

CONFERENCE PROCEEDING



Sakun Publishing House (SPH)



INTERNATIONAL JOURNAL OF PHARMACY & LIFE SCIENCES

(A Peer-reviewed Monthly Online International Journal (ISSN 0976-7126), Index in e-google; Index Copernicus, Europe; EBSCO, USA; POSAR; Open J-Gate; Research Gate; MAPA, India; ISA, India; ISI, Chemical Abstract Services, USA, Thomson Reuter Researcher ID, Ulrich's International Periodical Directory, USA & CABI, London, UK)
Impact Factor: 7.06 (SJIF); IC-V-3.75; CODEN (USA): IJPLCP
e-ISJN: A4372-2571

NLM Pubmed, ICI, ISI & SCI Indexed

AERB SPONSORED

One Day

NATIONAL SEMINAR

On

**“EMERGING TRENDS & FUTURE PERSPECTIVES IN
DIAGNOSTIC AND THERAPEUTIC USES OF RADIOACTIVE
ISOTOPES”**

9th March, 2019

Organized by



Swami Vivekanand College of Pharmacy

Vivekanand Knowledge City, Khandwa Road,
Indore 452020 (M.P.)

Ph.: 07324 405003, 405027

E.mail: info@svcp.ac.in

Available Online: www.ijplsjournal.com

Vol. 10 Issue 3, March'2019

Abstract Book



AERB SPONSORED

One Day

NATIONAL SEMINAR

On

***“EMERGING TRENDS & FUTURE PERSPECTIVES IN
DIAGNOSTIC AND THERAPEUTIC USES OF RADIOACTIVE
ISOTOPES”***

9th March, 2019 (Saturday)

Organized by



Swami Vivekanand College of Pharmacy

**Vivekanand Knowledge City, Khandwa Road,
Indore 452020 (M.P.)**

Ph.: 07324 405003, 405027

E.mail: info@svcp.ac.in

Organizing Committee

Organizing Chairman

Dr. P.K. Dubey

Organizing Secretary

Dr. Satyaendra K. Shrivastava

Convener

Dr. Sumeet Dwivedi

Coordinators

Dr. Shikha Agrawal

Dr. Rupesh K. Pandey

Mr. Dishant Gupta

Inauguration Committee

Mrs. Khushboo Arora
(9926018700)

Mrs. Anuradha Rathore

Mrs. Darshana Sharma

Ms. Suman Gehlot

Mr. Girriraj Semil

Registration Committee

Mrs. Pooja Tiwari
(877021694)

Mrs. Aprajita Chaturvedi

Ms. Asharani Pyathi

Mr. Mahendra S. Jatav

Mr. Dilip Prajapati

Scientific Committee

Mrs. Archana Tiwari
(9907210219)

Ms. Namrata Gupta

Mr. Sachin Okhade

Mr. Satyaendra Yadav

Media & Publicity Committee

Mrs. Pooja Pancholi
(8319791134)

Ms. Rupali Bhavsar

Mrs. Priyanka Pandey

Mr. Poonam S. Rajput

Hospitality, Accommodation & Committee

Mr. Suresh Sharma (7879830114)

Mr. G.S. Kushwaha

Mr. Aneesh Ghosi

Mr. Amar Ranawadiya

Programme Schedule

| | |
|----------------------------|---|
| 09:00 am - 10:00 am | Registration & Breakfast |
| 10.00 am - 11.00 am | Inauguration |
| 11.00 am - 12.30 pm | Plenary Lecture I |
| 12.30 pm - 1.30 pm | Lunch |
| 01.30 pm - 02.30 pm | Plenary Lecture II |
| 02.30 pm - 03.30 pm | Poster Presentation |
| 03.30 pm - 04.00 pm | Valedictory Function |

AERB Sponsored National Seminar on “Emerging trends & future perspectives in diagnostic and therapeutic uses of radioactive isotopes”

9th March 2019, Saturday

Director Message.....



It gives me an immense pleasure that Swami Vivekanand College of Pharmacy is organizing the National seminar on the theme “*Emerging trends & future perspectives in diagnostic and therapeutic uses of radioactive isotopes*” on 9th March 2019 sponsored by Atomic Energy Regulatory Board, Mumbai, India.

The discipline of radio pharmacy has become highly specialized and contributed positively to the practice of nuclear medicine. The main objective of the seminar is to provide platform to the students, faculties and industrialists of profession involved in the direction of academic development & scientific research to understand the recent research and development in the field of radioisotope.

I extend my warm welcome to young researchers, Pharma professionals, speakers, eminent scientists, guests, faculties, and industrialists in this splendid seminar and wish the seminar a great success.

Dr. P. K. Dubey

Director

**AERB Sponsored National Seminar on “Emerging trends & future perspectives in
diagnostic and therapeutic uses of radioactive isotopes”
9th March 2019, Saturday**



Dean Message.....

It gives me great pleasure that Swami Vivekanand College of Pharmacy is organizing AERB Sponsored One day National seminar on the topic “*Emerging trends & future perspectives in diagnostic and therapeutic uses of radioactive isotopes*” on 9th March 2019.

A Pharmacy profession is a Nobel profession and is emerging day by day with development of innovative techniques and trends which will certainly benefits to our society. This seminar would provide opportunities to the delegates to exchanges their ideas and involvement towards radiopharmacy.

I hope that this seminar will provide an excellent opportunity for the pharmacists to enrich their knowledge in today’s fast changing scenario and come out with new cutting edge technologies for radioisotopes in diagnosis and therapy.

I extent my profound wish for the seminar a grand success.

Dr. Satyaendra K. shrivastava

Dean (Academics & Administration)

AERB Sponsored National Seminar on “Emerging trends & future perspectives in diagnostic and therapeutic uses of radioactive isotopes”
9th March 2019, Saturday

Convener Message.....



Dear Colleagues,

“Arise, Awake and Stop not till the goal is reached”

On behalf of Swami Vivekanand College of Pharmacy, Indore, I heartily welcome you all the students, faculties, speakers and delegates to this AERB sponsored National seminar entitled “*Emerging trends & future perspectives in diagnostic and therapeutic uses of radioactive isotopes*” on 9th March 2019.

Radioisotopes are radio labeled compound that are pharmaceutically and radiologically safe for administration in the body for diagnosis and treatment. The application of radioisotopes in diagnostic and therapeutic uses as a medicine is of diversified nature. In the present scenario, to provide proper direction to researchers and scientists to create awareness about recent advances, challenges in the development and proliferation of application of radioisotopes in diagnostic and therapeutic. The seminar will increase the awareness toward applications of radioisotope and application of radiopharmaceuticals in healthcare amongst all participants.

The seminar is aimed to provide interactive forum for expressive exchange of information and to discuss the applications of radioisotopes in health care amongst varied range of participants including eminent speakers, Industrialist, renowned scientist, young researchers and students. This seminar offers an excellent opportunity for the participants to interact with eminent scientists and there would also be a poster presentation. I am so honored to be the convener and on the behalf of Swami Vivekanand College of Pharmacy welcome you all to have a great time.

Regards,

Dr. Sumeet Dwivedi

ABSTRACT INDEX

| Abstract No. | Title | Corresponding Author | Page No. |
|---------------|---|---------------------------|----------|
| NS/DTURAI/001 | Radiation as potential in development of Phenological behavior of herbal drugs | S. N. Dwivedi | |
| NS/DTURAI/002 | Importance of optical imaging and radioactive isotopes in cancer therapy: Current needs and future aspects | Satyaendra K. Shrivastava | 2 |
| NS/DTURAI/003 | Radioisotopes in medical diagnosis and treatment: Need of present area | Sumeet Dwivedi | 3 |
| NS/DTURAI/004 | Radiation therapy for the treatment of vaginal cancer | Sakshi Singotia | 4 |
| NS/DTURAI/005 | Radioactive iodine therapy: A useful therapy for hyperthyroidism | Rupesh K. Pandey | 5 |
| NS/DTURAI/006 | Formulation and evaluation of herbal cream containing hydro-alcoholic extract of <i>Plumeria pudica</i> Linn. Leaves for the treatment of gynecological disorders | Shweta Shriwas | 6 |
| NS/DTURAI/007 | Anti-breast cancer perspective of a newly developed 2,4-disubstituted thiazole derivative | Latika Liladhar Kathane | 7 |
| NS/DTURAI/008 | Synthesis of a potential anti-inflammatory pyrazole derivative from hippuric acid as the starting material | Mrunali Digambar Amdare | 8 |
| NS/DTURAI/009 | Hippuric acid as the template material for the synthesis of a novel anti-diabetic 1,3,4-thiadiazole derivative | Nutan Ganesh Kuhite | 9 |
| NS/DTURAI/010 | Fabricating hydantoin / thiohydantoin hybrids from a natural product, cuminaldehyde: New players for anti-convulsant therapeutics | Kamna Rajesh Jogdand | 10 |
| NS/DTURAI/011 | Discovery of 4-methyl-2-oxo-2H-chromen-7-yl-2-benzamidoacetate as anti-proliferative agents | Chitrlekha Deorao Padole | 11 |
| NS/DTURAI/012 | Prediction of piperidine derivatives as HIV-1 reverse transcriptase Inhibitors: | M.C. Sharma | 12 |

