-scale particles. These altered properties include color, transparency, solubility and chemical reactivity, making the nanomaterials attractive to the cosmetics and personal care industries The different types of nanomaterials employed in cosmetics include Nanoemulsions, nanosomes, liposomes, solid lipid nanoparticles etc. this review emphasis mainly on the types of nanomaterials used in cosmetics by the various cosmetic brands, their potential risks to human life and also to the environment and what all regulations have been undertaken or can be taken to overcome them.
Role of Phytoconstituents for Diabetes Management

Onkar Prasad Sahu*, Ram Kumar Sahu, Amit Roy

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Diabetes mellitus is characterized by elevated plasma glucose concentrations resulting from insufficient insulin. Diabetes is a disorder of carbohydrate, fat and protein metabolism attributed to diminished production of insulin or mounting resistance to its action. The herbal drugs with antidiabetic activity are extensively formulated commercially because of easy availability, affordability and less side effects as compared to the synthetic antidiabetic drugs. Antidiabetic herbal formulations (AHF) are considered to be more effective for the management of diabetes. Herbal treatments for diabetes have been used in patients with insulin-dependent and non-insulin-dependent diabetes, diabetic retinopathy, diabetic peripheral neuropathy, etc. Herbal drugs used and provide a list of medicinal herb used in ayurveda as antidiabetic and also of marketed preparations for prevention of diabetes mellitus, especially in India. Some of herbal drugs with proven antidiabetic and related beneficial effects used in treatment of diabetes are as follows Dioscorea opposite, Gymnema sylvestre, Momordica charantia, Syzygium cumini, Azadirachta Indica, Pterocarpus marsupium, Asparagus racemosus, Boerhavia diffusa, Tinospora cardifolia, Swertia chirata, Phyllanthus amarus, Berberis aristata, Aloe vera, Commiphora wightii, shilajeet, Piper nigrum, Ocimum sanctum, Curcuma longa etc.
Role of Stem Cells in Auto Immune Disorders

Snigdha Tiwari
Sunder Deep Pharmacy College, Ghaziabad
Email: snigdha2112@gmail.com

ABSTRACT

An autoimmune disorder occurs when the body’s immune system attacks and destroys healthy body tissue by mistake, while the white blood cells in the body’s immune system can’t protect against this harmful substances, e.g. toxins, cancer cells, bacteria, viruses, and blood and tissue from outside the body. The immune system control mechanism produces antibodies enable to destroy the antigens contained to these harmful substances but in the presence of an autoimmune disorder the immune system does not distinguish between healthy tissue and antigens and intrigue a reaction that destroys normal tissues. Since the discovery of stem cells in early 1960s, have changed the perception of human body and revotionalised medical research and improved the understanding of how the human body develops and repairs itself. The adipose derived stem cells (ADSC’s) are an exceptionally rich source of mesenchymal stem cell. Originated in stromal vascular fraction (SVF), a protein rich segment from processed adipose tissue. SVF contains a mononuclear cell line (autologous mesenchymal stem cells), endothelial cells, red blood cells, macrophage cells, and important growth factors that facilitate the stem cell process and promote their activity. Unfortunately, not all autoimmune disorders respond to stem cell therapy, and each patient must be assessed individually to determine the potential for optimal results from this regenerative medicine process. Mammalian stem cells have different classes but embryonic stem cells are highly flexible and pluripotent that have capability to differentiate into all cell types of human body, including immune response tissues. So in conclusion stem cells have lasting treatment for auto immune disorders.
Role of Metabolizing Enzyme Inhibitors in Diabetes

Roshni Sahu*, S. Prakash Rao, Amit Roy

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABS TRACT

Diabetes mellitus is a complex metabolic syndrome or carbohydrate metabolism of endocrine system with an absolute or relative deficiency of insulin resulting in disturbance of intermediary metabolism and manifestations. Enzyme inhibitors have potential value in many areas of disease control and treatment. The control of kinetics of carbohydrate digestion and monosaccharide absorption could be of value in the prevention and control of conditions such as diabetes, obesity, hyper-lipoproteinaemia and hyperlipidaemia. The inhibition of carbohydrate metabolizing enzymes such as α-amylase, α-glucosidase, sucrase in the digestion tracts. Inhibitors of these enzymes delay the carbohydrate digestion and prolongs the overall carbohydrate digestion time, causing a reduction in the rate of glucose absorption. α-amylase and α-glucosidase inhibitors are used to achieve greater control over hyperglycemia in type 2 diabetes mellitus. These inhibitors are the potential targets in the development of lead compounds for the treatment of diabetes.
Garlic Act as Nutraceuticals-A Review

Satish.S.Meshram
Kamla Nehru College of pharmacy Butibori, Nagpur-441108
Email: satish.meshram@gmail.com

ABSTRACT

The concept of generating utility of food as health promoting factor beyond its nutritional value is gaining acceptance within community. The nutraceutical have gained from the link between food and health .Nutraceutical act as a food as well as health product which containing nutritional value. We focused on the household remedies like Garlic for different food supplement along with their medicinal use. Garlic, *Allium sativum* (family Liliaceae), has been associated with humans and their food since ancient times. It is grown and used as food and medicine in all climatic region of the world. Garlic contains Carbohydrate (31 %), proteins (5-6%), fat (0.2%) and high amounts of phosphorus, potassium and calcium. Garlic contains a sulphur based compound allicin. Garlic reduces serum lipid levels because which reduces the level of lipogenesis and breakdown of lipids. It increases the HDL (High density Lipoproteins) and reduces LDL (Low Density Lipoproteins).Overall garlic is used to treat the atherosclerosis and platelet aggregation. Allicin from Garlic shows antibiotic activity against tuberculosis, amoebic dysentery and parasites like tapeworm and hook worm. Garlic exerts strong antioxidants properties as well as immunomodulators.
Combinatorial Chemistry New Approach for Industry–Academic Partnerships

Tapas Panigrahi*

Royal College of Pharmacy, Raipur, (C.G)

Email: panigrahi.tapas@gmail.com

ABSTRACT

The re-focusing of pharmaceutical industry research away from early discovery activities is stimulating the development of novel models of drug discovery, notably involving academia as a front end. The drug discovery industry is facing considerable challenges due to increasing costs, decreasing productivity and attrition of projects as they progress through the development process. Combinatorial chemistry is one of the new techniques developed in pharmaceutical industries to reduce the time and cost associated with producing effective and competitive new drugs. It is used to create a large population of structurally different molecules called chemical libraries in a short time that can be screened in one time against a variety of targets by high throughout screening or used for pharmacological assay. This review article emphasize on different method of combinatorial chemistry and its advantage.
Transdermal Drug Delivery System

Dugesh Kumar*

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Transdermal therapeutic system is defined as self contained, discrete dosage form which when applied to the intact skin; deliver the drug(s), through the skin, at controlled rate to the systemic circulation. Depending on the therapeutic target, transdermal drug delivery systems (TDDS) are designed to provide a continuous supply drug through the skin to allow for local or systemic drug effects. Transdermal drug delivery system (TDDS) is a novel approach for delivering drugs across the skin. Transdermal drug delivery possesses superior advantages over other routes of administration, particularly minimizing first-pass metabolism. The human skin is a readily accessible surface for drug delivery. Over the past three decades, developing controlled drug deliver has become increasingly important in the pharmaceutical industry.
Treatment of Diabetic: Allopathic and Ayurvedic Drugs

