E-SYMPOSIUM PROCEEDINGS

A bimonthly pharma refresh brought to you by Journal of Pharma Insights and Research (JOPIR) ISSN No. 3048-5428
OCTOBER 2024 VOL. 2, ISSUE 5 DOI: 10.5281/ZENODO.13888365

Contents

E-SYMPOSIUM PROCEEDINGS

A bimonthly pharma refresh brought to you by Journal of Pharma Insights and Research (JOPIR) ISSN No. 3048-5428

OCTOBER 2024 VOL. 2, ISSUE 5 DOI: 10.5281/ZENODO.13888365

HEALING PEPTIC ULCERS: A STUDY OF *OCIMUM TENUIFLORUM* ANTIOXIDANT AND MUCOPROTECTIVE EFFECTS

Mr. Apoorv Patil

UG Scholar, Department of Pharmacology, KGRDCP, RI Karjat, Maharashtra, India.

apoorvpatil9@gmail.com

Abstract: This study investigated the pharmacological potential of *Ocimum tenuiflorum* in preventing and treating peptic ulcers. The leaves were carefully collected from the Western Ghats of India, dried in a shed, and extracted using a Soxhlet apparatus. Phytochemical analyses were conducted to confirm the presence of important phytoconstituents. The anti-ulcer efficacy of the extract was assessed using an ethanol-induced ulceration model in mice, a widely accepted method for ulcer studies. The extract's antioxidant and free radical scavenging activities were further evaluated through DPPH assay and DMSO tests. The healing effects of the extract were analysed following seven days of administration at doses of 125 mg/kg, 250 mg/kg, and 500 mg/kg, after which the ulcer index, pH of the gastric tissue, and histopathological changes were measured. Additionally, malondialdehyde and nitric oxide levels were assessed to evaluate the mucoprotective properties of the extract. The results showed that doses of 250 mg/kg and 500 mg/kg significantly reduced the ulcer index and provided considerable mucosal protection, as demonstrated by histopathological evaluation. The plant extract exhibited an IC 50 value of 226 µg/ml, indicating strong antioxidant and free radical scavenging properties. Overall, *Ocimum tenuiflorum* demonstrated notable gastric cytoprotective and ulcer-healing effects, although further investigations are necessary to clarify its underlying mechanisms of action.

Keywords: *Ocimum tenuiflorum*, Ethanol-induced ulcer, DPPH assay, Malondialdehyde, Ulcer index.

EXPLORING THE SYNERGISTIC POTENTIAL OF FLAVONE AND NIACIN IN DEPRESSION TREATMENT

Mr. Vivek Kumar Tiwari

Assistant Professor, Gokaraju Rangaraju College of Pharmacy, Hyderabad, Telangana, India.

vivek8033@grcp.ac.in

Abstract: Depression, a complex and debilitating mood disorder, continues to challenge researchers and clinicians worldwide. Despite the availability of various treatment options, many patients experience limited efficacy and undesirable side effects. In recent years, natural compounds have gained attention for their potential antidepressant properties. Flavone, a subclass of flavonoids abundant in fruits and vegetables, and niacin (vitamin B3), a water-soluble vitamin found in various foods, have individually shown promise in alleviating depressive symptoms through distinct mechanisms of action. This research work explores the emerging evidence on the combined therapeutic effects of flavone and niacin in depression treatment, highlighting their synergistic potential and underlying mechanisms. Dosage of niacin and flavone were selected in 1:2 ratio i.e (25+50=75 mg/kg/b.w) on the basis of their efficacy and safety to treat depression prominently. Models like Sucrose test (anhedoenia) and social deficit test were selected for this research and the result showed synergistic effect of niacin and flavone. Niacin acts by serotonin modulator, and flavone is purely an efficient antioxidant agent, together with anti-inflammatory and Neuroprotective property it becomes the perfect choice in alleviating depression at bay. Hence the combination can be used as an effective alternative in treating depression naturally.