AERB Sponsored National Seminar on “Emerging trends & future perspectives in diagnostic and therapeutic uses of radioactive isotopes”

9th March 2019, Saturday

| | | | |
|---------------|---|-----------------------|----|
| | QSAR Studies | | |
| NS/DTURAI/013 | Future aspects of radioactive isotopes in pharmacy and medical studies and its therapeutics effects | Avani Swami | 13 |
| NS/DTURAI/014 | Pharmacognostical Evaluation of Corn Silk (<i>Zea mays</i>) | Chetna Mandloi | 14 |
| NS/DTURAI/015 | Radioactive Iodine in the treatment of thyroid cancer: An Overview | Aishwarya Nagar | 15 |
| NS/DTURAI/016 | Neuroprotective Effect of <i>Buteamonosperma</i> by Streptozotocin induced Alzheimer | Ankur Joshi | 16 |
| NS/DTURAI/017 | Management of cancer via improved paclitaxel medical nanoparticle formulation | Amrendra Pratap Yadav | 17 |
| NS/DTURAI/018 | An Overview on Hepatoprotective activity | Nidhi Gupta | 18 |
| NS/DTURAI/019 | Applications of radioisotopes in diagnostic and therapeutic aspects | Shubham Wani | 19 |
| NS/DTURAI/020 | Application of radioisotopes in personalized medicine | Chetna Doble | 20 |
| NS/DTURAI/021 | Application of radioisotopes using positron emission tomography in distinguish benign from malignant tumours | Ayushi Gupta | 21 |
| NS/DTURAI/022 | Enoxaparin Sodium: A review on its pharmacology, clinical applications and various methodologies for the estimation in pharmaceutical dosage form | Sandeep Sahu | 22 |
| NS/DTURAI/023 | Comparative study of ranitidine containing effervescent tablets with prepared and marketed formulation for the effective management of peptic ulcer | Amrita Chourasia | 23 |
| NS/DTURAI/024 | Traditional medicine agenda for developing countries | Abhishek Dwivedi | 24 |
| NS/DTURAI/025 | An Overview on Antidiabetic Potential of Ethnomedicinal plants | Pradeep Adlak | 25 |
| NS/DTURAI/026 | A Review: Gastro-retentive Novel Drug Delivery Systems | Devendra Kumar Bhopte | 26 |
| NS/DTURAI/027 | Formulation and evaluation of dextrin based budesonide microspheres for | Rinku Gonekar | 27 |

AERB Sponsored National Seminar on “Emerging trends & future perspectives in
diagnostic and therapeutic uses of radioactive isotopes”

9th March 2019, Saturday

| | | | |
|---------------|--|---------------------|----|
| | colon targeted delivery | | |
| NS/DTURAI/028 | Ethnomedicinal and Pharmacological importance of <i>Plumeria pudica</i> Linn. | Priyanka Kumawat | 28 |
| NS/DTURAI/029 | Development and validation of analytical methods for estimation of phyto-constituents in herbal formulations | Rupali Bhavsar | 29 |
| NS/DTURAI/030 | Diagnostic and Therapeutic efficacy of Radioisotopes | Versha Mittal | 30 |
| NS/DTURAI/031 | Pelletization Techniques: A review | Shivaneer Vyas | 31 |
| NS/DTURAI/032 | Design, development and evaluation of transdermal patch using aqueous extract of <i>Eclipta alba</i> | Suman Gehlot | 32 |
| NS/DTURAI/033 | <i>In vitro</i> evaluation of aldose reductase inhibitory potential of <i>Bougainvillea spectabilis</i> | Kushagra Dubey | 33 |
| NS/DTURAI/034 | Development and Characterization of liposomal aerosols for improved delivery of etoposide to the lungs | Neelima Salvi | 34 |
| NS/DTURAI/035 | An over view of radioisotope technetium-99m | Gopesh Sharma | 35 |
| NS/DTURAI/036 | Clinical trials: An overview | Arun Singh Bhandari | 36 |
| NS/DTURAI/037 | Implication of radioactive substances in the treatment of breast cancer | Shruti Yadav | 37 |
| NS/DTURAI/038 | Overview Information on marijuana | Manas Katare | 38 |
| NS/DTURAI/039 | Development of new era of radiography | Varsha Gupta | 39 |
| NS/DTURAI/040 | Prostate cancer treatment via radioisotopes | Rajkumar Kumawat | 40 |
| NS/DTURAI/041 | Effects of radiation on the growth of plants | Harsh Pendharkar | 41 |
| NS/DTURAI/042 | Emerging Role of Nanotechnology in Sunscreen | Ashutosh Joshi | 42 |
| NS/DTURAI/043 | Rubella: Complications & Treatment | Premlata Patel | 43 |

NS/DTURAI/001

Radiation as potential in development of phenological behavior of herbal drugs

S.N. Dwivedi

Department of Botany
Janata PG College, APS University
Rewa (M.P.), INDIA-486001
drsndwivedi@yahoo.co.in

Abstract

Phenological behavior of herbal drugs implies the overall all growth starting from germination of seed to reproductive capacity of the seeds. A study indicates that ionizing radiations produce harmful effects in the living organisms including plants. This review mainly focuses on the potential of radiations on the phenological behavior of herbal drugs. Investigation on the use of these radiations indicates that several botanical such as *Centella asiatica*, *Ocimum sanctum*, *Panax ginseng*, *Podophyllum hexandrum*, *Amaranthus paniculatus*, *Emblica officinalis*, *Piper longum*, *Tinospora cordifoila*, *Mentha arvensis*, *Mentha piperita*, *Syzygium cumini*, *Zingiber officinale*, *Ageratum conyzoides*, *Aegle marmelos* have some good extent of phenological behavior.

Key-words: Radiations, Phenological behavior, Herbal drugs



Importance of optical imaging and radioactive isotopes in cancer therapy: Current Needs and Future aspects

Satyaendra K. Shrivastava* and P. K. Dubey

Swami Vivekanand College of Pharmacy

Indore (M.P.), INDIA-452020

drskshrivastava27@gmail.com

Abstract

Optical imaging is one of the most important in cancer diagnostics as it allows noninvasive diagnosis of tumors. Optical imaging scans are used to detect cancer and monitor its progression and metastases. CT (computed tomography), MRI (magnetic resonance imaging), SPECT (single-photon emission computed tomography), and PET (positron emission tomography) imaging modalities are preferred methods of optical imaging for cancer detection because they are three-dimensional. There are various radioactive isotopes such as R-99m, I-131, U-235 widely used in the treatment of cancer therapy. These are ideal element for nuclear medicine because it has a half life of 6-12 hours and emits gamma rays. Gamma rays are massless and easily detected outside of the body. The present paper highlights the uses of radioactive isotopes in the treatment of cancer.

Key-words: Radioactive isotopes, Cancer, Therapy



NS/DTURAI/003

Radioisotopes in medical diagnosis and treatment: Need of present era

Sumeet Dwivedi

Department of Pharmacognosy & Biotechnology

Swami Vivekanand College of Pharmacy

Indore (M.P.), INDIA-452020

sumeet_dwivedi2002@yahoo.com

Abstract

In present era radioisotopes are widely used to diagnose disease and as effective treatment tools for the same. For diagnosis, the isotope is administered and then located in the body using a scanner of some sort. The decay product can be located and the intensity is measured. The amount of isotope taken up by the body can then give information as to the extent of the medical problem. An isotope of iodine (I-131) is used in both the diagnosis and treatment of thyroid cancer. The thyroid will normally absorb iodine to produce the iodine-containing thyroid hormones. An overactive thyroid gland will absorb the radioactive material which can then destroy excess thyroid tissue or any cancer of the thyroid. The material is sometimes used to image cancers in other parts of the body. Isotopes are useful in scans to locate cancer and tumors cells. A radioisotope has been attached to antibodies that bind to specific cancer cells. There are numerous radioactive isotopes that are present used in the diagnosis and treatment of the diseases and very dreadful diseases are going to be treated using the same. The present review focuses all these aspects of the radioisotopes in medicinal diagnosis and their treatments.

Key-words: Radioactive isotopes, Diagnosis, Treatment



Radiation therapy for treatment of vaginal cancer

Sakshi Singotia* and Sumeet Dwivedi
Swami Vivekanand College of Pharmacy
Indore (M.P.), INDIA-452020
sumeet_dwivedi2002@yahoo.com

Abstract

Radiation therapy uses high-energy rays or particles to destroy cancer cells. It is usually used to treat vaginal cancer. Radiation therapy is sometimes combined with chemotherapy to treat advanced vaginal cancer. This is called chemoradiation. The 2 treatments are given during the same time period. Vaginal cancer is an uncommon can be either recurrent or primary. External beam radiation therapy and brachytherapy places a very important role in both the above mentioned cases. Technological advances have led to more advanced techniques, which in turn have translated to improved outcomes for patients with malignancies of the vagina. The present review focuses on the incorporation of modern treatment of patients with vaginal cancer. In this review various aspects of radiation therapy, along with dose selection and side effects of the same has been discussed in detail.