Ranjita Halder*, Amit Roy

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

A disease in which the body does not produce or properly use insulin. Diabetes is a chronic metabolic disorder characterized by elevates plasma glucose concentration that disturb in the carbohydrate, fat & protein metabolism. The recently available antidiabetic drugs manage the plasma glucose levels under normal range by supplementing insulin, improving insulin resistance, increasing insulin secretion from the pancreatic β-cell, decreasing glucose absorption from the intestinal tract. Insulin causes cells in the liver, muscle, and fat tissue to take up glucose from the blood, storing it as glycogen in the liver and muscle cells. Diabetic also treated with oral hypoglycemic drug (Sulfonylurea, Thiazolidinediones, Biguanides, α-Glucosidase Inhibitor,). Herbal medicine is the oldest form of healthcare. Many research and investigation of oral anti-hyperglycemic agents of natural plant origin were used in traditional medicine have been studied (Abroma augusta Linn., Acacia Catechu, Berbaris ariatata, Cassia auriculata, Embellica officinalis Gaertn., Glycerhiza glabra Linn., Mangifera indica Linn., Salacia oblonga, Vinca rosea etc.) and many of them have been found to possess the positive activity. There are several plants known for their antidiabetic activity, with different mode of action and phyto-constituents. WHO report 80% of the world population relies on the drug from natural origin. Allopathic drugs used for the treatment of diabetes have their own side effect and adverse effect. So, herbal drugs are a great choice then allopathic drugs, which having more or less or no side effect and adverse effects.
Antioxidants: - It’s medicinal and Pharmacological applications

Vikram Pratap, Vikas Sen, Devnarayan
Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111
Email: vikrammanhar71@gmail.com

ABSTRACT

Antioxidants are essential and important for plants and animals’ sustenance. They are substances that protect cells from the damage caused by unstable molecules known as free radicals. The sources and origin of antioxidants which include fruits and vegetables, meats, poultry and fish were treated in this study. The types of antioxidants such as ascorbic acid, glutathione, melatonin, tocopherols and tocotrienols were reported. The classification and characteristics of antioxidant; its measurements and level in food and free radicals were also documented. The Chemistry of antioxidants which include chain reactions, molecular structures, food antioxidants and reaction mechanisms, bio-chemical activity and effects of antioxidants were also reviewed. Further, the medicinal applications, pharmacological effects, therapeutic properties and future choice of antioxidants were reported in this abstract.
Dietary Supplements Have Beneficial Health Effects in Industrialized Nation.

Yogesh Kumar Sahu * Roshan Lal Sahu Vishvajeet Vishwas Madhu Sahu

Columbia Institute of Pharmacy, Tekari, Raipur (C.G.) 493111

ABSTRACT

Dietary supplements are regularly used by at least half of the American population, yet the health benefits of these agents are unclear. The term "dietary supplement" is defined in section 201(ff) of the Federal Food, Drug, and Cosmetic Act (the Act) as a product (other than tobacco), intended to supplement the diet, that bears or contains one or more of the following dietary ingredients such as Vitamin , Mineral Herb , or other botanical Amino acid. The dietary supplement study was classified as non-beneficial, beneficial or harmful according to whether the end-point of interest reached statistical significance. With the possible exceptions of Vitamin D and omega-3 fatty acids. Dietary supplement used in daily life and live a healthy life.
Tissue Culture Technique

Jitendra Sahu*, Hemant Sahu, Khilendra Sahu

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Medicinal plants have been the subject of man’s curiosity since the time of human survival. A considerable majority of people of the world’s population still rely on the traditional medicine for their primary health care necessities. Currently demand of herbal medicines has been enhanced; and it is very difficult to fulfill the demand from field plants. Hence, in vitro propagation of plant by tissue culture can be used to fulfill the requirement of medicinal plants. The techniques applied in tissue culture are expensive; hence we try to summarize the data for low cost method for in vitro micropropagation of plant through tissue culture technique. This can help the scholar working in developing of tissue culture methods for in vitro propagation of medicinal plant.
A Review on Drug Abuse and Addiction

Ashendra kumar*, Deepa Dehari

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

Email: ashendrakumar11@gmail.com

ABSTRACT

Drug abuse is an intense desire to use increasing amount of a particular drug Substance or substance to exclusion of other activities. Drug addiction is a complex illness. It is defined as chronic, relapsing brain disease that is characterized by compulsive drug seeking and use, despite harmful consequences. Drug addicted people loss their control of their drug use. In addition to the function and anatomical changes in brain, drug abuse put the people take higher risk for the other health problem. Some specific drug which are available for the treatment of alcohol addiction like disulfiram and some other pharmaceutical preparation. The purpose of the present study is too aware and prevents people from drug addiction. People often underestimate is the complexity of drug addiction…that is a disease that impacts the brain, and because of that, stopping drug abuse is not a simply matter of willpower. We have to treat it by scientific method as well as public awareness and transmit its knowledge on to society. Drug addiction can successfully treat to help people stop abusing drug and resume productive lives.
Recent Advances in Parenterals

Himani Thakur*

Columbia Institute of Pharmacy, Tekari, Raipur, Chhattisgarh, India

ABSTRACT

Parenteral drug delivery systems are the preparations that are given other than oral route. (Parenteral, enteral). The Parenteral administration route is the most common and efficient for delivery of active drug substances with poor bio-availability and the drugs with a narrow therapeutic index. Parenteral route which is effective one in case of unconsciousness, nausea, in emergency clinical episodes. To maintain a therapeutic effective concentration of the drug, it requires frequent injections which ultimately lead to patient discomfort. But parenteral route offers rapid onset of action with rapid declines of systemic drug level. So to provide a targeted and sustained release of drug in predictable manner major progress has been done in the field of formulation technologies. Parenteral formulations by intravascular route offer exclusive opportunity for direct access to the bloodstream and rapid onset of drug action as well as target to specific organ and tissue sites. This article, shows applications of injectables, implants and infusion devices over other routes of administration.
Microemulsion systems: A strategy for transdermal drug delivery

Urmila *, Shashikant Chandrakar

Columbia institute of pharmacy, Tekari, Near Vidhansabha Raipur, C.G

ABSTRACT

Microemulsion is a clear, thermodynamically stable, isotropic dispersion mixture consisting of oil, water, surfactant and co-surfactant, which has typically a droplet diameter of approximately 100 nm or less. Formulations based on microemulsions have several interesting characteristics i.e. enhanced drug solubilization, good stability, and ease of manufacturing. Although microemulsion can be used to deliver drugs via several routes; the system has been extensively studied as vehicle for topical and transdermal administration. In topical and transdermal formulations, microemulsions have been proved to increase the cutaneous absorption of both lipophilic and hydrophilic API.s when compared to conventional vehicles Microemulsions that is spontaneously formed by combining appropriate amounts of a lipophilic and a hydrophilic ingredient, as well as a surfactant and co-surfactant can be used. Due to their special features, microemulsions offer several advantages for pharmaceutical use, such as ease of preparation, long-term stability, high solubilization capacity for hydrophilic and lipophilic drugs, and improved drug delivery.
Anthelmintic and Antioxidant activity Of *Solanumnigrum* Linn. Leaf Extract- *In-Vitro* evaluation