Keywords: Depression, Flavone, Niacin, Antidepressant, Synergistic, Anhedoenia

E-SYMPOSIUM PROCEEDINGS

A bimonthly pharma refresh brought to you by Journal of Pharma Insights and Research (JOPIR) ISSN No. 3048-5428

OCTOBER 2024 VOL. 2, ISSUE 5 DOI: 10.5281/ZENODO.13888365

REVIEW OF FUTURE MEDICINE: RECENT BREAKTHOUGHS IN PRECISION ONCOLOGY- NATURE MEDICINE

Miss. R. Vidhyalakshmi

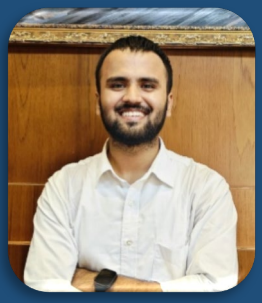
UG Scholar, Faculty of Pharmacy, Bharath Institute of Higher Education And Research, Selaiyur Chennai, Tamilnadu, India.

vidhyarajan2004@gmail.com

Abstract: Recent advancements in precision oncology have significantly transformed cancer treatment paradigms, emphasizing tailored therapies based on individual patient profiles. This review in Nature Medicine highlights breakthroughs in genomic profiling, which enable the identification of specific mutations driving tumor growth. Such insights facilitate the development of targeted therapies that improve patient outcomes and reduce adverse effects. Key findings include the integration of artificial intelligence in analyzing vast genomic data sets, leading to more accurate predictions of treatment responses. Additionally, novel biomarkers have been discovered that predict patient sensitivity to specific drugs, enhancing the personalization of treatment plans. The review also discusses the role of immunotherapy, particularly checkpoint inhibitors, which have shown promise in various cancer types by harnessing the immune system to combat tumors. Moreover, the article underscores the importance of multidisciplinary approaches in clinical settings, combining expertise from oncology, genetics, and bioinformatics to optimize patient care. Challenges such as accessibility to advanced genomic testing and disparities in treatment availability are also addressed, calling for policy changes to ensure equitable access to these innovative therapies. In conclusion, precision oncology represents a paradigm shift in cancer management, with ongoing research poised to further refine therapeutic strategies and improve survival rates.

Keywords: Precision Oncology, Genomic Profiling, Targeted Therapies, Artificial Intelligence, Immunotherapy, Biomarkers.

AN INNOVATIVE NOVEL TARGETED APPROACH: PROTACS AS PROMISING TOOL IN AUTOIMMUNE DISEASES



Mr. Arun Pachauri, Miss Shweta Sharma

UG Scholar, Parul Institute of Pharmacy, Vadodara, Gujarat, India.

pachauris999@gmail.com

Abstract: Proteolysis targeting chimeras (PROTACs) is a unparalleled novel protein targeting enzyme strategy i.e., a ubiquitin-protease system to eradicate, transformed, denatured & deleterious proteins in cells by re-using and protein devastating mechanism which offers a subversive pharmaceutical approach via boosting improvement in development of personalized medicines & drug discovery processes together with 3-D printing to treat autoimmune diseases by targeting a diseases related proteins & pathways i.e., 50 cytokines signalling with other inhibitory & modulatory pathways i.e., STAT, SREBPs, BTK & ferroptosis etc. which sparks it as one of the promising therapeutic approaches to cure autoimmune diseases. In recent years as per the trend of discoveries of developing personalizing treatment for particular diseases the PROTACs can be an effective peculiar strategy to overcome the obstacles faced during the treatment of various diseases not only the autoimmune maladies but also like, neurodegenerative , cancers & infectious maladies. Though, numerous challenges stands i.e., cost, time-frame of treatment but to overcome the different pathological conditions PROTACs can play a role of potential art of war in treating autoimmune maladies along with others. However, more research attestations are needed to ensure the feasibility, potency, and implementation of PROTACs as novel strategy but it can be the more effectual tool in conditions where the targets are well known & could be acts as a boon for the pharmaceutical industries & healthcare.

Keywords: Autoimmune disorders, Novel treatment, PROTACs, Therapeutic agents, Personalized Medicine.

E-SYMPOSIUM PROCEEDINGS

A bimonthly pharma refresh brought to you by Journal of Pharma Insights and Research (JOPIR) ISSN No. 3048-5428

OCTOBER 2024 VOL. 2, ISSUE 5 DOI: 10.5281/ZENODO.13888365

RECENT DEVELOPMENTS AND INNOVATIONS IN DRUG RESEARCH AND DEVELOPMENT

Miss Sana Sahil[1], Nandini Singh[2], Nida Faheem[1], Abhishek Kumar Sen[3], Ganesh Prasad Patel[4], Shaikh Suleman A.R[5]