Key-words: Radiation therapy, Vaginal cancer, Treatment



Radioactive iodine therapy: A useful therapy for hyperthyroidism

Rupesh K. Pandey* and Priyanka Pandey

Swami Vivekanand College of Pharmacy

Indore (M.P.), INDIA-452020

rupeshpandey@svcp.ac.in

Abstract

For hyperthyroidism i.e., a condition with overactive thyroid, radioiodine therapy is a nuclear medicine most widely preferred and also used for the treatment of thyroid cancer. For the same purpose I-131 is most commonly used and since iodine is used it is preferred as iodine therapy. A small dose of radioactive iodine I-131 (an isotope of iodine that emits radiation) is swallowed; it is absorbed into the bloodstream and concentrated by the thyroid gland, where it begins destroying the gland's cells. When a person starts taking this therapy one should stop taking anti-thyroid medications. The present review highlights all the required precautions, side effects and possible dose.

Key-words: Iodine therapy, Thyroid cancer, I-131



NS/DTURAI/006

**Formulation and evaluation of herbal cream containing hydro-alcoholic extract
Plumeria pudica Linn. leaves for the treatment of gynecological disorders**

Shweta Shriwas* and Raju Chouksey

Faculty of Pharmacy
Dr. A.P.J. Abdul Kalam University
Indore (M.P.), INDIA-452016
shwetashriwas18@gmail.com

Abstract

Gynecological disorders v.i.z. menstrual disorders, vaginitis, uterine bleeding, vaginal inflammation, itching etc. are now-a-days very common disorder almost in every woman. Available allopathic medicines are costly, have side effects and also due to social custom, tribal women of India use herbs for the treatment of gynecological disorders. The present paper deals with formulation of herbal cream containing hydro-alcoholic extract of *Plumeria pudica* Linn. Leaves. Different batches were formulated and was evaluated. All the prepared formulation was evaluated for organoleptic characters, spreadibility, drug content and stability. Also, the anti-candida activity of the formulation was screened out. Promising results were obtained for the formulated herbal cream.

Key-words: Gynecological disorders, Herbal cream, Formulation, Evaluation



NS/DTURAI/007

Anti-breast cancer perspective of a newly developed 2,4-disubstituted thiazole derivative

Latika Liladhar Kathane*, Nutan Ganesh Kuhite, Chitralkha Deorao Padhole, Mrunali Digambar Amdare, Kamna Rajesh Jogdand and Debarshi Kar Mahapatra

Department of Pharmaceutical Chemistry, Dadasaheb Balpande College of Pharmacy, Nagpur 440037, Maharashtra, INDIA

E-Mail: latikakathane@gmail.com

Abstract

The status of cancer in modern society needs no introduction. It is now marked as the second leading causes of mortality. The breast cancer is the most commonly diagnosed form of cancer among women and is the second leading cause of death in feminine population. Based on the fact that the three scaffolds or groups (thiazole, Schiff's base, and amide linkage) were integrated to produce a molecule with better pharmacodynamics profile, and was believed to present synergistic effects. Objective: The current study involved rational designing of an anti-cancer molecule having 2,4-disubstituted thiazole scaffold with amide linkage followed by a Schiff's base function attached with an aromatic moiety. The research objectives involved screening against breast cancer cell lines; MCF-7 and MDA-MB-231 in SRB assay and comparison with the standard drug capecitabine. The compound demonstrated IC₅₀ values of 31.84 μ M and 25.66 μ M, respectively. It was noticed that the log P (lipophilicity) value of more than 6.5 remained an important factor in mediating anti-tumor activity which influences permeation of lipid bilayer membrane and will facilitate better tumor arrest. The research is probably going to open opportunities in designing more effectual anti-tumor agents in future.

Keywords: Thiazole; Schiff's base; Amide; Breast; Cancer; Hybrids



Synthesis of a potential anti-inflammatory pyrazole derivative from hippuric acid as the starting material

Mrunali Digambar Amdare*, Kamna Rajesh Jogdand, Latika Liladhar Kathane, Nutan Ganesh Kuhite, Chitrlekha Deorao Padole and Debarshi Kar Mahapatra

Department of Pharmaceutical Chemistry, Dadasaheb Balpande College of Pharmacy, Nagpur 440037, Maharashtra, INDIA

E-mail: 4321mrunali@gmail.com

Abstract

The research demonstrated a new method for the synthesis of pyrazole molecules from hippuric acid by a rearrangement reaction and its anti-inflammatory potential. The heterocyclic molecule was synthesized from the substrate; hippuric acid (1). The starting material was made to react with o-hydroxy acetophenone (2) in pyridine solution using POCl₃ as the condensing agent to form an ester (3). The formed ester was subsequently converted into a 1,3-diketone form (4) by stirring the ester in pyridine solution in the presence of powdered KOH. The conversion of o-acylated phenolic ester (3) into 1,3-diketone (4) was mediated by Baker-Venkataraman rearrangement reaction. Lastly, the desired compound; i.e. pyrazole (5) was synthesized using an alkaline solution of hydrazine hydrate in good yield. The in vivo anti-inflammatory activity of the synthesized derivative was performed by the carrageenan-induced paw edema standard method. The spectroscopic data revealed the possible structures of the synthesized compounds and characterization data were found to be in full agreement with that of the structures. The derivative (6) displayed 21.96% at first hr, 34.44% at second hr, and 42.87% at 3rd hr. The activity was found to be quite comparable with that of standard drug indomethacin. The results showed that the produced compound has the perspective to be utilized in inflammatory conditions and arthritis after suitable trails. This study will certainly promote researchers in the rational synthesis of heterocyclic molecules with pronounced biological activity.

Keyword: Pyrazole; Hippuric acid; anti-inflammatory; inflammation; synthesis; rearrangement



Hippuric acid as the template material for the synthesis of a novel anti-diabetic 1,3,4-thiadiazole derivative

Nutan Ganesh Kuhite*, Chitralkha Deorao Padhole, Mrunali Digambar Amdare, Kamna Rajesh Jogdand, Latika Liladhar Kathane and Debarshi Kar Mahapatra

Department of Pharmaceutical Chemistry, Dadasaheb Balpande College of Pharmacy, Nagpur 440037, Maharashtra, India, INDIA

E-Mail: nutankuhite@gmail.com

Abstract

DMT2 is the fastest growing metabolic disorder of this century which had affected nearly 400 million individuals and is expected to affect 600 million by the end of 2030. Thiadiazole is one of the most privileged scaffolds that exhibit anti-hyperglycemic activity by any of the five modes of actions. The present research highlighted the formation of a thiadiazole molecule from hippuric acid as the template material. In the present research, a single 1,3,4-thiadiazole derivative, (Z)-N-((5-((2-hydroxy-1,2-diphenylethylidene)amino)-1,3,4-thiadiazol-2-yl)methyl) benzamide was synthesized via two-step reaction utilizing hippuric acid as the starting material. Hippuric acid is a carboxylic acid found in the urine of mammal. It is an endogenous ligand in the body produced by the xenobiotic modification of toluene and benzoic acid. Therefore, it is a safe chemical moiety and we believe that it may be utilized as the starting material. The anti-diabetic screening of the synthesized derivative was done by streptozotocin induced hyperglycemic model and the anti-hyperglycemic activity was compared with glibenclamide, the reference standard. The anti-diabetic screening of the target thiadiazole compound highlighted a notable hypoglycemic activity with an effectual decline of blood glucose level by 22.16% as compared to the reference standard drug glibenclamide which displayed 39.44% hypoglycemic control. The study will indisputably inspire researcher around the world in developing further more active analogs in the upcoming future.

Keywords: Thiadiazole; Hippuric acid; Synthesis; Antidiabetic; Hypoglycemic; Schiff's base.



Fabricating hydantoin / thiohydantoin hybrids from a natural product, cuminaldehyde: New players for anti-convulsant therapeutics

Kamna Rajesh Jogdand*, Latika Liladhar Kathane, Nutan Ganesh Kuhite, Chitralkha Deorao Padole, Mrunali Digambar Amdare and Debarshi Kar Mahapatra

Department of Pharmaceutical Chemistry, Dadasaheb Balpande College of Pharmacy, Nagpur 440037, Maharashtra, INDIA

E-Mail: kamnajogdand18@gmail.com

Abstract

While designing some anti-convulsant hybrid molecules from a natural product, novel hydantoin (5) / thiohydantoin (8) based analogs were synthesized rationally from cuminaldehyde (1), the principal product of *Cuminum cyminum* (cumin) and also secondary components present in eucalyptus, cassia, and myrrh. The research was planned as literature reports potent anti-seizure activity of cumin oil, probably due to the presence of cuminaldehyde. The starting material, cuminaldehyde (1), the safe natural product was converted into intermediate Schiff's base analogs (3) and (7) employing semicarbazide (2) / thiosemicarbazide (6). The molecule (8) demonstrated the most potent anti-MES activity at 30 mg/kg (0.5 hr) and 100 mg/kg (4 hr), respectively. Successively, the analog was cyclized by ethyl chloroacetate (4) in the presence of fused alcoholic sodium acetate to form the compound of interest. The sophisticated analytical tools (FT-IR, ¹H-NMR, and Mass) and elemental analyses provided all essential characteristics and evidence of the fabricated analogs. The hydantoin hybrids were screened for their anticonvulsant activity employing the Maximal Electroshock Seizure (MES) Test. The derivative (5) exhibited lower anti-MES activity as compared to the derivative (8) and standard drug, phenytoin. The compound presented anti-MES activity at 100 mg/kg (0.5 hr) and 300 mg/kg (4 hr), respectively. The lipophilicity accounts to be the decisive factor in the expression of anti-convulsant activity. The study demonstrated new possibilities in designing pharmacologically active analogs from a natural product in the near future.