Adeep Kujur*

University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, India 492010

Email: kujur.alex9@gmail.com

**ABSTRACT**

The present study was aimed to investigate anthelmintic and antioxidant activity of the leave extracts of *Solanumnigrum* Linn (Family: Solanaceae). It is commonly found throughout Indian plains from seashore to hills up to 1000m high. The leaves were collected, shade dried and extracted with water (5% chloroform water) and with ethanol using Soxhlet extractor. The *in vitro* anthelmintic assay of aqueous (AESN) and ethanolic (EESN) extracts of *Solanumnigrum* Linn was carried out on *Pheretimaposthuma* (Indian earth worm). The observation showed that EESN gave shorter paralysis and death time at 100 mg/mL as compared to AESN. Mean±SEM values were calculated for both extract and standard. EESN showed anthelmintic activity in a dose-dependent manner taking shortest time for paralysis (35.44±0.11) and death (42.02±0.08) at 100 mg/mL concentration. Also in case of AESN the dose of 100 mg/mL showed shortest time of paralysis (45.02 ±0.07) and death (55.12±0.04). It is observed that all the investigational extracts showed the significant anthelmintic activity (P<0.05) compared to standard drug albendazole. The extracts were also evaluated for antioxidant activity by free radical scavenging assay using DPPH and showed a prominent antioxidant activity but were comparatively lower than standard significantly (P<0.05). Further studies are needed to be done to isolate the active phytoconstituents responsible for bringing the anthelmintic activity against *pharetimaposthuma* and antioxidant activity.
Antifilarial Activity of Butea Monosperma Linn

Saurabh Shrivastava*, Lokesh Kumar, Mukesh Kumar Singh, Bina Gidwani, Anshita Gupta, Chanchal Deep Kaur

Email: saurabhshri1991@gmail.com

ABSTRACT

Currently available antifilarial drugs Diethyl carbamazine, Albendazole and Ivermectin and other combination of drugs are not adequate to completely control the lymphatic filariasis. Hence, there is an urgent requirement for better control and management of the disease. The usage of herbal drugs are popular in now a day as the herbal drugs have less side or toxic effect and more effective as compared to synthetic drugs. In the present study, the antifilarial activity of aqueous extracts of *Butea monosperma* L. Leaves was screened. In *in vitro* experiment, the extracts were tested from concentration range of 50-200 ng/ml for one day incubation, against microfilaria stage of *Brugia malayi* worm. The Butea monosperma extracts showed significant inhibition of motility of microfilariae in dose dependent manner in nano concentration range contributing towards the development novel drug delivery system for treatment of lymphatic filariasis.
Evaluation of Wound Healing Activity of *Acacia Arabica* Extract on *Swiss Albino* Mice

Heena Parwin¹ and Wasim Raja²

¹Department of Biological and Chemical Sciences, MATS, University, Raipur (Chhattisgarh)

²Central Laboratory Facility, Chhattisgarh Council of Science and Technology, Raipur (Chhattisgarh)

**ABSTRACT**

To evaluate in vivo wound healing activity of ointment containing methanolic extract of *Acacia arabica* (Family: *Fabaceae*). The presence of phytochemicals like carbohydrates, phenols, flavonoids, tannins and saponins was determined by preliminary phytochemical screening. Wound healing effect of ointment containing 5% w/w methanolic leaf extract was determined by using excision wound models in Swiss albino mice. The results showed that in formulations possess significant wound healing activity, which was evidenced by decreased period of epithelialization, increased rate of wound contraction, tensile strength, hydroxyproline content, granulation tissue and collagen fiber formation in all treated animals. The activity may be due to presence of phenols, tannins, and flavonoids. The ointment containing methanol extract showed better wound healing activity as compared to control group.
**Hydroxyapatite-Based Nanocomposites for Local Drug Delivery to Periodontal Pockets**

Indu Lata Kanwar* and Preeti K. Suresh

University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur (CG) INDIA

**ABSTRACT**

Hydroxyapatite is chemically similar to the mineral component of bones and hard tissues in mammals. Hydroxyapatite has biocompatibility and bioactivity with human teeth and bone, making it very attractive for biomedical applications. Nanocomposites is a multiphase solid material where one of the phases has one, two or three dimensions of less than 100 nanometres (nm), or structures having nano-scale repeat distances between the different phases that make up the material. Nanostructured calcium phosphate materials play an important role in the formation of hard tissues in nature. It is reported that calcium phosphates materials in nano-size can mimic the dimensions of constituent components of calcified tissues. Nano-sized materials offer improved performances compared with conventional materials due to their large surface-to-volume ratios. The specific biological properties of the nanocomposites, as well as their interaction with cells, including the use of bioactive molecules have found wide applications. The approach of periodontal tissue engineering is considered promising to restore bone defect through the use of engineered materials with the aim that they will prohibit the invasion of fibrous connective tissue and help repair the function during bone regeneration.
Screening Of Anti-Inflammatory Potential of *Berberis Coriaceae* Leaves by HRBC Membrane Stabilization

Kamta Prasad Namdeo*, Neeli Rose Beck

SLT Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur-495001, Chhatisgarh, India

**ABSTRACT**

The present study was undertaken to screened anti-inflammatory activity of alcohol and aqueous extracts of leaves from *Berberis coriaceae* against HRBC membrane stabilization. The prevention of hypotonicity induced HRBC membrane lysis was taken as a measure of the anti-inflammatory activity. Both the extracts showed a biphasic effect on the membrane stabilization. Their activities are comparable to that of the standard drug diclofenac sodium. However their activities decreased with time.
Formulation and Evaluation Of flavonol-Loaded mesoporous Silica Nanoparticles for Skin Cancer

Khusboo Agrawal*, Swarnlata Saraf

University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur

Email: khusboo_agrawal@rediffmail.com

ABSTRACT

Flavonol provides a cellular protection against UV induced oxidative damages due to their excellent free radical scavenging activity and exerts a direct pro-apoptotic effect on tumor cells. However, their topical use is limited due to its poor water solubility, low stability, and short half life. The present study was aimed to evaluate the potential of mesoporous silica nanoparticles as topical carrier system for delivery of flavonols. Complex of flavonol with mesoporous silica was prepared with different weight ratios and characterized by SEM, X-ray diffraction, high resolution TEM, FT-IR spectroscopy, measurements and differential scanning calorimetry. Epidermal accumulation and transdermal permeation of this molecule were ex vivo evaluated using Franz diffusion cells. The immobilization zeta potential of flavonol in mesoporous silica nanoparticles (MSNs) increased the stability without undermining the antioxidant efficacy.
Hydrogels in Pharmaceutical Formulations

Krishna Yadav

SLT Institute of Pharmaceutical Sciences Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.),
India

Email: ky8264@gmail.com

ABSTRACT

Now a day, drug delivery experience several challenges where hydrogel could be one potential answer to those. Hydrogels are presently under investigation as a delivery system for bioactive molecules, because of their similar physical properties as that of living tissue, which is due to their high water content, soft and rubbery consistency, and low interfacial tension with water or biological fluids. This review presents an overview to the advances in hydrogel based drug delivery that have become the interest of most researchers. Recent developments in the field of polymer science and technology has led to the development of various stimuli-sensitive hydrogels like pH, temperature sensitive, which are used for the targeted delivery of drug/proteins to colon, and chemotherapeutic agents to tumors. Recently, controlled and sustained drug delivery has become the standard in modern pharmaceutical design and an intensive research has been undertaken in achieving much better drug product effectiveness, reliability and safety. In this regard, many polymers are very useful with majority of hydrogels, which undergo reversible volume and/or sol-gel phase transitions in response to physiological (temperature, pH and present of ions in organism fluids, blood glucose level) or other external (electric current, light) stimuli.
Floating Drug Delivery System – An Approach to Oral Controlled Drug Delivery

Manish Kumar Rathore, Khushbu Sao, Hitesh Kumar Sahu, Manu Dewangan Raseswar Benarjee

