



ABSTRACT BOOK

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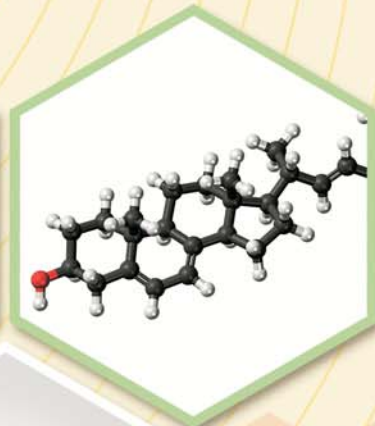
"Key Concerns and Considerations in Pharmaceutical Sciences and Technology: South-East Asian Perspective"



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**Dr. B. C. Roy College of Pharmacy
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MICROBES IN GASTROINTESTINAL TRACT RESPONSIBLE FOR PARKINSON'S DISEASES

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Parkinson's disease (PD) affects the motor function is a progressive neurodegenerative disorder of the CNS. Formation of alpha-synuclein misfolding proteins has been the cardinal factor of the pathology. Although the various line of treatments does rescue the symptoms of rigidity, tremors, bradykinesia and postural imbalances, they are temporary and do revert back. Therefore, for a better understanding of etiology and earlier treatment diagnosis and preventive measures for PD is the need of the time. Recent studies indicate that alpha-synuclein is formed in the GIT and travels to the brain. Interestingly, it has been implicated that the alpha-synuclein is formed due to overstimulation of the host immune system consequent to bacterial overgrowth, increased intestinal permeability due to inflammation the further neuroglial activation suggesting and the interplay between the microbiome, immune system and nervous system. The present review brings out the importance of the gut-brain axis, the interplay among the microbiome and immunology and together their implications in the pathogenesis of PD.

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AYURVEDIC NOOTROPIC: MOLECULAR ASPECTS

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Drugs that are known to increase memory, motivation, concentration, and attention are defined as nootropic drugs. The nootropic affects the brain performances by modulating various neurotransmitter system including dopaminergic pathway, serotonergic system, cholinergic pathways. Nootropics are well documented to be used in the treatment of memory disorders, such as Alzheimer's, Parkinson's, and Huntington's diseases. Popular Ayurvedic medicinal plants such as Ashwagandha (*Withania somnifera*), Turmeric (*Curcuma longa*),

Brahmi (*Bacopa monnieri*), Shankpushpi (*Convolvulus pluricaulis*, *Evolvulus sinoides*, and other species), gotu kola (*Centella asiatica*), and guggulu (*Commiphora mukul* and related species) have shown to slow down brain aging and enhance memory. This review summarizes the molecular mechanism of the various medicinal plants in improving the memory and neurocognitive functions.

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FABRICATION AND CHARACTERIZATION OF PECTINO-MORINGAMUCOADHESIVE MICROSPHERES: AN APPROACH FOR MODIFIED DRUG DELIVERY

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The objective of this present research work was to fabricate and characterize pectino-moringa polymeric combination based sustained release microspheres of losartan potassium. Firstly, gummy extracts from the injured sites of moringa trees was collected and isolated the natural polymer as well as the extracted polymer was examined whether it was able to sustain the drug release for prolonged period of time or not. Ionotropic gelation method was used to fabricate all the formulation due to its simple, cost effective and non consumption of organic solvents nature. All the prepared formulations were subjected to different physicochemical studies, *ex-vivo* mucoadhesion study, *in-vitro* drug release studies etc. The microspheres exhibited good mucoadhesive property and showed high drug entrapment efficiency. As the concentration of natural polymer i.e. moringa gum increased, the drug release from the matrix was decreased proportionately. SEM study revealed that the microspheres were almost spherical in shape with rough outer surface. FTIR study showed that there was no interaction among the drug and polymers. DSC study observed that losartan potassium changes its state from crystalline to amorphous, dissolved or molecularly dispersed state. XRD study confirmed that the drug molecule was dispersed at molecular level and the crystallinity of the drug was not shown. So it was concluded from the above research that pectino-moringa polymeric microspheres maybe used as the best tool to deliver losartan potassium in a sustained manner as twice daily sustained release dosage form.