Keywords: Hydantoin; Thiohydantoin; Cuminaldehyde; Antiepileptic; Epilepsy; Seizure.



Discovery of 4-methyl-2-oxo-2H-chromen-7-yl-2-benzamidoacetate as anti-proliferative agents

Chitralkha Deorao Padole*, Mrunali Digambar Amdare, Kamna Rajesh Jogdand, Latika Liladhar Kathane, Nutan Ganesh Kuhite and Debarshi Kar Mahapatra

Department of Pharmaceutical Chemistry, Dadasaheb Balpande College of Pharmacy, Nagpur, Maharashtra, INDIA

E-Mail: pooja.padole2109@gmail.com

Abstract

Coumarin scaffolds are well known for exhibiting tremendous anti-tumor activity. The present work involved synthesis of a coumarin hybrid utilizing hippuric acid and screening of its antineoplastic potential. The coumarin scaffold (3) was fabricated utilizing the Pechman-Condensation method. In this method, the phenolic derivative (1) and 3-keto esters (2) were made to react in the presence of a Lewis acid catalyst (Conc. H₂SO₄). To facilitate substitution at the 7th position of the coumarin scaffold, the hydroxyl group was replaced by the chloride function utilizing POCl₃. In the ultimate step, hippuric acid (5) was made to react in the presence

of conc. HCl to form hippuric acid-coumarin hybrid (6). The in vitro anti-cancer screening was performed against breast cancer cell line MCF-7 employing Sulforhodamine B (SRB) assay. The study represented the synthesis of coumarin hybrid utilizing hippuric acid. The spectroscopic, physicochemical, and elemental analyses data were found to be quite complimentary to the proposed structures. The compound showed a very promising anti-cancer activity (IC₅₀ value of 31.88 μM) as compared to the marketed drug capecitabine (IC₅₀ value of 6.87 μM). The study will surely endorse investigators across the globe in designing more analogs with pronounced activities in coming future.

Keywords: Coumarin; Hippuric acid; Anti-cancer; Anti-neoplastic; Anti-proliferative; Anti-tumor



NS/DTURAI/012

Prediction of Piperidine derivatives as HIV-1 reverse transcriptase Inhibitors: QSAR Studies

M. C. Sharma

School of Pharmacy,

Devi Ahilya University, Khandwa Road, Indore (M.P) - 452 001, INDIA

E-mail: mukeshcsharma@yahoo.com

Abstract

The aim of this study is employing QSAR method to explore the structure-activity relationship of a series of Piperidine derivatives as HIV-1 reverse transcriptase Inhibitors. The best quantitative structure activity relationship model was selected having a correlation coefficient (r^2) of 0.7477, cross-validated correlation coefficient (q^2) of 0.6905. EHOMO is an electronic descriptor, indicating that the highest energy level of the molecule that contains electrons and it governs the molecular properties and reactivates thus measuring the electrophilicity of the molecule. The result of the QSAR approach suggests involvement of removal of electronic group substitution will increase the activity.



Future aspects of radioactive isotopes in pharmacy and medical studies and its therapeutics effects

Avani Swami * Arpit Mahajan, Sumeet Dwivedi and Rupesh Pandey
Swami Vivekanand College of Pharmacy, Indore, (M.P.)

Abstract

Nuclear medicine uses radiation to provide diagnostic information about the functioning of a person's specific organs, or to treat them. Diagnostic procedures using radioisotopes are now routine. Radiotherapy can be used to treat some medical conditions, especially cancer, using radiation to weaken or destroy particular targeted cells. Over 40 million nuclear medicine procedures are performed each year, and demand for radioisotopes is increasing at up to 5% annually. Sterilization of medical equipment is also an important use of radioisotopes. The advances in modern radiation therapy with techniques such as intensity-modulated radiation therapy and image-guided radiation therapy (IMRT and IGRT) have been limited almost exclusively to linear accelerators. Investigations of modern Cobalt-60 (Co-60) radiation delivery in the context of IMRT and IGRT have been very sparse, and have been limited mainly to computer-modeling and treatment-planning exercises. In this paper, we report on the results of experiments using a tomotherapy benchtop apparatus attached to a conventional Co-60 unit. We show that conformal dose delivery is possible and also that Co-60 can be used as the radiation source in megavoltage computed tomography imaging. These results complement our modeling studies of Co-60 tomotherapy and provide a strong motivation for continuing development of modern Cobalt-60 treatment devices.

Keywords: Cobalt-60, intensity-modulated radiation therapy, image guidance, megavoltage computed tomography, tomotherapy



Pharmacognostical Evaluation of Corn Silk (*Zea mays*)

Chetna Mandloi* and Dishant Gupta

Swami Vivekanand College of Pharmacy, Indore (M.P.)

mandloichetna7@gmail.com

Abstract

Phytochemicals are naturally occurring biologically active chemical compounds in plants. In this study focus is given on the collection and preparation of Corn Silk (*Zea mays*), the extraction of Phytochemical compounds by using Soxhlet Apparatus using various Solvents, Analysis of the Phytochemicals present in the plant sample by performing Phytochemical Screening, and determining various Standardization Parameters like Bulk Density, Tapped Density, Hausner's Ratio, Carr's Index, Angle of Repose, % Total Ash, % Water Soluble Ash. Presence of Phytochemicals makes Corn a Medicinal Plant which shows various biological activities and useful in the treatment of various diseases.

Keywords: Phytochemicals, Extraction, Phytochemical Screening



Radioactive Iodine in the Treatment of Thyroid Cancer: An Overview

Aishwarya Nagar*, Sumeet Dwivedi, Satyaendra Shrivastava and P.K. Dubey

Department of Pharmacognosy,
Swami Vivekanand College of Pharmacy, Indore, (M.P.)
aishu.17nagar@gmail.com

Abstract

Radiopharmaceuticals contain radioactive materials called *radioisotopes*. They may be put into a vein, taken by mouth, or placed in a body cavity. They're most often used in small amounts for imaging tests, but larger doses can be used to deliver radiation. Thyroid cancer represents a spectrum of biological and molecular activity. This makes metastatic thyroid cancer challenging to manage. In advanced rapidly progressive thyroid cancer new agents and multimodality care represent promising therapeutic options for patients. The present paper reviews the use of radioisotopes in the treatment of thyroid cancer.

Key-words: Radio-isotopes, Medicine, Thyroid cancer



Neuroprotective Effect of *Buteamonosperma* by Streptozotocin induced Alzheimer

Ankur Joshi ^{*1} and Neelesh Malviya ²

*Research Scholar, Mandsaur University, Mandsaur

1. Modern institute of Pharmaceutical Sciences, Indore

2. Smriti College of Pharmaceutical Education, Indore

ankurpharmacology@gmail.com

Abstract

The present investigation deals with the assessment of neuroprotective effect *Buteamonosperma* flower extract (BMFE) in Alzheimer diseased (AD) rat. Alzheimer disease was induced by administering streptozotocin (3 mg/kg, ICV). Streptozotocin induced AD rats were treated with hydroalcoholic extract of *Buteamonosperma* flower extract (100 and 200 mg/kg, p.o.) for 14 days. Effect of *Buteamonosperma* flower extract in AD rats were assessed by estimating inflexion ratio in the (Elevated maze apparatus), biochemical parameter in the brain tissue like superoxide dismutase, catalase, contents of thiobarbituric acid reactive substances, reduced glutathione and acetylcholinesterase. Treatment with *Buteamonosperma* flower extract (BMFE) shows significant ($p < 0.01$) increased in inflexion ratio in the behavior and transfer latency in elevated plus maze. *Buteamonosperma* flower extract (TCSE) significantly ($p < 0.01$) reduced level of acetylcholinesterase in the brain tissue compared to AD rats. Whereas, treatment with *Buteamonosperma* flower extract (BMFE) significantly reduces the oxidative stress level in AD rats. The present study concludes the neuroprotective effect of *Buteamonosperma* flower extract (BMFE) in AD rats by reducing oxidative stress, and AChE in the brain tissue.