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

The design of oral controlled drug delivery systems (CDDS) should primarily aimed at achieving more predictable and increased bioavailability of drugs. Placing of DDS in specific region of the GIT offers numerous advantages, specially the drugs having narrow absorption window in GIT, primary absorption in the stomach, stability problem in the intestine, poor solubility at alkaline pH, local activity in stomach, and property to degrade in colon. Recent scientific and patent literature has shown increased interest in novel dosage forms that can be retained in the stomach for a prolonged and predictable period of time. GRDFs are designed on the basis of one of the several approaches like formulating low density dosage form that remain buoyant above gastric fluid (Floating Dosage Form) or high density dosage form that is retained at bottom of the stomach, imparting bio-adhesion to the stomach mucosa, reducing motility of the GIT by concomitant administration of drugs or pharmaceutical excipients, expanding the dosage form by swelling or unfolding to a large size which limits the emptying of the dosage form through the polymeric sphincter, utilizing ion-exchange resin which adheres to mucosa, or using modified shape system. This review article focuses on the current technological development in FDDS with special emphasis on its potential for oral controlled drug delivery.
University–Industrial Collaboration: New Models for Drug Discovery

Manmohan S. Jangdey*, Anshita Gupta, Shailendra Saraf and Swarnlata Saraf

University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur (C. G.) 492001, India

ABSTRACT

University – industry collaboration is a vitally important route for technology transfer. Universities are the primary source of highly educated people and a major source of new ideas. Globally, new policies are sought to strengthen the role of universities as core agents of local, regional and national economic development. As a consequence of this role for universities they are under increasing pressure to create more effective technology transfer mechanisms. The indirect support provided by universities for innovation processes is likely to be more important than their direct contributions to problem solving in industry. Indirect support refers to education, training programs, awareness raising conferences and other forms of activity that may shape and direct innovation processes but do not aim to influence them directly. The introduction of an industry-like process and experienced management teams signals a revolution in discovery that benefits society by improving the value gained from publicly funded research. The re-focusing of pharmaceutical industry research away from early discovery activities is stimulating the development of novel models of drug discovery.
Evaluation of Total Phenolic Contents and Free Radical Scavenging Activity of Aqueous Extract of *Orthosiphon Pallidus Royle*

Mukesh K. Singh<sup>1</sup>, Hemant Kumar Dhongade<sup>1</sup>, Dulal Krishna Tripathi<sup>2</sup>

<sup>1</sup>Shri Rawatpura Sarkar Institute of Pharmacy Kumhari, Chhattisgarh Swami Vivekanand Technical University, Bhilai, Chhattisgarh, 491024, India

<sup>2</sup>Rungta College of Pharmaceutical Sciences and Research, Chhattisgarh Swami Vivekanand Technical University, Bhilai, Chhattisgarh, 491024, India

Email: mukeshbiotech09@gmail.com

**ABSTRACT**

*Orthosiphon Pallidus Royle*, belonging to *Laminaceae* family is herbaceous shrub native to South East Asia. It has been different multiple pharmacological activities like fever, influenza, rheumatism, hepatoprotective, edema, cancer, urinary lithiasis etc. The therapeutic importance of plants is mainly attributed to the polyphenols with strong antioxidant properties. In the present study, the antioxidant potency of aqueous extract of *Orthosiphon Pallidus Royle* was investigated using various *in-vitro* model systems such as superoxide, nitric oxide radical, 1,1-diphenyl-2-picrylhydrazyl (DPPH), hydroxyl radical scavenging, metal chelating activity, and reducing power. The total phenolic contents (TPC) were determined by using Folin-Ciocalteu reagent, and the results were expressed in gallic acid equivalent (mg of GAE/g of sample). Aqueous extract of *Orthosiphon Pallidus Royle* showed a significant scavenging activity against hydroxyl and superoxide radicals. Multiple antioxidant activity of aqueous extract of *Orthosiphon Pallidus Royle* was also evident because of its significant reducing power and ferrous ion chelating activity. The results of the present study clearly established the antioxidant potency of aqueous extract of *Orthosiphon Pallidus Royle*. 
A Review On Bioavailability Enhancers of Herbal Origin

Sakshi Tiwari, Sukriti Kaushal, Yukta Verma, Asha Sahu

Columbia Institute of Pharmacy Tekari, Raipur (C.G)

ABSTRACT

Bioenhancers are such agent, which by themselves are not therapeutic entities but when combined it an active drug lead to the potentiation of the pharmacologic effect of the drug. Such formulations have been found to increase the bioavailability/bioeffcacy of a number of drugs even when reduced doses of drugs are present in such formulations. Evidence have been obtained for such classes of drugs which are (a) poorly bioavailable and/or efficacious, (b) require prolonged therapy, and (c) are highly toxic and expensive. These are phytomolecules development of which is based on ancient knowledge of Ayurveda. They augment the bioavailability or biological activity of drug when administered at low doses. They reduce the dose. Shorten the treatment period thus reducing drug resistance problems. The treatment is made cost effective, minimizing drug toxicity and adverse reaction. When used in combination with number of drug classes such as antibiotics, anti tuberculosis, antiviral, antifungal and anticancer us drugs they are quite effective. Oral absorption of vitamins, minerals, herbal extracts, amino acids and other nutrients are improved by them. They act through several mechanisms which may affect mainly absorption process, drug metabolism or action on drug – target.
A Review on Present Treatment of Congestive Heart Failure

Sakshi Tiwari; Divya Sahu; Rakhi Mishra; Sonal Sharma
Columbia Institute of Pharmacy, Tekari, Raipur (C.G)

ABSTRACT

Heart failure is defined as the pathphysiology state in which impaired cardiac function is unable to maintain as adequate circulation for the metabolic needs of the tissue of the body. The term congestive heart failure (CHF) is used for the chronic form of heart failure in which the patient has evidence of congestion of peripheral circulation of lungs. Heart failure may be caused by one of the following factors, like Intrinsic pump failure, Increased work load on the heart or Impaired filling of cardiac chambers. In order to maintain normal cardiac output several compensatory mechanisms play an important role such as compensatory enlargement in the form of cardiac hypertrophy, cardiac dilation or both and Tachycardia due to activation of neurohumoral system. There are many non-pharmacological and pharmacological treatment for CHF. Non–Pharmacological treatment are Low intake of Na+, Regular aerobic exercise; Weight loss, Change in lifestyle. Pharmacological treatment Include Inotropic drug –Digoxin, Diuretics-thiazides, Vasodilation-Nitroprusside, B-blockers- Metoprolol, ACE inhibitors, Aldosterone antagonist-spironolactone, and cardiac Glycoside-Digitalis. The present study shows compilation of various mechanism and treatment available for CHF.
Using Functional Excipients in Designing Dosage Forms

Sanjib Bahadur, Amit Roy

Columbia Institute of Pharmacy, Vill. Tekari, Near Vidhan Sabha, Raipur (CG)

Email: sanjib_pharmacist@yahoo.co.in

ABSTRACT

Drugs, in its pure form, cannot be administered to the patients. It has to be formulated into a suitable dosage form with the help of excipients. The excipients play an important role to serve specific functions and in some instances they directly or indirectly affect the rate of release and absorption of drug. Traditionally, excipients were considered as inert substances that help in maintaining therapeutic efficacy and stability of the formulations. However, in modern pharmaceutical dosage form designing technique/principle, they often fulfil multi-functional roles such as improvement of the stability, release and bioavailability of the active ingredient, enhancement of patient acceptability and performance of technological functions that ensure ease of manufacture. Polymers from both synthetic and natural sources have been investigated extensively for this purpose. However, use of natural polymers for pharmaceutical applications is gaining popularity as they are economical, readily available, non-toxic, and capable of chemical modifications, potentially biodegradable and with few exceptions, also biocompatible. Plant resources are renewable and can be cultivated or harvested in suitable manner so that constant supply of raw material can be maintained. This review work provides a comprehensive detail of functional excipients.
Healing Potential of Gel Containing Extract of Berberis Coriaceae on Excision Wounds in Wistar Rats

