

International Journal of Pharma Research

Vol.12• Issue 2

ISSN 0975-3532

July - December 2021

Indexed in Google Scholar, Open Access, Academic Keys, SJIF#, Scientific Indexing Services, Research bible, GIF#, Directory of Research Journal Indexing, Index Copernicus International, Indian Citation index, Ulrich's Web#, Jour Info#, Cite Factor#, EBSCO, World Cat

I
J
P
R



The Research Publication from
PSG COLLEGE OF PHARMACY
Coimbatore 641 004, Tamil Nadu, INDIA

www.psgpharma.ac.in

No. of Pages: 61

*No Processing Charge
&
Publication Fee*

Indexed in Google Scholar, Open Access, Academic Keys, SJIF#, Scientific Indexing Services, Research bible, GIF#, Directory of Research Journal Indexing, Index Copernicus International, Indian Citation index, Ulrich's Web#, Jour Info#, Cite Factor#, EBSCO, World Cat

Heterotaxy Syndrome Associated With Left and Right Isomerism – An Overview

Balaji P^{*}, Subalakshmi S, Deepika Rani S, Archana D, Deeneswari P, Kannan S
Jaya College of Paramedical Sciences, Jaya College of Pharmacy, Thiruninravur
Email: pharmacology.balaji@gmail.com

Received date: 09.09.2021

Accepted date: 27.12.2021

ABSTRACT

Heterotaxy syndrome is a condition in which the internal organs are abnormally arranged in the chest and abdomen. Heterotaxy syndrome is also known as Ivemark syndrome. The term situs ambiguous is an abnormality in which the components of situs solitus and situs inversus are seen in the same person. Heterotaxy may also results from genetic changes (mutations); and the main feature of heterotaxy syndrome is the isomerism which is a symmetrical development of normally asymmetrical organs or organ systems. Left and right isomerisms are the two subtypes of heterotaxy. Patients with left isomerism have less severe cardiac malformations than with right isomerism. The management of complex congenital heart disease in patients with heterotaxy syndrome has steadily improved. The survival of morbidity and mortality rate is decreased in heterotaxy population. The surgical outcome of heterotaxy patients in fontan circulation and biventricular repair techniques were recent advances. In this article, we review about the isomerism of heterotaxy and its improvement in the current era.

KEYWORDS: Heterotaxy, Mutagenesis, Asplenia, Polysplenia, Isomerism, CHD

Indexed in Google Scholar, Open Access, Academic Keys, SJIF#, Scientific Indexing Services, Research bible, GIF#, Directory of Research Journal Indexing, Index Copernicus International, Indian Citation index, Ulrich's Web#, Jour Info#, Cite Factor#, EBSCO, World Cat

Phytomolecules Having Flavone and Naphthofuran Nucleus Exhibited Better Binding G-Score against Protease and SPIKE Protein of Novel Corona Virus COVID-19

Karthik Aravinda Rajan A, Muthusamy VS, Ramanathan M*
PSG College of Pharmacy, Coimbatore, Tamil Nadu, India
Email: muthiah.in@gmail.com

Received date: 01.12.2021

Accepted date: 17-12.2021

ABSTRACT

The present study aims to screen the different phytoconstituents and drugs for potential treatment of the corona virus COVID-19 and for specificity through virtual screening. The plant molecules selected were based upon traditional knowledge and are prescribed in the Indian system of medicine for infectious/respiratory conditions. The three target proteins selected for the study are 3CLpro, PLpro, and SPIKE. These proteins have defined pathological roles in disease transmission. The virtual screening was carried out in these proteins using the GLIDE Schrödinger Maestro software version 11.9.011. The efficacy was assessed by the calculated G-score of the ligand interaction with the amino acid side chains of the ligand binding domain. Molecules such as saponarin, mangiferin, and hesperidin exhibited better G-score with 3CLpro and PLpro. Similarly, diphyllin and tuberculatin exhibited better G-score for SPIKE protein. The reference anti malarial drug hydroxychloroquine showed better interactions with 3CLpro and PLpro. Similarly, protease inhibitors and antiviral drugs have shown interaction with 3CLpro specific protease protein. Interestingly, SPIKE protein ligands, diphyllin and tuberculatin from *Justicia adhatoda* (vasaka), were found to be unique and did not show affinity to protease inhibitor. It can be concluded, that the molecules having flavone scaffolds show better binding affinity with protease proteins 3CLpro and PLpro. SPIKE protein scaffold is different and showed better binding affinity with molecules having naphthofuran ring. The traditionally used plant phytoconstituents did not exhibit good binding affinity; however, we believe that a combination of these herbs might induce human immune system against microbial infection.