Keywords: *Buteamonosperma* flower extract, Acetylcholinesterase, Superoxide dismutase (SOD), catalase (CAT), contents of thiobarbituric acid reactive substances (TBARS) and reduced glutathione (GSH)



Management of cancer via improved paclitaxel medical nanoparticle formulation

Amrendra Pratap Yadav and Mohan LalKori

Vedica College of B. Pharmacy, RKDF University, Bhopal (MP)-India

Abstract

Paclitaxel (Ptxl) is currently the most common first-line therapeutic option for cancer. However, adverse side effects and problems associated with chemo-resistance, limits its use in clinical settings. Nanoparticle mediated delivery can improve Ptxl delivery and its activity at the tumor site, and considered to be an attractive strategy for cancer therapy. Therefore, we aim to generate improved Ptx medical nanoparticle formulation (PMNPs) using a polyphenol as a carrier, and evaluate its efficacy against Cancer cells. Physico-chemical characterization of this PMNPs was performed using TEM, DLS, FT-IR, TGA, X-RD, and SAXS methods. Its internalization and cellular availability was examined using HPLC method. Cell proliferation and colony formation assays were utilized to evaluate therapeutic efficacy of this exclusivenanoformulation in clinically relevant cell line models (MCF7 and MDA-MB-231). Additionally, molecular effects of this formulation on apoptosis, anti-apoptosis, and drug resistant associated proteins were evaluated using immunoblotting assays. A tubulin stabilization study was performed using confocal immunofluorescence microscopy analysis. The PMNPs formulation showed optimal particle size and zeta potential, which can be efficiently internalized in Cancer cells. PMNPs exhibited potent anti-cancer efficacy via induction of the expression of apoptosis associated proteins (Bax and Bad, cleaved PARP, and caspase 3) and downregulation of anti-apoptotic proteins (Bcl-2 and Bcl-xL) in Cancer cell lines. Further, the expression of chemoresistance-associated proteins were also decreased with the treatment of PMNPs. Thus PMNPs formulation can efficiently be internalized in Cancer cells and induce enhanced therapeutic potential of Ptxl. Development of a targeted drug delivery system would not only reduce the dose of paclitaxel required to kill cancer cells but also minimize long-term paclitaxel associated systemic toxicity and drug-resistance.



An Overview on Hepatoprotective Activity

Nidhi Gupta* and Rakesh Sagar

Ph.D Research Scholar, Faculty of Pharmacy, RKDF University, Bhopal M.P. -India
nidhigupta25may@gmail.com

Abstract

The rising number of patients with liver dysfunction due to overwhelming usage of drugs and alcohol has paved the path for researchers in an interest in herbal medicine. This is because there are only a few universally effective and available options for the treatment of common liver diseases, such as cirrhosis, fatty liver and chronic hepatitis. Liver is the very important part of our body responsible for the maximum metabolic and secretory activities and therefore appears to be a sensitive target site for substances modulating biotransformation. Liver is also associated in detoxification from the exogenous and endogenous challenges like xenobiotics, drugs, viral infections and chronic alcoholism. Liver cell injury caused by various toxic chemicals like certain antibiotics, chemotherapeutic agents, carbon tetrachloride, thioacetamide, excessive alcohol consumption and microbes. India is the largest producer of medicinal plants. The medicinal plants have very important role in the health of human beings as well as animals. As per the WHO estimates, about three quarters of the world's population currently use herbs and other traditional medicines to cure various diseases, including liver disorders. Hence, several phytomedicines (medicinal plants or herbal drugs) are now used for the prevention and treatment of various liver disorders. In recent years, researchers have used scientific methods to evaluate the effects of plants for the treatment of liver ailments, although in many cases the mechanisms and modes of action of these plants, as well as their therapeutic effectiveness, have not been confirmed.



Applications of Radioisotopes in Diagnostic and Therapeutic aspects

Shubham Wani* and Darshana Sharma

Swami Vivekanand College of Pharmacy, Indore, (M.P.)- India

py17.shubhamwani@svcp.ac.in

Abstract

Isotopes are the species of chemical element with same atomic number but different atomic mass. Isotopes, both radioactive and stable, have proved to be very valuable research tools when used as tracers in the study of many of the dynamic processes, both physical and chemical, which occur in the living organism. Isotopes are stable (same number of proton and electron but different number of neutron) which are tools used by researchers worldwide in the diagnosis of disease & the "unstable" (radioactive) isotopes are used in Diagnostic Radiopharmaceutical, Therapeutic Radiopharmaceuticals & Radiotherapy. The Radioactive isotopes undergo spontaneous disintegration accompanied by emission of gamma rays. Diagnostic pharmaceuticals are the isotopes which can be used to examine blood flow to the brain, functioning of the liver, lung, heart or kidney & also predict the effects of surgery. The sufficient amount of the radiopharmaceutical is given to a patient to obtain the required information before its decay. This non-invasive technique acts as a powerful diagnostic tool. A radioisotope must have a half-life short enough for it to decay away soon after imaging is completed. Nuclear medicine scan uses technetium 99m, Myocardial Perfusion Imaging (MPI) uses thallium-201 Chloride or technetium 99m is important for detection of coronary artery disease. Therapeutic Radiopharmaceutical used for treating some pharmaceutical condition. Lutetium-177 is an ideal therapeutic radioisotope which is a beta emitter & causes destruction of only damaged cells. Iodine-131 is used to treat the thyroid for cancers & hyperthyroidism. Phosphorus-32 is used to control a disease called Polycythemia Vera. Boron-10 kills cancerous cells by producing high-energy alpha particles which kills cancer. For targeted alpha therapy actinium-225 is used.

Keywords: Therapeutic Radiopharmaceuticals, Diagnostic Radiopharmaceutical, non-invasive, Polycythemia Vera, cancers, decay.



Application of radioisotopes in personalized medicine

***Chetna Doble, Ayushi Gupta, Pravin K. Sharma and Gajanan N. Darwhekar**
Acropolis Institute of Pharmaceutical Education and Research, Indore

Abstract

Nuclear Medicine' is the medical speciality which utilizes the nuclear properties of radioactive substances in diagnosis, therapy and research to evaluate metabolic, physiologic and pathologic conditions of human body. The use of radionuclides in therapy has been recognized potentially for past few decades. A new emerging aspect of nuclear medicine is the field of “personalized medicine”. Personalized medicine (PM) is a type of medical care in which treatment is generally customized of healthcare, with all decisions and practices being tailored to individual patients in whatever ways possible. PM may be defined in short as the concept of delivering the right treatment to the right patient at the right time. PM involves use of newly developed, powerful technologies allowing detection of biological events at the molecular level, even before symptoms appear. The promise of personalized medicine is a future where disease is detected at the earliest possible time, and treatments would be done to an individual patient's genetic profile. Radionuclide or radionuclide pairs that has emission power suitable for both imaging as well as therapy and which, when conjugated with appropriate carriers, would allow low dose imaging as well as high-dose therapy in same patient along with this, they would also provide the necessary pretherapy information on biodistribution, dosimetry, the limiting or critical organ or tissue, the maximum tolerated dose and so on. Radionuclide, Tin-117m, serves to be promisable in performing targeted molecular therapy based on low-dose molecular imaging. Other recently discovered radionuclide are seem to show great impact in molecular imaging in cancer and other therapies.

Keywords: Radioisotopes, Nuclear medicine, Radionuclide 'tin-117m'



NS/DTURAI/021

Application of radioisotopes using positron emission tomography in distinguish benign from malignant tumours

*Ayushi Gupta, Chetna Doble, Pravin K. Sharma and Gajanan N. Darwhekar
Acropolis Institute of Pharmaceutical Education and Research, Indore

Abstract

Positron emission tomography scanning is one of the most frequently used molecular imaging procedures. PET is a method of functional imaging which can be merged with traditional studies such as CT scan or MRI to improve diagnosis of benign v/s malignant tumor. Currently PET utilizes radioactive isotope like flourodeoxyglucose labeled F-18 which is a glucose analogue that accumulates in tissue which are metabolically active. Malignant tissues tend to have increased metabolism as compared to normal surrounding tissues, which provides an opportunity for differential accumulation of FDG in malignant tissue as compared to benign. Thus, F-18 FDG PET functional information which is merged such as CT scan provides the opportunity to identify tissue with increased metabolism which can help distinguish malignant from benign tissue. The use of PET is primarily in the management of patient with malignant disease about its standard treatment and how it can be impacted by pre-operative imaging. Currently the PET-CT mainly emphasizes on the future directions as how the technology may ultimately be used to improve medical care.

Keywords: Positron emission tomography, F-18 labeled flourodeoxyglucose, CT scan imaging



NS/DTURAI/022

Enoxaparin Sodium: A review on its pharmacology, clinical applications and various methodologies for the estimation in pharmaceutical dosage form

Sandeep Sahu*, Anuj Kumar Asati and Narendra Kumar Lariya
Vedica College of B.Pharmacy, RKDF University Bhopal, (M.P.) - India

Abstract

Enoxaparin sodium belongs to the group of low molecular weight heparins which have a greater bioavailability and longer half-life than unfractionated heparin, permitting less frequent subcutaneous administration. In well controlled trials in surgical patients at high risk of deep venous thrombosis (DVT). In clinical studies, enoxaparin sodium has also prevented coagulation of extracorporeal circulation, maintaining the patency of the circuit in patients undergoing haemodialysis. Thus, enoxaparin sodium represents an effective alternative in the prophylaxis and treatment of thrombosis, with the convenience of less frequent administration than unfractionated heparin and the possible advantage of a lesser propensity for bleeding complications. In this work, we have recompiled all information about enoxaparin sodium and various method developments on enoxaparin sodium.