Surendra H. Bodakhe, Neeli Rose Beck

SLT Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur-495001, Chhattisgarh, India

ABSTRACT

To investigate the wound healing potency of ethanol and aqueous bark extracts of Berberis coriaceae. Excision wound model was used to evaluate the wound healing activity of both the extracts on wistar rats. The rats were divided into four groups and each group has six rats. The group I was untreated and considered as control group. The group II was treated with soframycin cream and treated as standard group. The group III and group IV were treated with ethanol and aqueous extracts respectively. The extract was applied in the form gel (200 mg of extract incorporated with 100 gm of Carbopol 940 to get 0.2% w/w gel ) daily once times, starting from the excisions of skin from rats, till complete epithelialization. The healing of the wound was assessed by the rate of wound contraction and period of epithelialization. Both the ethanol and aqueous bark extracts promoted the wound healing activity significantly, when compared to the control group of animals. Ethanol extract possess better wound healing property than the aqueous extract.
Liposome: An Update

Yogesh Kumar Sahu*, Suman Saha

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

Email:yksahu18@gmail.com

ABSTRACT

A liposome is a tiny bubble (vesicle), made up of the same material as a cell membrane. Liposomes, sphere-shaped vesicles consisting of one or more phospholipids bilayers. Today, they are a very useful in various scientific disciplines viz. Theoretical physics, biophysics, colloid science, biochemistry, biology and in drug delivery as an opportunity to extend product life. Liposomes are acceptable and superior carriers and have ability to encapsulate hydrophilic and lipophilic drugs and protect them from degradation. Liposomes are micro-particulate lipoidal vesicles which are under extensive investigation as drug carriers for improving the delivery of therapeutic agents. Due to new developments in liposome technology, several liposome-based drug formulations are currently in clinical trial, and recently some of them have been approved for clinical use. Reformulation of drugs in liposomes has provided an opportunity to enhance the therapeutic index of various agents this review discusses the potential applications of liposomes in drug delivery with examples of formulations approved for clinical use, their preparation method, targeting, mechanism of formation, liposome component and the problems associated with further exploitation of this drug delivery system.
Role of Academicians in Herbal Drug Analysis – A Review

Vaibhav Tripathi¹, Surendra Saraf²

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

In today’s medical practice, over 80% of the world population depends on herbal medicines and products for healthy living. This rise in the use of herbal products has also given rise to various forms of abuse and adulteration of the products leading to consumers’ and manufacturers’ disappointment and in some instances fatal consequences. This review attempts to enlighten manufacturer in herbal medicine on the need to establish quality parameters for collection, handling, processing and production of herbal medicine. At present no official standards are available for herbal preparations. Those manufacturers, who are currently doing some testing for their formulations, have their own parameters, many of which are very preliminary in nature. Presently it is very difficult to identify the presence of all the ingredients as claimed in a formulation. In large scale production batch to batch variation starts from the collection of raw material itself in the absence of any reference standard for identification. These variations multiply during storage and further processing. Hence the first important task is to evolve such parameter by which the presence of the entire ingredient can be identified as per the monographs specified in pharmacopoeias. In order to achieve this objective various Analytical methods, microscopic evaluation, foreign matter determination, ash content determination and microbial contamination tests can be performed in collaboration with the academicians.
Review Polymeric Nanosystems: Emerging Multiparticulates for Carcinoma Specific Drug Delivery

Kuldeep Singh Sisodia*, Dr. SK Lanjhiyana

Institute of Pharmaceutical Sciences, Guru Ghasidas Central University, Bilaspur, Chattisgarh, India

ABSTRACT

The objective of this review is to outline current major cancer targets for nanosystem and give insight into the direction of the field. This review aims to explore recent work directed towards more targeted treatment of cancer, whether through more specific anti-cancer agents or through methods of delivery. These areas include delivery by avoiding the reticuloendothelial system, utilizing the enhanced permeability and retention effect and carcinoma-specific targeting. These nano-sized systems like Hydrogels, Micelles, liposome, Nanomaterial formulation, Nanocells, Dendrimers, Nanotubes, Polymersomes, Nano sensors, Quantum dots, XPclad® nanoparticles have small size, customized surface, improved solubility, and multi-functionality of nanoparticles will continue to open many doors and create new biomedical applications. This rapidly growing system requires multiple approaches of development and cross checking results and then further development to ameliorate various issues of drug targetibility. This article highlights brief summary of nanosystems for the “Nanotist” and discusses nanosystem that has shown promising features in targeting colorectal carcinomas via oral route for therapeutic drug bioavailability. To conclude with successful targeted drug delivery, a drug needs to be protected from degradation, release and/or absorption by various factors in body. Genetic basis has to keep in mind as it can reduce toxic effects and drug amount of “anti-oncoceuticals”, which is an important requirement of current therapeutic and treatment system. And for this reason, considering the selective uptake of nano or sub-nanosystem by adenocarcinomaous and inflamed cells/ tissues, a nano-sized formulation is expected to give better pharmacological effect in the colon. This review aims to focus such aspects of nanosystems.
Formulation and Invitro Evaluation of Floating Microsphere

Sandeep Prasad Tiwari*, Lalita Sandey

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

The aim of the present work is to formulate and evaluate the floating microsphere of antihypertensive drug. The main orientation of this research work to study about the floating microsphere of antihypertensive drug for making newly formulation with the help of novel drug delivery system for the future trends of work which release the drug and maintain uniform drug levels over a longer period of time. The main purpose to need of work for prolong gastric retention, improve bioavailability, reduces drug waste and improve solubility for drugs. The floating Microsphere of drug were prepared by Solvent evaporation method sodium alginate and HPMC as rate controlling polymer. The particle size analysis, shape and morphology (SEM AND TEM), zeta potential, percentage yield, entrapment efficiency and drug loading are the characterization of floating microsphere & to study about the invitro evaluation of floating lag time, floating time, dissolution study, resultant weight test and stability studies of physical characterization of floating microsphere such as tapped density, angle of repose, compressibility index, drug intrapment, mean particle size and percentage yield of drug. A small number of floating microsphere in the marketed formulation such as cephalexine, aceclofenac are recently available in the market. The purpose of the research work is to find out the problems encountered during the antihypertensive drug of floating microsphere in the development of novel drug delivery system of the pharmaceutical dosage form. The recent advances of floating microsphere is to approaches of gastric retention of poorly soluble in alkaline ph, primarily absorbed in the stomach and degrade in the colon. In flotable drug delivery system the drug such are used as aspirin grisefulvin, p-nitroanilline, ibuprofen, terfinadine & tranilast. The rationale use of drug is for the taste masking, improve stability, improve, bioavailability, increase solubility, patient compliance, increase therapeutic efficiency and prolonged release. The floating microsphere get better results for the application of reduced fluctuation of drug concentration etc.
Milli- Q [Water Purifier]

Mukesh Tandi, Sameer Sharma, Somash Gupta, Gosiya Mahtab, Sonal Goyal, Arti Tripathi

Columbia Institute of Pharmacy, Tekari, Raipur (C.G)

ABSTRACT

Milli –Q is a trademark created by Millipore corporation to describe ‘ultrapure’ water of “Type 1”, as defined by various authorities (e.g. ISO 3696), as well as their device for producing such water. The purification processes involve successive steps of filtration and deionization to achieve a purity expediently characterized in terms of resistivity. The term is also commonly uses as a genericised trademark to refer to other purified waters and purification equipment. Milli-Q water purifier use resin filters and deionization to purify the water. The system monitors ion concentration by measuring the electrical resistivity of the water. Higher resistivity means fewer charge- carrying ions. Most Milli-Q dispenses the water through a 0.22 µm membrane filter.
ABSTRACT