[1] *Associate Professor, College of Pharmacy, SSSUTMS University Sehore, Madhya Pradesh, India*
[2] *Assistant Professor, YBN University, Ranchi, Jharkhand, India*
[3] *Vice Principal and Associate Professor, Ideal Institute of Pharmacy, University Of Mumbai, Maharashtra, India*
[4] *Associate Professor, Sagar Institute of Pharmacy and Technology, Bhopal, Madhya Pradesh, India*
[5] *Assistant Professor, Late Bhagirathi Yashwantrao Pathrikar College of D.Pharmacy, Aurangabad, Gujarat, India*

sana.sahil991@gmail.com

Abstract: The pharmaceutical industry has experienced remarkable progress in drug research and development in recent years. Precision medicine, grounded in genomic advancements, tailors treatments to individual patients, significantly improving drug efficacy and minimizing adverse effects. This personalized approach marks a shift from the traditional one-size-fits-all model of healthcare. Digital health technologies have revolutionized patient care and monitoring. Wearable devices, mobile applications, and telemedicine platforms enable continuous health tracking and remote consultations, empowering patients and healthcare providers with real-time data and improved access to care. The advent of 3D printing allows for the production of medications with specific dosages, release profiles, and even combinations of multiple drugs in a single dose form, enhancing patient compliance and treatment outcomes. Artificial intelligence has become an indispensable tool in drug discovery and development. Machine learning algorithms can rapidly analyze vast datasets, identify potential drug candidates, and predict their efficacy and safety profiles, significantly accelerating the drug development process. Nanotechnology has transformed drug delivery methods. Nanoparticles can enhance drug solubility, improve targeting to specific tissues, and control release rates, leading to more effective treatments with fewer side effects. Emerging trends such as gene therapy and cell therapy show immense potential in treating previously incurable diseases. These cutting-edge approaches offer hope for patients with genetic disorders, cancers, and other complex conditions. Ongoing research continues to push the boundaries of pharmaceutical science, promising novel therapies and improved health outcomes for patients worldwide.

Keywords: Precision medicine, Digital health, Nanotechnology, Artificial intelligence, Gene therapy.

EVALUATION OF ANTHELMINTIC ACTIVITY OF *DATURA STRAMONIUM*: AN IN SILICO DOCKING APPROACH

Mr Ganesh Thirunavukkarasu

UG Scholar, Karpagam College of Pharmacy, Coimbatore, Tamil Nadu, India

ganeshbpharm2002@gmail.com

Abstract: The present study was conducted to evaluate the anthelmintic activity of *Datura stramonium* through an in silico docking approach, focusing on the binding affinity of phytochemicals from *D. stramonium* to the protein beta-tubulin. For the docking studies, AutoDock Vina was utilized to identify the potent phytochemicals of *D. stramonium* against TUBULIN-COLCHICINE. The 3D structure of the target macromolecule was obtained from the Protein Data Bank (PDB ID: 1SA0) and prepared using Discovery Studio Biovia. *D. stramonium* contains a wide range of phytochemicals, for the docking studies, phytochemicals were compiled from existing research studies, and their structures were retrieved from the PubChem database. Prior to conducting the docking studies Molinspiration software was used to estimate the drug-likeness properties based on Lipinski's rule of five. Mebendazole was taken as a standard drug; it is effective against parasitic infections and exhibits a binding energy of -7.2 kcal/mol. Phytochemicals of *D. stramonium* such as Daturataturin A, Withanolide D, Daturaolone, Chrysin, Quercetin, Beta-Amyrin and Kaempferol displayed better binding affinities compared to the standard drug mebendazole. These findings suggest that the phytochemicals of *D. stramonium* may act as effective inhibitors, providing a foundation for further in-depth studies and potential therapeutic applications.

Keywords: *Datura stramonium*, In silico docking, Anthelmintic activity, Parasite control, Phytochemicals.

E-SYMPOSIUM PROCEEDINGS

A bimonthly pharma refresh brought to you by Journal of Pharma Insights and Research (JOPIR) ISSN No. 3048-5428

OCTOBER 2024 VOL. 2, ISSUE 5 DOI: 10.5281/ZENODO.13888365

INTRODUCTION OF ROBOTIC SYSTEMS IN PHARMACY

Mr. A. Amos

UG Scholar, Faculty of Pharmacy, Bharath Institute of Higher Education and Research, Selaiyur, Chenna, India