Comparative study of ranitidine containing effervescent tablets with prepared and marketed formulation for the effective management of peptic ulcer

Amrita Chourasia*¹ and Sandeep Sahu²,

1. Rajiv Gandhi College of Pharmacy, Bhopal, (M.P.) - India

2. Vedica College of B.Pharmacy, RKDF university Bhopal, (M.P.) - India

Abstract

Ranitidine is used in peptic ulcer therapy and available as several brands in the market which makes it difficult to select the safe, effective and economic one. The aim of this study is to Comparative study of ranitidine containing effervescent tablets with prepared and marketed formulation for the effective management of peptic ulcer. The comparisons among the prepared ranitidine containing effervescent tablets with different brands of ranitidine containing effervescent tablets available in local market. Four different brands of were selected for the study. Six quality control parameters: weight variation test, hardness test, thickness, friability, effervescent time and drug release were carried out specified by specified parameter. Result revealed that the f5 formulations of 450 mg tablets were selected as the best formulation because of their physicochemical characteristics. the comparisons between prepared ranitidine containing effervescent tablets and other marketed tablets shows within limits for hardness, weight variation, thickness, friability, effervescent time and drug release. Formulated effervescent tablet had given satisfactory results for various physicochemical properties, uniform granule size, good effervescence time, and release of drug and qualified the suitability of unit dosing of ranitidine hydrochloride as effervescent granules in the management of peptic ulcer.



Traditional medicine agenda for developing countries

Abhishek Dwivedi

ShriSathya Sai Institute of Pharmaceutical Sciences,
RKDF University, Bhopal M.P.-India
abhishek.rkdfuniversity@gmail.com

Abstract

The use of herbal medicine is a population health care approach and there are signs pointing to the continuing increase in the use of such products. In order to achieve "health for all", an effective health agenda must ensure that Western medicine is complemented with traditional medicine. For instance, the WHO in collaboration with the Cameroonian government has put in place a strategic platform for the practice and development of traditional medicine in Cameroon, with a view to harmonizing the traditional medicine practice through the creation of synergy between traditional and modern medicine practices and institutionalization of more harmonized integrated traditional medicine practices by the year 2012. In the age of globalization and of the so-called 'plate world', assessing the 'transferability' of treatments between different cultures is not a relevant goal for research, while the assessment of efficacy and safety that should be based on the regular patterns of mainstream clinical medicine. In the developed countries, it has been reported that sufferers of chronic diseases are turning to herbal remedies as alternative to modern synthetic drugs. This renewed interest in the use of herbal medicine is believed to be motivated by several factors.

Keywords: Herbal Medicine, Traditional, Developed



An Overview on Antidiabetic Potential of Ethnomedicinal Plants

Pradeep Adlak *and Rakesh Sagar

Ph.D Research Scholar, Faculty of Pharmacy, RKDF University, Bhopal M.P. -India
pradeepadlak90@gmail.com

Abstract

Diabetes Mellitus (DM) is a common metabolic disorder throughout the world affecting the people of both developed and developing countries. Diabetes mellitus is caused by the abnormality of carbohydrate metabolism which is linked to low blood insulin level or insensitivity of target organs to insulin. Diabetes mellitus is one of the common metabolic disorders acquiring around 2.8% of the world's population and is anticipated to cross 5.4% by the year 2025. Since long back herbal medicines have been the highly esteemed source of medicine therefore, they have become a growing part of modern, high-tech medicine. Several herbs have been known to cure and control diabetes without causing any side effects. Key findings: The present review is an attempt to list the plants with anti-diabetic activity, originating from different parts of world. Thus, the present paper deals with the study of different ethnomedicinal plants for the antidiabetic Potential. The review also discusses the management aspect of diabetes mellitus using these plants and their active

Keywords: Antidiabetic, Ethnomedicinal, Plants



A Review: Gastro-retentive Novel Drug Delivery Systems

Devendra Kumar Bhopte *and Rakesh Sagar

Ph.D Research Scholar, Faculty of Pharmacy,

RKDF University, Bhopal M.P.-India

devbhops@gmail.com

Abstract

Novel drug delivery systems are designed to achieve a continuous delivery of drugs at predictable and reproducible kinetics over an extended period of time in the circulation. The potential advantages of this concept include minimization of drug related side effects due to controlled therapeutic blood instead of oscillating blood levels, improved patient compliance due to reduced frequency of dosing and the reduction of the total dose of drug administered. Hence, the combination of both sustained release and control release properties in a delivery system would further enhance therapeutic efficacy. The aim of Novel Drug Delivery System is to provide a therapeutic amount of drug to the appropriate site in the body to accomplish promptly and then maintain the desired drug concentration. The drug- delivery system should deliver drug at a rate control by the necessarily of the body over a specified term of treatment.

Key words: - Gastro-retentive, Drug Delivery Systems, Site-Specific, Floating System



Formulation and evaluation of dextrin based budesonide microspheres for colon targeted delivery

Rinku Gonekar and Mohan LalKori

Vedica College of B.Pharmacy,
RKDFUniversity, Bhopal M.P.-India

Abstract

The objective of the present study is to develop colon targeted drug delivery system by using dextrin (polysaccharide) as a carrier for budesonide. Microspheres of the budesonide containing dextrin and various excipients were prepared by emulsion solvent evaporation technique. The prepared microsphere were evaluated by different evaluation parameters like particle size, drug entrapment, percentage yield, shape and surface study and in vitro drug release study. Drug release profile was evaluated in simulated gastric ph 1.2, intestinal fluid ph 6.8 and simulated colonic fluid ph 7.4. Best formulation was decided on the basis drug release profile in the simulated media. Budesonide microspheres released 95-99% of drug in simulated colonic fluid with 4% human fecal matter solution. Budesonide microspheres showed no significance change in practical size and % residual upon storage for three months as per ICH guidelines. The results of in-vitro studies of budesonide microspheres indicate that dextrin are most suitable carrier to deliver the drug specifically in the colonic region.

Keywords: Budesonide, microsphere, dextrin, colon specific drug delivery.



Ethnomedicinal and Pharmacological importance of *Plumeria pudica* Linn.

Priyanka Kumawat^{1*}, Neetu Singh² and Sumeet Dwivedi³

1, Ujjain Institute of Pharmaceutical Sciences, Ujjain, (M.P.) INDIA

2, Modern Institute of Pharmaceutical Sciences, Indore (M.P.), INDIA-452020

3, Department of Pharmacognosy & Biotechnology

Swami Vivekanand College of Pharmacy

Indore (M.P.), INDIA-452020

sumeet_dwivedi2002@yahoo.com

Abstract

Plumeria pudica Linn commonly known as Nag champa is a fast-growing, medium size tree, that is botanically belongs to family Apocynaceae. The plant can reach a height up to 5-8 feet with many branches on the upper part. Small trees or herbs with obanceolate leaves. Leaves are alternate, bounded at twig tips, strongly recovered margin, flowers are white, fragrant, in corymbose clusters. The white flowers bearing five petals and have fragrance. The plant is used for the cure of rheumatism, diarrhoea, blennorhea, venereal disease, leprosy, psychosis and diuresis etc. *Plumeria* species have also been investigated for isolation of irridoids and triterpenoids, which exhibited algicidal, antibacterial and cytotoxic activities. The present paper reviews the ethnomediicnal and pharmacological importance of the selected plant species.



Development and validation of analytical methods for estimation of phyto-constituents in herbal formulations

Rupali Bhavsar* and Sumeet Dwivedi

Swami Vivekanand College of Pharmacy

Indore (M.P.), INDIA-452020

rupalibhavsar@svcp.ac.in

Abstract

Analytical method development for herbs and their formulation need to develop in order to standardize the herbal formulations and their phyto-constituents. There are various available herbal formulations in the market to be used by the patient and their analytical parameters need to be developed.

Traditional medicine implies knowledge and practice of herbal healing for the prevention, diagnosis, and elimination of physical, mental, or social imbalance. The cost of health care is rising at an alarming rate throughout the world. At the same time, the world market for phytopharmaceuticals is growing steadily. The World Bank estimates that trade in medicinal plants, botanical drug products, and raw materials are growing at an annual rate of between 5 to 15 %. The quality assessment of herbal formulations is of paramount importance in order to justify their acceptability in modern system of medicine. One of the major problems faced by the herbal industry is the unavailability of rigid quality control profiles for herbal materials and their formulations. Standardization is a system which ensures that every packet of medicine that is being sold has the correct substances in the correct amount and will induce its therapeutic effect. Standardized herbal products of consistent quality and containing well-defined constituents are required for reliable clinical trials and to provide consistent beneficial therapeutic effects. Pharmacological properties of an herbal formulation depend on phytochemical constituents present therein. Development of authentic analytical methods which can reliably profile the phytochemical composition, including quantitative analyses of marker/bioactive compounds and other major constituents, is a big challenge to scientists. India can emerge as the major country and play the lead role in production of standardized, therapeutically effective herbal formulations. India needs to explore the medicinally important plants. This can be achieved only if the herbal products are evaluated and analyzed using sophisticated analytical methods. Keeping the above facts in view the present work was undertaken to develop analytical methods for estimation of phyto-constituents in herbal formulations.



Diagnostic and Therapeutic efficacy of Radioisotopes

Versha Mittal* and Khushboo Arora
Department of Pharmaceutical Chemistry
Swami Vivekanand College of Pharmacy
Indore (M.P.), INDIA-452020

Abstract

Many elements which found on earth exist in different atomic configurations and are termed isotopes which have same atomic number but differ in their atomic mass. This unstable element decay by emission of energy such isotopes, which emit radiation, are called radioisotopes. Using of these isotopes in various sectors like industries, agriculture, healthcare and research centers has got a great importance at present. In health care sector, these isotopes are used in nuclear medicine as diagnostic and therapeutic modalities.