KEY WORDS: 3CLpro (3chymotrypsin like protease), PLpro (papain like protease), COVID-19, SPIKE, SARS CoV2 (severe acute respiratory syndrome corona virus-2), Molecular docking, Flavonoids, Naphthofuran.

Indexed in Google Scholar, Open Access, Academic Keys, SJIF#, Scientific Indexing Services, Research bible, GIF#, Directory of Research Journal Indexing, Index Copernicus International, Indian Citation index, Ulrich's Web#, Jour Info#, Cite Factor#, EBSCO, World Cat

Investigation on Nutritional Benefits of Selected Leafy Vegetables Consumed in South India

Bhavya Sivadas P, Arulkumar R, Rajashree M, Adhirajan N*
Department of Pharmacognosy, KMCH College of Pharmacy,
Coimbatore - 641048, Tamil Nadu, India
Email: adhirajan@gmail.com

Received date: 07.12.2021

Accepted date: 20.12.2021

ABSTRACT

Green leaf vegetables are an important component of the human diet, providing fibre, minerals and vitamins and are low in calories. They are also a very good source of antioxidants. In the present study an attempt was made to investigate the nutritional benefit of the common leafy vegetables used in South Indian cuisine such as *Boerhavia diffusa* and *Cucurbita maxima*. Proximate analysis, an index to the nutritive value of foods and food ingredients was performed by standard procedures. It involves the determination of percentage of moisture content, crude lipids, crude protein, crude fibers and total ash present in the dried powdered leaves. Dietary minerals, trace elements and heavy metals were estimated by ICP-MS. The results showed that the high level of proximate content in both leaves. Mineral analysis showed that the *B.diffusa* contains the high level of Ca (6438.71 ppm) and *C. maxima* demonstrated the high level of Na (26.61 ppm), K(6143.51ppm) and Mg(610,62ppm). The overall study demonstrated that the leaves of both *B. diffusa* and *C. maxima* are having high proximate content, vitamin C, permissible limits of dietary minerals and concluded that these leafy vegetables consumed are nutritive and safe.

KEY WORDS: *Boerhavia diffusa*, *Cucurbita maxima*, Proximate, Minerals, leafy vegetable

Indexed in Google Scholar, Open Access, Academic Keys, SJIF#, Scientific Indexing Services, Research bible, GIF#, Directory of Research Journal Indexing, Index Copernicus International, Indian Citation index, Ulrich's Web#, Jour Info#, Cite Factor#, EBSCO, World Cat

Analytical Method Development and Validation For Simultaneous Estimation of Meropenem and Vaborbactam in Bulk and Pharmaceutical Dosage Form By RP-HPLC

C. Parthiban*, B. Siddartha

Department of Pharmaceutical Analysis, Malla Reddy College of Pharmacy,
Secunderabad-500100, Telangana, India

Email: parthi1617@gmail.com

Received date: 10.12.2021

Accepted date: 23.12.2021

ABSTRACT

A simple, specific and accurate reverse phase high performance liquid chromatographic method was developed for the simultaneous determination of Meropenem and Vaborbactam in Pharmaceutical dosage form. The column used was KromosilC₁₈ (150mm x 4.6 mm, 5 μ m) in isocratic mode, with mobile phase containing phosphate buffer and acetonitrile (45:55v/v). The buffer is prepared by adding accurately weighed 1.36gm of Potassium di hydrogen Ortho phosphate in a 1000ml of Volumetric flask. About 900ml of milli-Q water added and degas to sonicate and finally make up the volume with water then pH adjusted to 5.0 with dil. Orthophosphoric acid solution. The flow rate was 1.0 ml/ min and effluents were monitored at 260 nm. The retention times of Meropenem and Vaborbactam were found to be 2.299 min and 3.102 min, respectively. The linearity for Meropenem and Vaborbactam were in the range of 25-150 μ g/ml and 25-150 μ g/ml respectively. Regression equation of Meropenem is $y = 4826.x + 2593$, and $y = 4887.x + 6194$ of Vaborbactam respectively. The proposed method was validated and successfully applied to the estimation of Meropenem and Vaborbactam in combined tablet dosage forms.