amosaruldass2003spr@gmail.com

Abstract: Technological advancements have significantly transformed various aspects of human life, particularly in the healthcare sector. The introduction of robotic systems in pharmacy has revolutionized medication management and dispensing processes. These systems offer numerous benefits, including reduced reliance on technical staff, improved accuracy in medical procedures, and modernized service delivery. Globally, the adoption of robotic pharmacy systems is on the rise due to their potential to enhance operational efficiency and minimize errors. Robotic pharmacy systems come equipped with self-monitoring features that enable real-time inventory management and reduce patient wait times. Additionally, barcode-based pharmaceutical processes further improve medication safety, reduce operating costs, and boost overall pharmacy efficiency. Despite these advantages, the implementation of robotic technology in healthcare facilities can be challenging, time-consuming, and may occasionally face technical issues. While the adoption of robotic systems may lead to a reduction in certain job roles, it also creates opportunities for increased productivity and allows pharmacists to focus on more complex, patient-centered tasks. The integration of robotic systems in pharmacies has the potential to significantly improve the quality of healthcare delivery and enhance patient safety. As the benefits of robotic pharmacy systems become increasingly evident, their implementation across all healthcare facilities is recommended to optimize pharmacy operations and improve the overall quality of patient care. However, careful consideration must be given to the challenges associated with implementation and the potential impact on the workforce.

Keywords: Pharmacy automation, Robotic dispensing systems, Healthcare technology, Medication safety, Operational efficiency.

UTILISATION OF BRAIN COMPUTER INTERFACE IN NEUROPHARMACOLOGY

Mr. Shaizaan Motlekar[1*], Miss. Avanti Santosh Wakte[1], Prof. Jayesh Baldota [2]

[1]UG Scholar, School of Pharmacy, Vishwakarma University, Pune, Maharashtra, India
[2] Assistant Professor, School of Pharmacy, Vishwakarma University, Pune, Maharashtra, India

shaizaanshuaib32@gmail.com

Abstract: Brain Computer Interfaces (BCIs) have emerged as a groundbreaking technology in the field of neuropharmacology, enabling direct communication between the brain and external devices. These systems acquire, analyze, and translate brain signals into commands that control output devices, bypassing traditional neuromuscular pathways. The primary objective of BCI technology is to restore or replace functional capabilities in individuals with neuromuscular disorders such as amyotrophic lateral sclerosis, cerebral palsy, stroke, or spinal cord injury. Since the initial demonstrations of electroencephalography (EEG)-based spelling and single-neuron device control, researchers have made significant strides in utilizing various brain signals, including EEG and intracortical recordings, for increasingly complex applications. These advancements have led to the development of sophisticated control systems for cursors, robotic orthoses, prostheses, wheelchairs, and other assistive devices. Beyond its applications in assistive technology, BCI shows promise in rehabilitation following stroke and other neurological disorders. Future developments may even enhance the performance efficiency of medical professionals, including surgeons. The rapid growth of BCI research and development has generated excitement among scientists, engineers, clinicians, and the general public. However, the future success of BCI technology hinges on advancements in three critical areas: convenience, portability, and safety across various environments. Long-term studies in real-world settings are essential to validate the effectiveness and reliability of BCI systems.

Keywords: Brain-computer interfaces, Neuropharmacology, Electroencephalography, Neurological rehabilitation, Assistive technology, Intracortical recordings.

E-SYMPOSIUM PROCEEDINGS

A bimonthly pharma refresh brought to you by Journal of Pharma Insights and Research (JOPIR) ISSN No. 3048-5428

OCTOBER 2024 VOL. 2, ISSUE 5 DOI: 10.5281/ZENODO.13888365

CHAMOMILE: FROM HERBAL REMEDY TO COSMETIC RESOURCE

Mr. Aayush Manoj Gupta, Mr. Amit Gupta, Mr. Krishna Dubey

UG Scholar, Ideal College of Pharmacy & Research, Kalyan, Maharashtra, India

aayushmgupta13@gmail.com

Abstract: Chamomile is one of the most popular traditional medicinal herbs. The most popular species used in commercial chamomile preparations are Matric aria chamomile L. Traditionally; chamomile has been proposed to be useful in treating a wide range of conditions from wounds and ulcers to insomnia and stress. Various preparations of chamomile are available, including herbal tea, extract capsules, topical formulas, and essential oils. Chamomile is a medicinal plant containing numerous active ingredients including terpenoids (α-bisoprolol, chamazulene), flavonoids (aligning, lutein, quercetin), and coumarone (herniary, umbelliferon). While some studies have explored the effects of isolated chamomile compounds, such as aligning and quercetin, this narrative review will focus on the potential uses of the whole chamomile plant. Approximately 120 secondary metabolites have been identified in chamomile, including 28 terpenoids and 36 flavonoids. The principal components of the essential oil extracted from the German chamomile flowers are the terpenoids α-bisoprolol and its oxide alkenes including chamazulene and acetylene derivatives. Chamazulene and bisoprolol are very unstable and are best preserved in an alcoholic tincture. Other major constituents of the flowers include several phenolic compounds, primarily the flavonoids aligning, quercetin, and patuletin as glucosides and various acetylated derivatives. Chamomile is used as an herbal treatment for various skin conditions. Active component of chamomile contains terpenoids (bisoprolol, matric in, and chamazulene), flavonoids (lutein, ruin, and aligning), hydroxycoumarins, and mucilage's. It has anti-inflammatory action and also assists in wound healing. This has been widely used in cosmetic products like soothing moisturizers, cleansers, and colour-enhancing hair products.