Keywords: Atomic Mass , Radioisotopes , Healthcare , Diagnostic



Pelletization Techniques: A review

Shivane Vyas* and Ankur Jain

Lakshmi Narain College of Pharmacy, Indore (MP)-INDIA
shivaneevyas8@gmail.com

Abstract

As compared to single-unit dosage forms, oral multiparticulate drug-delivery systems offer biopharmaceutical advantages in terms of predictable distribution and transportation of drugs into the gastro-intestinal tract. Pelletization technique is an agglomeration method that converts fine bulk drug powders and excipients into small, free flowing, spherical or semi-spherical units, which are called as pellets. The use of pelletization and pellets leads to an improvement in the flow ability, appearance and mixing properties, thus avoiding excessive dust and reducing segregation and generally, eliminating undesirable properties and improving the physical or chemical properties of fine powders. Although pellets have been used in the pharmaceutical industry for more than four decades, with the advantage of controlled release technology, that affect full impact of the inherent advantages of pellets over single unit dosage forms have been realized, not only has focused on refining and optimizing existing pelletization techniques, but also focused on the development of novel approaches and procedures for manufacturing of pellets. The manufacturing techniques include Drug layering, Extrusion-Spheronization, Cryopelletization, Compression, Balling, Hot-Melt Extrusion Technology, Freeze pelletization, Spray-drying & Spray-congealing methods.



Design, development and evaluation of transdermal patch using aqueous extract of *Eclipta alba*

Suman Gehlot* and Sumeet Dwivedi

Swami Vivekanand College of Pharmacy, Indore, (M.P.) - INDIA
sumangehlot81@gmail.com

Abstract

Conventional drug delivery system has many problems so bulk of research has now shifted from synthetic drugs to herbal drugs. This is possible because of the vast variety of bioactive molecules in the plants and their higher safety margin. At present, the most common form of delivery of drugs are the oral route because it has advantage of easy administration. But it also has significant drawbacks namely poor bioavailability due to first pass metabolism and the tendency to produce fluctuation in plasma drug concentration due to the frequency in dosing which can be both cost prohibitive and inconvenient. This present investigation was aimed to formulate transdermal patches using aqueous extract of *Eclipta alba* and various polymers by solvent preparation method. The formulated transdermal patches were evaluated for their physiochemical characteristics such as physical appearance, weight uniformity, thickness, folding endurance; moisture content.

Key-words: *Eclipta alba*, Transdermal patch, Formulation



In vitro evaluation of aldose reductase inhibitory potential of *Bougainvillea spectabilis*

Kushagra Dubey*, Raghvendra Dubey#, Revathi A Gupta# and Arun Gupta#

* Smriti College of Pharmaceutical Education, Indore (M.P.)

Faculty of Pharmacy, Dr. A.P.J. Abdul Kalam University, Indore (M.P.)

Abstract

Leaves extracts of *Bougainvillea Spectabilis* is evaluated by *in-vitro* aldose reductase inhibitory activity. The dried Leaves powder of *Bougainvillea Spectabilis* Linn was extracted by successive solvent extraction method to obtained hydroalcoholic and aqueous extract. Water saturated n-butanol was used for further extraction of the dried hydroalcoholic extract. The layers were separated and n-butanol layer was acidified with 1 N KOH to obtain the raw saponin extract. All the extracts were screened for *in vitro* aldose reductase inhibitory activity in purified goat lens using Hayman and Kinoshita method in which decrease in NADPH concentration was estimated at 340nm using UV Visible spectrophotometer. From the result it was observed that all the three extracts inhibit AR activity, but at different extent. From dose response curve it was found that saponin extract (SE) is more effective followed by aqueous extract (AE) and methanolic extract (ME) with IC₅₀ values of 32.66 ±0.33 µg/ml , 73.48 ±1.13 µg/ml and 131.0 ±1.65 µg/ml respectively. In the end it was concluded that among the three extracts, saponin extract of *Bougainvillea Spectabilis* is potent in inhibiting the aldose reductase enzyme which contribute major role in the diabetes complication.

Key words: Aldose Reductase, Goat Eye Lens, NADPH, Saponin Extract, Methanolic Extract.



Development and Characterization of liposomal aerosols for improved delivery of etoposide to the lungs

Neelima Salvi^{*1,2}, S.K. Jain¹ and Neelesh Malviya²

¹Department of Pharmaceutical Sciences, Dr. Hari Singh Gour Vishwavidyalaya,
Sagar - 470 003, MP

² Department of Pharmaceutics, Smriti College of Pharmaceutical Education, Indore-452010,
M.P.

Abstract

The present study deals with firstly at preparation, characterization and performance evaluation of Etoposide loaded aerosolized liposomes for their selective presentation to lungs, for the treatment of lung cancer. Secondly, to enhance the delivery of drug to the lungs via site specific targeting. Soya phosphatidyl choline and cholesterol based liposomes were modified by coating them with mannose. The prepared formulations were characterized in vitro for vesicle size distribution and percent drug entrapment. Aerosolization was done by air jet nebulizers. *In-vitro* airways penetration efficiency of the liposomal aerosols was determined by percent dose reaching the peripheral airways; it was recorded 1.4-1.6 times higher as compared to plain drug solution based aerosol. *In-vivo* tissue distribution studies on albino rats suggested the preferential accumulation of mannose coated formulations in the lungs. Higher lung drug concentration was recorded in case of ligand-anchored liposomal aerosols as compared to plain drug solution and plain liposome based aerosols. The drug was estimated in the lung in high concentration even after 24 hr. The drug localization index calculated after 6 hr. was nearly 1.42-4.47 and 4.16 fold respectively for plain, galactose and mannose coated liposomal aerosols as compared to plain drug solution based aerosols. These results suggest that the ligand-anchored liposomal aerosols are not only effective in rapid attainment of high drug concentration in lungs and also maintain the same over prolonged period of time.



An over view of radioisotope technetium-99m

Gopesh Sharma*,Gopala Joshi, Archana Tiwari and Sumeet Dwivedi

Swami vivekanand college of pharmacy, Indore (M.P)-INDIA

py18.gopeshsharma@svcp.ac.in

Abstract

Technetium 99m is a long-lived isomer of technetium 99, widely used in nuclear medicine. The term 'isomer' refers to those nuclei that are able to survive in excited states for abnormally long periods of time. Excited nuclei normally return to their ground states after a fraction of a second, though in rare cases this transition can be inhibited and greatly slowed down. This is the case with technetium 99m, which exists for several hours before returning to the normal state of technetium.

The technetium-99 precursor is molybdenum-99, a radioactive nuclei generally produced in reactors. The 66 hours molybdenum radioactive half-life give enough time to transport it to hospitals and to extract chemically technetium 99m. The radioisotope placed in a radiopharmaceutical serum is then injected into the patient, which allows gamma camera scans providing accurate pictures of the patient's body. Technetium 99m is the most commonly used radioisotope in the field of nuclear imaging being involved in 80% of scintigraphies.

Keywords - Nuclear imaging, Radiopharmaceutical serum, Scintigraphies, Isomer



Clinical trials: An overview

Arun Singh Bhandari* and Abhishek Gehlot

Swami Vivekanand College of Pharmacy, Indore (M.P)-INDIA

The purpose of clinical trials is to answer scientific questions. Therefore, these studies follow strict, scientific standards which protect patients and help produce reliable clinical trials results. Clinical trials are one of the final stages of a long and careful research and development process. The process often begins in a laboratory, where scientists first develop and test new ideas. Clinical trials are carefully designed, reviewed and completed. The principal investigator is the person in charge of the trials. He or she is a scientist who's is an expert in what the clinical trials is about. The principal investigator takes the lead in designing the clinical trials, choosing the research team and carrying out the study. Often, other scientists, called investigators, are part of the research team.

Keywords: Scientific standards, development process, investigator.



Implication of radioactive substances in the treatment of breast cancer

Shruti Yadav* and Sumeet Dwivedi

Swami Vivekanand College of Pharmacy, Indore (M.P)-INDIA

Abstract

Breast cancer is the form of cancer which is found in cells of Breast. After skin cancer, breast cancer is the most common cancer in women, breast cancer can occur in both male & female, but it's far more in women. When some breast cells begin to grow abnormally. These cells divide more rapidly than healthy cells do and continue to accumulate, forming a lump or mass. Breast cancer most often begins with cells in the milk-producing ducts. Obesity, inherited genes that increase the risk of cancer, radiation exposure. Removing the breast cancer (lumpectomy), Removing of entire breast (mastectomy) etc. The present paper covers all these aspects of breast cancer.