According to WHO Lymphatic filariasis is a major tropical disease with more than 1.4 billion people in 73 countries worldwide threatened and over 120 million people are currently infected with about 40 million people disfigured. In India 600 million people which are situated in 250 districts of 29 states are affected by this disease. In this disease major complication occur due to adults parasites, present in lymphatic system of host. Presently available drugs are not producing significantly effect on adult parasite and also having various adverse effects. In recent research it proves that plant active constituents of various plants are very safe and effective against adult parasites. Traditional knowledge and practices bring pragmatic intelligence to provide a safer benign and more cost effective platform for newer scaffolds. The proposed work is aimed to evaluate the selected plants phytochemically and to discover their capabilities in management of Lymphatic filariasis and to isolate and identified their markers by using various spectroscopic methods and other novel techniques, which have the potential to treat the disease.
A Review on Anaesthesia

Sandeep Verma*, Renuka Verma, Summit Agrawal, Rohan Nene

Columbia Institute of Pharmacy, Tekari, Raipur (CG)

ABSTRACT

Anesthesia is a condition which leads to the reversible loss of sensation or consciousness. It is low systemic toxic. Effective both injectible and topical form. Non irritating to tissue. Rapid onset of anesthesia and short duration of action. It is broadly classify into two classes:- Local and General Anesthesia. Local anesthesia prevents or relieves pain by interacting nerve conduction they bind specific receptor and block the influx of sodium ion. Drugs used in local anesthesia are lidocaine, cocaine, procaine, and benzocaine. General anesthesia is durg which produce reversible loss of all sensation and consciousness. Drugs used in general anesthesia are halothane, nitrous oxide, chloroform. Side effect of anesthesia is nausea and vomiting after surgery, brain swelling, and coma.
Osmotic Drug Delivery System

Shweta Ramkar

Institute of Pharmaceutical Science, Guru GhasidasVishwvidyalaya, Bilaspur, C.G

Email: shwetaramkar@gmail.com

ABSTRACT

In recent years, considerable attention has been focused on the development of novel drug delivery systems (NDDS). Osmotically controlled drug delivery systems (ODDS) are a type of NDDS which utilize osmotic pressure for controlled delivery of active agent(s). Usually oral drug delivery systems do deliver the drug with no particular release pattern and reach the targeted system with less control effective concentration subsequently unpredictable plasma concentration. To overcome this problem a lot of research and development had done, which has evolved into NDDS i.e. Novel Drug Delivery Systems. It’s a vast system dealing with different release pattern like matrix, diffusion, osmotic floating liposome, nanoparticles, microsphere and the list goes on. These days old as well as new disease treatment utilize currently developed systems for its prevention and cure which includes NDDS which is beneficiary for patients. Osmotic systems is based on osmosis and osmotic pressure which is driving force for the solvents to travel through semi permeable membrane until equilibrium occur between the two compartments i.e. internal and external. It mainly consists of three things-a semi permeable membrane, a core and a delivery orifice.
Efflux Pumps: A Double Edge Sword in Circumvention of Multi-Drug Resistance of Cancer Cells

Suman Saha *, Amit Roy

Columbia Institute of Pharmacy, Tekari, Near Vidhan Sabha, Raipur, CG, India

ABSTRACT

Bacteria and cancer cells develop resistance to more than one agent as a consequence of being exposed to ineffective levels of the agent for a prolonged period of time. The resistance of these cells is mediated by over-expressed efflux pumps that have the ability to extrude a large variety of unrelated chemicals. Multi-drug resistance (MDR) in cancer chemotherapy refers to the ability of cancer cells to survive from treatment of a wide range of drugs. In addition to the MDR induced by drugs in early exposure, the MDR cancer cells may subsequently develop cross-resistance to several unexposed and structurally unrelated chemotherapeutic agents. Mechanisms of MDR include decreased uptake of drugs, alterations in cellular pathways and increased active efflux of drugs. Overexpression of ATP-binding cassette (ABC) transporters is one of the most common mechanisms. ABC transporters are large membrane-bound proteins consisting of two nucleotide-binding domains (NBDs) and two transmembrane domains (TMDs) which mediate the active transport of substrate drugs out of the cell. Over-expression of the three major ABC transporters, i.e. P-glycoprotein (Pgp), multidrug-resistance-associated protein 1 (MRP1) and breast cancer resistance protein (BCRP/ABCG2) is frequently observed in cancer cell lines selected with chemotherapeutic drugs and critical to clinical drug resistance. Among the ABC transporters, Pgp is the most extensively studied for its role in MDR reversal effects. While other MDR reversal mechanisms remain unclear, Pgp inhibition is a criterion for further mechanistic study. More mechanistic studies are needed to fully establish the pharmacological effects of potential MDR reversing agents.
Ocular Drug Deliver and the Importance of Microemulsion
As A Potential Delivery System

Preeti Sahu, Jagriti Surojiya, Divya Singh, Pranav Pachouri, Amit Roy
Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Conventional dosage forms such as eye drops are the most used dosage form by ocular route, in spite fullness of their short bioavailability and the pulsated release of the drug where it is predictable that direct application of the drug to the eye will give extreme response; however after instillation of an eye drop, about 70% of the administered volume can be seen to be lost by different factors. For this reason new ocular drug delivery vehicles have been developed in order to diminish the amount of the drug lost from the eye and at the same time deliver extreme response with reduced frequency of administration. Among such delivery systems are microemulsions. Microemulsions are a favourable dosage form for ophthalmic application because their industrial production and sterilization are relatively simple and low-cost; they have good thermodynamic stability and inherently provide the capability to make soluble lipophilic drugs. At the same time, the in vivo results and primary studies on healthy volunteers have shown a delayed effect and an increase in the bioavailability of the drug. The proposed mechanism is based on the adsorption of the nanodroplets, representing the internal phase of the microemulsion and acting as drug reservoir, on the cornea and thus increasing the time in which the drug is available for absorption. This review will discuss the important characteristics of ocular delivery systems, factors that reduce drug availability to the eye and methods to improve ocular bioavailability. It will also focus on microemulsions, their preparation methods, their components and their applications as drug carrier for ocular use.
Enhancement of Oral Bioavailability Use of Pamam Dendrimer
Anju Anant

University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh.