Keywords: Chamomile, Cosmetic, Medicinal Plants, Essential Oils, Topical Products.

PEPTIC ULCER DISEASE

Miss Golla Venkata Sowmyasree

Assistant Professor, Annamacharya College of Pharmacy, Rajampet, Andhra Pradesh, India

sowmyapharma1998@gmail.com

Abstract: Peptic ulcer disease (PUD) is a common condition, affecting 5-10% of the global population, with significant geographical and racial differences. Peptic ulcers are lesions that form on the stomach or duodenal lining. The two most common types of peptic ulcers are "duodenal ulcers" and "gastric ulcers." Peptic ulcers result from an imbalance between aggressive factors such as hydrochloric acid, pepsin, refluxed bile, leukotrienes, reactive oxygen species, and defensive factors such as the mucus-bicarbonate barrier, prostaglandins, mucosal blood flow, cell renewal and migration, and non-enzymatic and enzymatic antioxidants. The two most common causes are chronic Helicobacter pylori infection and the use of non-steroidal anti-inflammatory medications. Several international guidelines advocate a typical triple therapy as the first-line treatment, which includes a proton pump inhibitor and a combination of amoxicillin and clarithromycin. This combo medication has showed decreasing efficacy over time. Peptic ulcer management has evolved considerably, and Hp eradication therapy is the best option for achieving complete cure of PUD in infected patients. The goal of treating ulcers is to lower the amount of acid produced by your stomach, neutralize the acid, and protect the injured area so that it can heal.

Keywords: Peptic Ulcer, Helicobacter pylori, Non-steroidal Anti-inflammatory Drugs, Eradication Treatment.

E-SYMPOSIUM PROCEEDINGS

A bimonthly pharma refresh brought to you by Journal of Pharma Insights and Research (JOPIR) ISSN No. 3048-5428

OCTOBER 2024 VOL. 2, ISSUE 5 DOI: 10.5281/ZENODO.13888365

NANOPARTICLE STRATEGIES FOR ACCELERATED BONE REGENERATION

Miss N V D G Lakshmi Tulasi

UG Scholar, Aditya College of Pharmacy, Surampalem, Andhra Pradesh, India

lakshmitulasiposina@gmail.com

Abstract: Bone regeneration presents significant clinical challenges, particularly in cases of large defects or non-healing fractures. Nanotechnology has emerged as a promising approach to augment traditional therapies, offering unique solutions to enhance bone healing processes. This review is about the role of nanoparticles (NPs) in bone regeneration, focusing on their diverse applications, mechanisms of action, and translational potential. Nanoparticles used in bone regeneration can be categorized into metallic, ceramic, and polymeric materials, each with distinct properties influencing their biological interactions. Key mechanisms include the modulation of cellular behavior, enhancement of scaffold properties, and localized delivery of therapeutic agents such as growth factors and antimicrobial agents. These NPs exert their effects through precise control over size, shape, surface chemistry, and degradation kinetics, facilitating targeted tissue repair and regeneration. Preclinical studies utilizing animal models have demonstrated the efficacy of NP-based therapies in promoting bone formation and integration. Moreover, ongoing clinical trials highlight their potential for safe and effective application in human patients, although challenges such as regulatory approval and long-term safety profiles remain. Looking forward, the integration of nanoparticles with advanced technologies like 3D printing holds promise for personalized medicine approaches in orthopedics. This review provides current knowledge and discusses future directions, emphasizing the transformative impact of nanoparticles on the field of bone regeneration.

Keywords: Nanotechnology, Bone regeneration, Nanoparticles, Scaffold properties, 3D Printing.