Overview Information on Marijuana

Manas Katare*, Sourabh Pandya, Vivek Sisodiya, Swapnil Shinde, Archana Tiwar and Sumeet Dwivedi

Swami Vivekanand College of Pharmacy, Indore (M.P)-INDIA
py18.manaskatara@svcp.ac.in

Abstract

Marijuana is an herb. It contains chemicals called cannabinoids. Cannabinoids affect the central nervous system, which includes the brain and nerves. Cannabinoids are found in the highest levels in the leaves and flowers. These are the parts of the herb that are used to make medicine. Some people take marijuana extract by mouth or as a spray to be applied under the tongue for pain and symptoms of multiple sclerosis. Some people breathe in marijuana as a medicine. Marijuana is smoked for nausea, vomiting, an eye disease called glaucoma, to increase appetite, to reduce swelling of mucous membranes like the inside the mouth, for leprosy, fever, epilepsy, dandruff, depression, anxiety, sleep, hemorrhoids, HIV/AIDS, obesity, Parkinson's disease, asthma, bladder infections, cough, nerve pain, cancer pain, fibromyalgia, and multiple sclerosis. It is also inhaled to reduce the chance that the body rejects a kidney if it has been donated from another person. In addition, marijuana is smoked to reduce symptoms of amyotrophic lateral sclerosis (ALS, Lou Gehrig's disease). Some people use marijuana to feel good. In this case it is used as a 'recreational drug' and is either taken by mouth or smoked (inhaled).



Development of new era of radiography

Varsha Gupta*, Rupali Bhavsar and Pooja Pancholi

Swami Vivekanand College of Pharmacy, Indore (M.P)-INDIA

Abstract

The introduction of quantitative digital imaging creates intelligence out of the image, making it no longer passive, but active. Spectral resolution delivers anatomical information and the ability to characterize structures. Hybrid Imaging is opening up new metabolic, molecular imaging frontiers so you can see both the cellular function as well as the molecular process underway inside a living patient – enabling assessment of how well a treatment is working so it can be adapted as needed. Add to that, decision support and algorithms that can, for example, track tumors during treatment. The bottom line? An uncertain diagnosis leads to more tests and more costs. The right tests, integrated with relevant information about the patient, will create the shortest path to the best care at the lowest cost. It is clear that the confluence of information from multiple sources – whether it's electronic medical records, genomic maps of the patient, family history – increases diagnosis confidence. To use this data effectively for enhancing patient care, I see radiologists becoming "integrators," of data and analytics. Radiologists will play an increasingly important role within an integrated team of professionals – specialists, care team members, and even the patients – to connect the dots through patient data, and develop a complete, holistic view of the patient's care and treatment plan. Advances in radiology in the next five years will rewrite everything we know from the last 40 – we are on the precipice of major clinical breakthroughs and radiology can lead the way. New innovations are enabling radiology to add the human element in healthcare. The fact is, a relaxed patient takes a better image and doesn't need to be re-tested. Today's MRI can include a soothing audio and visual accompaniment. Equally, breakthroughs in radiation dose reduction and meaningful design are significantly changing the healthcare experience for the better. From a more comfortable and less stressful mammogram, to tracking the radiation dose of patients over time (and now, clinicians too), radiologists will be playing a key role in moving patients across the health continuum with more precision and efficiency.



NS/DTURAI/040

Prostate cancer treatment via radioisotopes

Rajkumar Kumawat*, Sakshi Singotia and Rupesh Pandey
Swami Vivekanand College of Pharmacy, Indore (M.P)-INDIA

Abstract

Prostate cancer continues to be a leading cause of morbidity and mortality in men with prostate cancer. Over the last decade, the treatment landscape for patients with prostate cancer has drastically changed, with several novel agents demonstrating an improvement in overall survival in large, multi-institutional randomized trials. Treatment of prostate cancer by radical prostatectomy, chemotherapy, immunotherapy; treatment with radioisotopes has largely been in the palliative setting. However, the first in class radiopharmaceutical radium-223 has emerged as the only bone-directed treatment option demonstrating an improvement in overall survival.

Surgery for Prostate Cancer

Keywords : Prostate Cancer, treatment, Radioisotopes



Effects of radiation on the growth of plants

Harsh Pendharkar* and Sumeet Dwivedi

Swami Vivekanand College of Pharmacy, Indore (M.P)-INDIA

Abstract

Continued world population growth results in increased emission of gases from agriculture, combustion of fossils fuels, and industrial process. This causes changes in the composition of the atmosphere. Evidence is emerging that increased solar ultraviolet -B (UV-B) radiation is reaching the earth's atmosphere, due to stratospheric *ozone* depletion. In many research it is found that UV-B radiation has been harmful to plants, damaging DNA, protein, lipids, and membranes. UV radiation affects the plant growth and sprouting. Depends on the how much radiation is released. Soil can become compacted lose the nutrients needed for plants to grow. UV also disrupts stomata resistance, damages plant cells, increases cell mutation, reduces plant fertility etc. On the other hand recent studies says that, the effects of irradiation with low doses (0, 10, 20, 30) of radioactive cobalt (Co^{60}) gamma rays on seed germination, shoot and epicotyls growth of hard wheat (*Triticum durum*) were investigated under laboratory and glasshouse conditions. Irradiated seed compared to the control. However, improvements of +18 and +32% were, respectively obtained in root number and root length at the 20- grays (Gy) dose. Moreover, the 20-Gy-irradiation dose generated an increase of +33% in epicotyls length. The 20-Gy-irradiation dose improved the root length by +32% and root number by 75% in plants grown on liquid medium. A lower root length increase of +23% was obtained with the same treatment under glasshouse growing conditions. These results show that the in depth development stimulation of hard wheat roots following gamma ray treatment may be used for drought control.



Emerging Role of Nanotechnology in Sunscreen

Ashutosh Joshi*, Aparajita Sharma and Shikha Agrawal
Swami Vivekanand College of Pharmacy, Indore (M.P)-INDIA

Abstract

Sunscreen plays a vital role as consumer products for photo protective measures. Traditional sunscreen have UV filters, such as iron, titanium and zinc which are capable to block UV A and UV B radiation and hence block broader spectrum of UV light but are limited by their texture, appearance and difficulty to suspend in non-greasy vehicles. The current era of nanoformulations has led to titanium dioxide and zinc oxide based products with superior properties that are far more desirable. The Nanoparticles used in sunscreen with their higher surface-to-volume ratio and the presence of polar oxygen on their exterior, have increased solubility in water-based emulsions, allowing them to be suspended in greaseless, cosmetically pleasing vehicles. Small particles of sunscreen also allow for denser packing of these blocking agents between the corneocytes of the upper epidermis and stratum corneum, covering the skin more evenly resulting in an effective and more elegant product.



Rubella: Complications & Treatment

Premlata Patel* and Sumeet Dwivedi

Swami Vivekanand College of Pharmacy, Indore, (M.P.) - INDIA
babitapatel088@gmail.com

Abstract

Rubella is an infectious disease transmitted by the rubella virus. The signs of the disease are: swelling of lymph nodes in the neck and a skin rash which first appears on the face and then rapidly spreads to other parts of the body. The complications of rubella include encephalitis and joint pain. Infection with rubella during pregnancy can cause serious damage to the child, including cataracts, deafness, heart defects and mental retardation. There is no drug therapy for rubella. However, the disease can be prevented by immunization. The present paper deals with the disease profile, prevention, complications and treatment of the Rubella.

Key-words: Rubella, Complication, Treatment



**An Institute is as Good as the People Behind it.....
Our Faculty**



**Dr. P.K. Dubey
Director**



**Dr. Shikha Agrawal
Vice-Principal**



**Dr. Satyaendra K. Shrivastava
Dean (Academics & Administration)**



**Dr. Rupesh K. Pandey
HOD**



**Mr. Dishant Gupta
HOD**



**Dr. Sumeet Dwivedi
Associate Professor**



**Mrs. Kushboo Arora
Associate Professor**



**Mrs. Archana Tiwari
Associate Professor**



**Mrs. Priyanka Pandey
Associate Professor**



**Mrs. Prerna Chaturvedi
Associate Professor**



**Mrs. Pooja Pancholi
Asst. Professor**



**Mrs. Rupali Bhawsar
Asst. Professor**



**Mrs. Anuradha Rathore
Asst. Professor**



**Ms. Suman Gehlot
Asst. Professor**



**Mrs. Aprajita Chaturvedi
Asst. Professor**



**Ms. Namrata Gupta
Asst. Professor**



**Mrs. Darshana Sharma
Asst. Professor**



**Ms. Asharani Pyathi
Asst. Professor**



**Mrs. Pooja Tiwari
Asst. Professor**



**Mr. Hiralal Birla
Asst. Professor**



**Mr. Aneesh Ghosi
Asst. Professor**



**Mrs. Ankita Mane
Asst. Professor**



Swami Vivekanand College of Pharmacy was established by Swami Vivekanand Takniki Sansthan, Indore in the year 2004. The college is approved by PCI, AICTE, New Delhi, affiliated to RGPV and recognized by Directorate of Technical Education, Govt. of Madhya Pradesh and ISO 9001-2008 certified. Spread over a lush green campus of 25 acres of land, SVCP is blessed with beautiful natural surroundings ecofriendly atmosphere and a highly conducive environment for quality education and all around development of students. It is located at Indore Khandwa highway (SH-27). It is approximately 9 Kms away from Indore (Bhanwarkuan).

Load Map



SWAMI VIVEKANAND COLLEGE OF PHARMACY

Khandwa Road, Near Toll Naka, Indore - 452 020 (M.P.)

Phone: 91 – 07324 405003, 405027; Website : www.vivekanandgroup.com