Email: anjuanant4@gmail.com

ABSTRACT

Bioavailability is one of the important parameter to achieve desired concentration of drug in systemic circulation for pharmacological response to be shown. A drug with poor bioavailability is one with poor aqueous solubility, slow dissolution rate in biological fluids, poor stability of dissolved drug at physiological pH, poor permeation through bio membrane, extensive presystemic metabolism. Drugs having low bioavailability require to be administered at a higher dose as only a small fraction of the administered dose is absorbed in the systemic circulation and reach the target site. Thus, various approaches are used for bioavailability enhancement of the orally administered drugs. Implication of the novel lipid based Nanocarriers and nanomaterials like dendrimers and carbon Nanotubes as a delivery system can effectively enhance the oral bioavailability of drugs by breaching the barriers, and resolve all critics related to solubility and bioavailability. Dendrimers have successfully proved themselves as useful additives in different routes of drug administration because they can render drugs greater water solubility, bioavailability, and biocompatibility. These features make it attractive candidates as drug carriers for controlled release or targeted delivery. This review covers the points of synthesis, types, properties, applications, characterisation etc. Poly(amidoamine) (PAMAM) dendrimers with particular reference to oral delivery systems have been evaluated for the influence manipulate of surface functionality and size on the epithelial barrier of the gut with the goal of identifying safe carriers.
White Pumpkin Juice-A New Energy Drink

Asthna Pathak

University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur

Email: asthapathak.99@gmail.com

ABSTRACT

White pumpkin belonging to the Cucurbitaceae family is popularly known as “Bhaura Khumda”, “Rakhiya” “Petha” in different regions of India. Various therapeutic applications have been reported about the kernals of the fruit. The present work is to determine the active phytochemical constituents present in its flesh part and to study on the stability of the product. The flesh part of the pumpkin fruit is widely used in treatment of diseases like diabetes, cancer, cataracts, macular degeneration, astigmatism, intestinal inflammation. The importance of the fruit has been reported by many countries in their official standards like British pharmacopoeia; European pharmacopoeia; department of agriculture, forestry & fisheries, republic of south Africa, Indian Ayurvedic & Siddha herbs; Chinese Medical journal & widely reported in the WHO monographs. The research is helpful in developing a new and novel delivery system of the pumpkin gel which is fruitful in cure of various diseases and also does act as a rich dietary supplement. Different pytochemical test are performed on the juice obtained from the white pumpkin and based on the result the therapeutic efficacy of the fruit is determined. The formulated juice can be used as a new energy drink as it contains 26Kcal energy per Kg which is widely appreciated. Also due to 0% cholesterol level is widely accepted by the diabetics & hearty patients. The juice can be introduced as a nutrient supplement especially contains all the essential vitamins, minerals, carbohydrates, proteins, electrolytes & phyto nutrients It can also as an alternative to reduce the intake of diabetic pills. Also the presence of L-tryptophan in the juice will help in refreshment of mind as the deficiency of this amino acid causes depression. Also since the economic impact of the juices as is at peak and the fruit is local product so readily available the manufacturing will directly affect the economy of the state.
A Review on Vaccination

Indraman Sahu, Ashutosh Dinkar, Narayan Hemnani, Narayan Lal

Email: indraman.sahu@gmail.com

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

ABSTRACT

Vaccine is a biological preparation that provides active acquired immunity to a particular disease. Vaccine typically contains an agent that resembles a disease-causing micro-organism and is often made from weakened or killed forms of microbes, its toxin, or its surface protein. The agent stimulates the body's immune system to recognize the agent as a threat, destroy it, and keep a record of it. So, the immune system becomes more easily able to recognize and destroy any similar micro-organism.

The first vaccine was prepared by Edward Jenner in 1790 against smallpox. Pasteur produced vaccination against anthrax, chickenpox, cholera, and rabies. Vaccination is responsible for worldwide eradication of smallpox and restricted disease such as polio, measles, and tetanus. Other applications of vaccines include gene cloning, antibiotics, and hormone preparations in cases of anti-toxin production when the body is not able to produce defense against toxins. Temporary development of immunity against toxins is most useful, and the most useful animal for producing anti-venoms is a horse. Several biochemical and hematological changes occur in horses during snake bites. They are good immunopotentiators. The prime objective during the production of anti-venoms is to strike a balance between safety of immunization and efficacy of anti-venoms.
Chronopharmacotherapy – A Therapeutic Approach towards Endemic Diseases

Pragya Baghel*, Amit Roy, Sanjib Bahadur, Monika Bhairam

Columbia Institute of Pharmacy Tekari, Raipur (C.G.) 493111

Email: pragyabaghel88@gmail.com

ABSTRACT

Chronopharmaceutics involves two words, “Chronobiology” & “Pharmaceutics”, it is a study related to development and evaluation of Drug delivery systems that release a drug in accordance with a set rhythm. Release pattern of such systems depends on one or more types of circadian rhythm of a human body. These rhythms may be time dependent or site specific or may follow certain temporal rhythms such as daily, tidal, weekly, seasonal and annual. This delivery condition demands release of drug as a whole at one time (PULSE) after a certain lag time. Hence, the delivery of drug provides the right amount of dose, at right place and right time. The diseases demanding chronotherapeutic drug release can be enlisted, Asthma, cardiovascular disease, arthritis, diabetes mellitus, hypercholesteremia, peptic ulcer, etc. The occurrence and severity of these diseases follow certain circadian rhythm and therefore it becomes important to control them improving the disturbed biological clock pattern or circadian rhythm of the body.
Psoriasis: Affliction of Derma

Pratiksha Tiwari

Institute of Pharmacy, Pt. Ravi Shanker Shukla University, Raipur, Chhattisgarh

ABSTRACT

Psoriasis is a long-lasting autoimmune disease characterized by patches of abnormal skin. These skin patches are typically red, itchy, and scaly. There are five main types of psoriasis: plaque, guttate, inverse, pustular, and erythrodermic. Psoriasis is generally thought to be a genetic disease which is triggered by environmental factors. There is no cure for psoriasis. The cause of psoriasis is not fully understood, but a number of theories exist. Abnormal production of skin cells (especially during wound repair) and an overabundance of skin cells result from the sequence of pathological events in psoriasis. A diagnosis of psoriasis is usually based on the appearance of the skin. Skin characteristics typical for psoriasis are scaly, erythematous plaques, papules, or patches of skin that may be painful and itch. While no cure is available for psoriasis, many treatment options exist. Topical corticosteroid preparations are the most effective agents when used continuously for 8 weeks; retinoids and coal tar were found to be of limited benefit and may be no better than placebo. Phototherapy in the form of sunlight has long been used for psoriasis. Psoriasis resistant to topical treatment and phototherapy may be treated with systemic therapies.
Forthcoming Scenarios and Traits of Herbal Drug Discovery in Herbal Medicines

Meenakshi Ratra*, Rajesh Gupta

Sri Sai College of Pharmacy, Badhani, Pathankot (Punjab)-145001, India

ABSTRACT

Herbal drugs constitute a major share of all the officially recognised systems of health in India viz. Ayurveda, Yoga, Unani, Siddha, Homeopathy and Naturopathy, except Allopathy. More than 70% of India’s 1.1 billion population still use these non-allopathic systems of medicine. There has been an increase demand for the pharmaceutical products of Ayurveda in all over the world because of fact that the allopathic drugs have a side effect. In the present context the Ayurvedic system of medicine is widely accepted and practiced by peoples no only in India but also in the developed countries- such as Europe, USA, Japan, China, Canada etc. Plant based therapy are marked due to its low cost, easy availability based on generation to generation knowledge. The aim of the present review was to understand the knowledge of herbal medicines in respect to its development, herbal wealth, demand in market, aspects of herbal drug discovery, prospects in herbal medicines, promotion and Ethnopharmacological approach to herbal drugs.
Formulation of an Herbal Insect Repellant

Rashmi Suryavanshi*, Tripti Banjare, Chandrakanta Parkar, Swarnali Das Paul

SSTC-Shri Shankaracharya Group of Institutes-Faculty of Pharmaceutical Sciences, Junwani, Bhilai, Chhattisgarh