INVESTIGATION OF GASTROPROTECTIVE EFFECTS OF *OCIMUM AMERICANUM* LEAF EXTRACT IN AN ETHANOL INDUCED GASTRIC ULCER MODEL

Mr. Vaibhav Gabhale#, Dr. Baban Thawkar*

UG Scholar#, Konkan Gyanpeeth Rahul Dharkar College of Pharmacy and Research Institute, Karjat, Maharashtra, India

Assistant Professor, Konkan Gyanpeeth Rahul Dharkar College of Pharmacy and Research Institute, Karjat, Maharashtra, India*

lakshmitulasiposina@gmail.com

Abstract: Stomach ulcers have become more common, primarily due to the increased use of nonsteroidal anti-inflammatory drugs (NSAIDs). This study evaluates the anti-ulcer potential of *Ocimum americanum* leaf extract (OALE) on ethanol-induced acute gastric mucosal hemorrhagic lesions. Six groups of Swiss albino mice were randomly selected: three experimental, one normal control, one ulcer control, and one standard group. The normal control group received a 10 ml/kg vehicle orally, while the standard group was given 40 mg/kg of pantoprazole. The experimental groups received OALE at doses of 100 mg/kg, 200 mg/kg, and 400 mg/kg. All groups, except the normal control, were treated with 1 ml of ethanol solution to induce gastric ulcers. After one hour, the mice were euthanized. The ulcer control group exhibited significant stomach mucosal lesions, reduced gastric pH, and lower mucus production. OALE treatment significantly reduced the number of ulcers, increased stomach pH and mucus production, and reduced ulcer area, edema, and leukocyte infiltration. OALE also increased nitric oxide (NO) levels and decreased malondialdehyde (MDA) concentrations in the gastric mucosa. Acute toxicity studies showed no adverse effects at 400 mg/kg. The findings suggest that *Ocimum americanum* leaf extract provides gastroprotective benefits through its mucoprotective properties. Nevertheless, more in-depth research and clinical trials are needed to fully comprehend the potential gastrointestinal health benefits of *Ocimum americanum* leaf extract.

Keywords: Stomach ulcers, Nonsteroidal anti-inflammatory drugs (NSAIDs), *Ocimum americanum* leaf extract (OALE), Gastric mucosal lesions, Gastroprotective, Nitric oxide (NO).

E-SYMPOSIUM PROCEEDINGS

A bimonthly pharma refresh brought to you by Journal of Pharma Insights and Research (JOPIR) ISSN No. 3048-5428

OCTOBER 2024 VOL. 2, ISSUE 5 DOI: 10.5281/ZENODO.13888365

INTEGRATION OF DIGITAL THERAPEUTICS IN HEALTHCARE

Miss. Saraswathi V[*], Dr. Rakshana V[#]

UG Scholar[#], Faculty of pharmacy ,Bharath Institute of Higher Education And Research ,Selaiyur, Chennai, Tamilnadu, India

Assistant Professor[*], Faculty of pharmacy ,Bharath Institute of Higher Education And Research ,Selaiyur, Chennai, Tamilnadu, India

vsaraswathi884@gmail.com

Abstract: Digital therapeutics integration represents a transformative approach in healthcare, utilizing software-driven solutions to prevent, manage, and treat various medical conditions. These interventions deliver evidence-based therapeutic interventions directly to patients via smartphones, tablets, and other digital platforms by harnessing technology. This integration enhances traditional therapies, offering tools for behavior modification, patient engagement, and real-time health monitoring. Digital therapeutics are particularly effective in managing chronic diseases such as diabetes, hypertension, and mental health disorders, where continuous monitoring and patient adherence are crucial for success. Recent advancements in artificial intelligence and data analytics further optimize these digital solutions, enabling personalized treatment plans based on individual patient data. Furthermore, the integration of digital therapeutics into standard healthcare practices facilitates better communication between patients and providers, fostering a collaborative approach to treatment. Regulatory acceptance and clinical validation of these therapies are on the rise, with increasing support from healthcare providers and payers. As the healthcare landscape evolves, the integration of digital therapeutics promises to enhance patient outcomes, improve accessibility, and reduce healthcare costs. This innovative approach not only addresses the needs of patients but also empowers them to take an active role in their health management.

Keywords: Digital therapeutics, Integration, Chronic Diseases, Patient Engagement, Personalized Medicine, Healthcare Innovation.