KEYWORDS: Meropenem, Vaborbactam, Validation, Buffer and ICH Guidelines.

The Assessment of Incidence of Potential Drug Related Problems and Comorbidities in Cardiac Patients

Chandrika. C^{1*}, Muthukumar Mani²

¹Department of Pharmacy Practice, Visveswarapura Institute of Pharmaceutical Sciences, Bangalore

²Department of Pharmacy Practice, Faculty of Pharmaceutical Sciences, PES University, Bangalore

Email: muthukumar1197@gmail.com

Received date: 26.11.2021

Accepted date: 28.12.2021

ABSTRACT

Background: Cardiovascular diseases are the most common cause of death worldwide and are characterized by a high level of co morbidities. Geriatric patients with cardiac diseases are more prone to develop drug related problems (DRPs), which can further worsen their quality of life.

Objectives: The aim of this study was to determine the medications associated with DRPs in geriatric cardiac patients with multiple comorbidities. **Methods:** The study was designed as a prospective observational in a multi-specialty tertiary care hospital in Bangalore, India. The study population was geriatric cardiology patients admitted into hospital for the duration of 6 months. We assessed the drug interactions, the co-morbid conditions influencing potential DRPs, the adverse drug events through trigger tools. **Results:** A total of 150 DRPs were identified in Prescriptions of all 80 study subjects, had DRP frequency of 1.82 ± 2.2 per patient and categories as cognate to ADR 7.30%, DDIs: 21.53%. Most common place drug interaction type identified in these patients was moderate drug interaction which accounted for 65.88% followed by minor (26.69%) and major type of drug interaction which was only 7.49%. Casualty assessment of ADRs was carried out using Naranjo's scale; most ADRs found were possible (44.74%, n-17) and probable (31.58%, n-12). In this study, almost one-third of the adverse drug reactions implicated antiplatelets and corticosteroids drugs, HTN (n-53) and DM T2 (n-52) were the major comorbidities associated with DRPs. **Conclusion:** In the patient group included in the present study, occurrence of DRP may result in increased risk of hospital readmission, morbidity, mortality. Further study is necessary to establish efficient strategies for elderly at risk for potential DRPs.

KEYWORDS: Drug related problem, DDIs, ADRs, Naranjo's scale, Trigger tools

Indexed in Google Scholar, Open Access, Academic Keys, SJIF#, Scientific Indexing Services, Research bible, GIF#, Directory of Research Journal Indexing, Index Copernicus International, Indian Citation index, Ulrich's Web#, Jour Info#, Cite Factor#, EBSCO, World Cat

Formulation and Evaluation of Clopidogrel Bisulphate Loaded Ethyl Cellulose Microspheres

S. Selvaraj*, P. Perumal

Department of Pharmaceutics, JKK Munirajah Institute of Health Sciences College of Pharmacy
Gobichettipalayam, Tamilnadu, India- 638506

Email: selvasangari@gmail.com

Received date: 10.12.2021

Accepted date: 28.12.2021

ABSTRACT

The present study reported that the development of clopidogrel bisulphate loaded ethylcellulose microspheres were prepared by solvent evaporation method. About 5 formulations were prepared using different concentrations of polymer. Fourier Transform Infra Red (FTIR) spectroscopy measurements were carried out on the pure clopidogrel bisulphate, ethyl cellulose polymer and mixture of drug and polymer. The formulations were evaluated for micromeritic properties, mean particle size, morphological characteristics and percentage yields. The encapsulation efficiency and loading capacity were 68.70 to 76.20% and 30.67 to 45.82% respectively. The Encapsulation efficiency and loading capacity of the microspheres appear to depend on the concentration of polymer. All the prepared formulations are resulted in micron size particles and displayed spherical smooth morphology. The *in-vitro* release profile of clopidogrel bisulphate from microspheres has shown a slow controlled release over a period of 24hrs from the microspheres and appeared to fit best with Higuchi model following zero order kinetic Non-Fickian diffusion mechanism. The results demonstrated that the effective use of clopidogrel bisulphate loaded ethylcellulose microspheres as a controlled release preparation for the treatment of coronary artery diseases.