ABSTRACT

There are number of chemical mosquito repellents available in the market in the form of evaporating liquids, coils and creams which are toxic for human also. Our idea was to develop a new formulation containing only herbal ingredients which will be 100% safe for human and animals but lethal for mosquitoes and flies. For this purpose leaves of different plants including Marry Gold, Chaturang, Meetha Neem, Neem, Eucalyptus and other (not disclosed) were collected and air dried at lab. After drying, the leaves were crushed and the size was reduced for extraction. The extraction was done in two phases. In first phase the material was fed in clavanger and extracted with water as menstrum. In another phase the material was fed in soxhlator and was extracted with hydro-alcoholic solution as menstrum. And the product of second phase of extraction was aqueous solution. It was concentrated in water bath. This extract was studied for insect repellant property by spraying randomly on houseflies and mosquitoes. Initial study reveals good result for repelling insects. However further studies has to be carried out for proving its efficacy.
Plant Based Herbal Nutraceuticals: A Re-Emerging Health Aid
Parisha Agrawal*, Govind Sharma, Yogesh Vaishnav, Shekhar Verma
SSTC-Shri Shankaracharya Group of Institutes-Faculty of Pharmaceutical Sciences, Junwani,
Bhilai, Chhittisgarh

ABSTRACT
Nutritional therapy and phyto-therapy have emerged as new concepts of health aid in recent years. Strong recommendations for consumption of nutraceuticals from plant origin have become progressively popular to improve health, and to prevent and treat diseases. Nutraceuticals are "naturally derived bioactive compounds that are found in foods, dietary supplements and herbal products, and have health promoting, disease preventing and medicinal properties." Plant derived Nutraceuticals/functional foods have received considerable attention because of their presumed safety and potential nutritional and therapeutic effects. Some popular phyto-nutraceuticals include glucosamine from ginseng, Omega-3 fatty acids from linseed, Epigallocatechin gallate from green tea, lycopene form tomato etc. Majority of the nutraceuticals are claimed to possess multiple therapeutic benefits though substantial evidence is lacking for the benefits as well as unwanted effects. With these trends, improvement of the dietary nutritional values of fruits, vegetables and other crops or enhancement of the bioactive components in folk herbals have become the targets of blooming plant biotechnology industry. The present paper has been devoted towards better understanding of the phyto-nutraceuticals from different medicinal plants based on their disease specific indications.
In Vitro Anticataract Activity of Cleome gynandra on Goat Lenses

Pranay Soni

SLT Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Koni, Bilaspur, Chhattisgarh-495009

ABSTRACT

The antioxidants such as Cleome gynandra and Enalapril (ACE Inhibitor) were subjected to prevent cataract formation in vitro on glucose induced cataract model. Goat lenses were incubated in artificial aqueous humor containing 55 mM glucose (cataractogenesis) with enalapril and Cleome gynandra extract in different concentrations at room temperature for 72 h. Biochemical parameters studied in the lens were electrolytes (Na\(^+\), K\(^+\)), Na\(^+\)-K\(^+\)-ATPase activity, malondialdehyde (MDA) and proteins. Glucose induced opacification of goat lens began 8-10 hrs after incubation and was complete in 72-80 hrs. Cataractous lenses showed higher Na\(^+\), MDA (P<0.001), lower Na\(^+\)-K\(^+\)-ATPase activity, and water-soluble protein content. Lenses treated with enalapril 5mg/ml and Cleome gynandra extract in concentrations of 100, 300, and 500 mg/ml showed higher protein (total and water soluble proteins) content and prevented formation and progress of cataract by glucose, as evidenced by biochemical parameters.
Evaluation of Antidiabetic Activity of *Gisekia pharnaceoides* in Streptozotocin Induced Diabetic Rats

Rakesh Tirkey

University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, India

ABSTRACT

The present study was aimed to investigate Antidiabetic activity of the leave extracts of *Gisekia pharnaceoides* (Family: *Aizoaceae*). It is commonly found throughout India. The study was carried out to ascertain the activity. The plant was extracted with ethanol in soxhlet apparatus and the extracts thus obtained were examined for acute toxicity studies in wistar albino rats at different doses upto 2000 mg/kg body weight. The plant extracts were also evaluated for antidiabetic activity at a dose levels of 100, 200 and 400 mg/kg in streptozotocin induced diabetic rats. The plant extracts have not produced any toxic symptoms within the treated animals. The maximum reduction in blood glucose level was observed at 8 and 12th hr. after the oral administration of the 400 and 200 mg/kg b. w of ethanolic extract of *Gisekia pharnaceoides* leaves respectively. From the observations, it was concluded that the reduction of blood glucose levels in diabetic rats was found to be dose dependent and also dependent on duration of action. So it might be useful in the treatment of diabetes without toxicity.
Applicability of Polyelectrolyte Complex and Theory of Polyelectrolytes in Various Solutions and at Various Surfaces

Sonkar S.K.*, Lanjhiyana S.K.

SLT Institute of Pharmaceutical Sciences, Guru Ghasidas Vishwavidyalaya, Koni, Bilaspur, Chhattisgarh-495009

ABSTRACT

The phenomena of interpolymer interactions and formation of polyelectrolyte complexes have been the focus of intensive fundamental and applied research. Interpolyelectrolyte complexes combine unique physicochemical properties with high biocompatibility. Studies have been carried out on many different polymer blends and types. Such combinations may possess unique properties that are different from those of individual component. Polyelectrolytes are polymers carrying either positively or negatively charged ionizable groups. The properties of these polymers in solutions and at charged surfaces depend on the fraction of dissociated ionic groups, solvent quality for polymer backbone, solution dielectric constant, salt concentration, and polymer–substrate interactions. The present review emphasizes on the applicability of polyelectrolyte complexes in drug delivery technology, we summarize the current development of theoretical models describing properties of polyelectrolyte solutions and adsorption of charged polymers at surfaces and interfaces. We discuss in detail the conformational properties of polyelectrolyte chains in dilute and semidilute solutions, the phenomenon of counterion condensation, the necklace structure of polyelectrolytes in poor solvent conditions for polymer backbone, the dynamics of polyelectrolyte solutions, the surface overcharging by adsorbed polyelectrolytes and its implication for assembled polyelectrolyte multilayers.
Steroid Based Novel Topical Formulation for Treatment of Psoriasis

Madhulika Pradhan*, Deependra Singh, Manju Singh

University Institute of Pharmacy, Pt. Ravishankar Shukla University, Raipur, Chhattisgarh, India 492010

ABSTRACT

Psoriasis is a chronic inflammatory skin disorder affecting about 2-5% population worldwide. About 80% of patients are treated topically. But available drugs for topical delivery are associated with many problems like increased dosing frequency, decreased permeability etc. In the present research an attempt has been made to develop novel topical formulation containing betamethasone propionate (BP) loaded nano structured lipid constructs (NLCs) for prolonged and effective drug delivery. BP loaded NLCs were prepared by solvent diffusion technique using Boxx Behenken designs for optimization. The mean diameter and surface morphology of BP loaded NLCs was evaluated using zetasizer and transmission electron microscope respectively. The optimized NLCs were incorporated in 2% w/w Carbopol 971 to get novel gel formulation. In vitro release study was carried out using modified Franz diffusion cell. In vivo skin irritation and in vivo antipsoriatic activity of novel formulation was compared with conventional formulation containing plain BP. BP loaded NLCs were developed and optimized in order to achieve minimum particle size and maximum entrapment efficiency. The optimized NLCs were spherical and smooth as seen under TEM. Mean particle size and % entrapment efficiency obtained was 311±0.21 nm and 89.27±1.04 % respectively. Prolonged and slow release of BP form novel formulation was observed with 85.21% drug release after 24 hrs where as 74.18% release was observed from conventional formulation after 6 hrs. In vivo studies on mouse tail animal model indicated that novel formulation significantly improved therapeutic index in terms of induction of orthokeratosis in those parts of mouse which normally have parakeratotic differentiation (as in psoriatic skin). Moreover no skin irritation was observed with the novel formulation. The findings of this investigation conclusively demonstrated the promising role of steroid based novel formulation in the topical treatment of psoriasis.