NANOSPONGE: A PROMISING AND INTRIGUING STRATEGY IN MEDICAL AND PHARMACEUTICAL SCIENCES

Miss. Supriya K, Miss. Rupa Sri Sai Mahalaxmi S

UG Scholar, Aditya Pharmacy College, Surampalem, Andhra Pradesh, India

supriyakaki293@gmail.com

Abstract: The complex chemical processes in creating advanced drug delivery systems have mostly hindered the development of effective targeted drug delivery systems for an extended period. Nanosponges, a new colloidal system, could address challenges related to drug toxicity, reduced bioavailability, and drug release across a large surface by being customizable to interact with both hydrophilic and hydrophobic drugs. Nanosponges are tiny in size and possess a three-dimensional structure with a porous cavity. Preparing them is simple through the crosslinking of cyclodextrins with various compounds. Thanks to its excellent biocompatibility, stability, and safety, several drug delivery systems based on Cyclodextrin have been quickly developed. The nanosponge drug delivery system has a wide range of uses in different diseases like cancer, autoimmune disorders, theranostic applications, improved bioavailability, stability, etc. This review discusses the advantages and disadvantages, preparation methods, factors influencing their preparation, techniques for characterization, applications, and latest advancements in nanosponges.

Keywords: Nanosponges, Cyclodextrin, Crosslinking, Bioavailability, Stability.

E-SYMPOSIUM PROCEEDINGS

A bimonthly pharma refresh brought to you by Journal of Pharma Insights and Research (JOPIR) ISSN No. 3048-5428

OCTOBER 2024 VOL. 2, ISSUE 5 DOI: 10.5281/ZENODO.13888365

E-POSTERS

IN SILICO SCREENING OF CAESALPINIA DIGYNA PHYTOCONSTITUENTS ON GLUCOKINASE

Ms. Priyanka Gola*[1], Ms. Shalini Singh[1]

[1]*Assistant Professor, Delhi College of Pharmacy-DIRD, Delhi, India*

shalinisingh734@gmail.com

IN SILICO SCREENING OF *CAESALPINIA DIGYNA* PHYTOCONSTITUENTS ON GLUCOKINASE

Abstract: Insulin is an essential anabolic hormone that exacts multiple effects on glucose, lipids, protein and mineral metabolism. This study used an in-silico analysis to look into the anti-diabetic properties of *C. digyna* phytoconstituents. The binding energy of *C. digyna* phytoconstituents with Glucokinase (Iv4s) the phytoconstituents of plant should follows the Lipinski rule of five . These plant-based natural compounds were used in molecular docking studies to analyses the target protein and ascertain the antidiabetic efficacy of *C. digyna*. It can be concluded that, the selected phytoconstituents of the *C. digyna* have established high binding affinity to target protein. Further invitro and in vivo Studying is necessary to explore the numerous pharmacological significances of plant *C. digyna* phytoconstituents in the field of Diabetes mellitus.

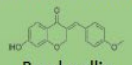
Introduction: Diabetes is an autoimmune disease that leads to the destruction of insulin producing pancreatic β-cell. Associated side effect with the current treatment is the major setback which affecting therapeutic compliance.(1). In this work, we aimed to explore the therapeutic potential of *C. digyna* phytoconstituents against diabetes. *C. digyna* belonging to Fabaceae. family. It has numerous medicinal values such antipyretic effects, anti- inflammatory, antioxidant, etc. (2) (FIG-1)

Methodology:

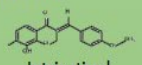
Protein Preparation: The 3D crystal structure of Glucokinase with (PDB ID: 1V4s) in complex with the ligand. It was retrieved from the (FIG-2) protein data bank. The complexes bound to the receptor molecules, all the heteroatoms and non essential water molecules were removed and finally hydrogen atoms were merged to the target receptor molecule using Biovia discovery.

Ligand preparation: The 3D structure of (Bonducellin and Intricatinol) was downloaded in SDF format using Pubchem and converted to PDB format using Babel GUI and further used for docking studies

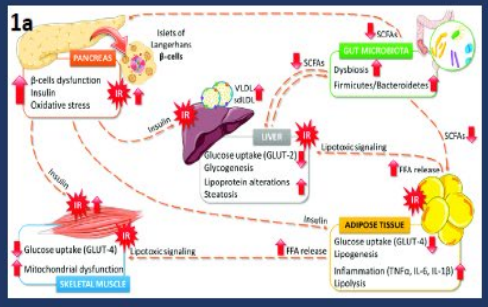
Docking studies: Docking studies using Autodock vina: The docking analysis with 2 phytoconstituents (Bonducellin & Intricatinol) was carried out by Autodock vina software which is most commonly available software. All the ligand molecule should follow Lipinski rule of 5.