KEY WORDS: Microspheres, Clopidogrel bisulphate, Ethyl Cellulose, *in -vitro* drug release

Indexed in Google Scholar, Open Access, Academic Keys, SJIF#, Scientific Indexing Services, Research bible, GIF#, Directory of Research Journal Indexing, Index Copernicus International, Indian Citation index, Ulrich's Web#, Jour Info#, Cite Factor#, EBSCO, World Cat

Extra Cellular Lipase From Oil Industry Waste: Activity and Kinetics

Kamalakkannan K^{1*}, Lathamani L¹, Munisha M¹, Keerthika S¹, Balakrishnan V²

¹Department of Biotechnology, Nandha College of Pharmacy, Erode 638052, Tamil Nadu, India

²Department of Botany, Arignar Anna Govt. Arts College, Namakkal 637002, Tamil Nadu, India

Email: car2203@gmail.com

Received date: 02.12.2021

Accepted date: 31.12.2021

ABSTRACT

Enzymes are pervasive substances created by living cells that transform a specific substrate into a product, either alone or in combination with a prosthetic group. Lipases are a class of enzymes with a wide range of uses in the food, chemical, and pharmaceutical industries, as well as a growing interest in the treatment of lipid-rich waste from the oil sector. The goal of this work was to isolate, describe, and select lipolytic bacteria from oil industry waste that generate lipase, as well as to investigate the enzymatic kinetics acquired using the shake flask fermentation method. The results shown that it is possible to identify lipase-producing bacteria, particularly *Bacillus subtilis*. With six factors such as pH, temperature, minimal mineral medium, soya bean oil, glucose, and sodium nitrate, mostly gram positive bacteria showed the highest enzymatic reaction. Temperature was the most positively influenced the enzymatic activity. The lipolytic enzyme extracted from oil industry waste was found to have potential for reducing environmental consequences.

KEYWORDS: Industrial microbes, Lipolytic enzyme, Waste management, Fermentation.

Indexed in Google Scholar, Open Access, Academic Keys, SJIF#, Scientific Indexing Services, Research bible, GIF#, Directory of Research Journal Indexing, Index Copernicus International, Indian Citation index, Ulrich's Web#, Jour Info#, Cite Factor#, EBSCO, World Cat

A Survey Study on Immunity and Vaccination in General Population

Anoushka Sachdeva¹, Mansi Chakur¹, Mansi Mistry*

¹Dr. D. Y. Patil Institute of Pharmaceutical Sciences and Research, Pimpri, Pune

Parul Institute of Pharmacy, Parul University, Vadodara

Email: Drmansimistry12@gmail.com

Received date: 22.11.2021

Accepted date: 30.12.2021

ABSTRACT

This is a survey on Immunity and Vaccination which is one of the most important topics that everyone should know in the present times. Every individual must at least have general knowledge about the basics because it is crucial for a healthy lifestyle. The Main aim for the survey was “To find out what are the views of general population about some basics of immunity and vaccination”. The term Innate immunity is basically used for the physical, chemical and microbiological barriers but encompasses the various elements of the immune system which provide immune defense. Innate immunity is also called *natural* or *non-specific immunity*. It is the first line of defense of the immune system without antigenic specificity. Vaccines are substances used to protect against any bacteria and virus by mimicking a particular infection to activate body's immunity. A routinely vaccination at the right age prevents 2 to 3 million deaths every year in developing countries. A survey was conducted among 105 individuals to assess their level of awareness about immunity and vaccination. The results of our survey revealed that most people rate their immunity in the range of 6 to 8 out of 10. People are well aware about the correct age of getting vaccinated and when it should be avoided. Maximum percentage of individuals had the same opinion regarding our topic.

KEY WORDS: Immunity, Vaccine, Vitamins, Pregnancy