Bonducellin



Intricatinol



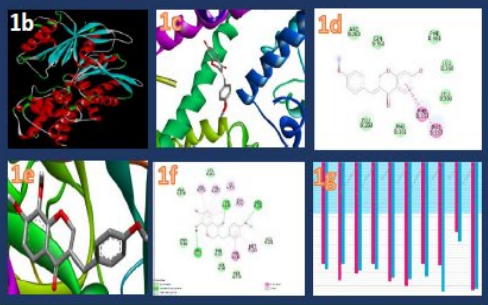


Figure 1a. Pathophysiology of Diabetes mellitus 1b. Glucokinase 1c to 1f Molecular Docking and protein ligand interactions 1g. Ligand interaction with target protein

Conclusion: The selected phytoconstituents of bonducellin, Intricatinol have established high bindingaffinity of glucokinase. Further invitro and in vivo studies are warranted to explore the pharmacological potential of *C. digyna* phytoconstituents

References:

1.Banday MZ, Sameer AS, Nissar S. Pathophysiology of diabetes: An overview. Avicenna J Med 2020;10(4):174-188. Published 2020 Oct 13 doi:10.4103/ajm.ajm_53_20

2. Kannur DM, Hukkeri VI, Akki KS. Antidiabetic activity of Caesalpinia bonducellin seed extracts inrats. Fitoterapia. 2006;77(7-8):546-549. doi:10.1016/j.fitote.2006.06.013

AUTHORS

Miss Priyanka Gola*[1], Ms. Shalini Singh[1],

Assistant professor, Delhi College of Pharmacy-DIRD, Delhi, India

E-SYMPOSIUM PROCEEDINGS

A bimonthly pharma refresh brought to you by Journal of Pharma Insights and Research (JOPIR) ISSN No. 3048-5428

OCTOBER 2024 VOL. 2, ISSUE 5 DOI: 10.5281/ZENODO.13888365

MONKEY POX VIRUS: A RARE DISEASE

Ms. Mousam*[1], Mr. Shivansh Kumar Singh[1], Ms. Yashika Arora[1]

[1]*UG Scholar, Delhi College of Pharmacy-DIRD, Delhi, India*

chaudharymausam551@gmail.com

MONKEY POX VIRUS : A RARE DISEASE

Miss. Mousam, Mr. Shivansh Kumar Singh, Miss. Yashika Arora
UG Scholar, DELHI COLLEGE OF PHARMACY (DIRD) DELHI

BACKGROUND

The human monkey pox disease has mainly been described in western and central Africa.

Monkey pox virus is one of the Zoonotic virus that belong to the Orthopox virus Geneus of Poxviridae family

Despite the virus name monkey pox ,monkey are not the origin of virus.

The first case of monkey pox in human was reported in 1970,this case Occured in 9 month old boy from democratic republic of Congo.

In July 2022,WHO declared monkey pox a public health emergency of international concern.

SYMPTOMS

- MPOX can cause fever headache, bodyache, fatigue,sawllon lymph node & rashes that appear on skin ,mouth, genital ,hands ,chest & anus . Rashes can look like pimples or blisters & can be painful.

TREATMENT

- Currently there is no treatment approved specifically .
- Some antiviral drug like cidofovir or tecovirimat .
- These drug is approved to treat viral infection like small pox.
- JYNEOS is 2 dose vaccine developed to protect against MPOX & SMALL POX.
- Vaccine developed for small pox also provide protection against MPOX.

INTRODUCTION

- Monkey pox or MPOX is caused by the monkey pox virus (MPXV) a member of subfamily chordopoxviridae & genus orthopox within family poxviridae.
- Thr pox viridae family is a family of large ,complex ,double standard DNA.
- The major host of pox viruses are rodent, rabbit &non –primates which can occasionally be transmitted to human facilitating the occurrence of human to human.

MODE OF TRANSMISSION

- Reserch implies that monkey pox may be spread in 3 different ways .

I. From person to person
II. With direct contact with infected organism.
III. & from animal to people.

- During the current outbreak of the illness, research have shown that it is more prevalent in man who engage in sexual activity with other man (MSM)
- The virus may pass from one person to another by respiratory contact direct contact with body fluid or during pregnancy from mother to fetus.

CONCLUSION

- Monkey pox is a disease that can cause mild to severe illiness in humans & and can be transmittes to human from animal or other humans.

REFRENCES

Mitjà O, Ogoina D, Titanji BK, Galvan C, Muyembe JJ, Marks M, Orkin CM. Monkeypox. The Lancet. 2023 Jan 7;401(10370):60-74.
McCollum AM, Damon IK. Human monkeypox. Clinical infectious diseases. 2014 Jan 15;58(2):260-7.