Estimation of biogenic amines concentration from Cucurbita Pepo treated rat brains: Implications for antiamnesic potential

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Traditional Indian literature reports the role of Cucurbita pepo in various nervous disorders. The study was aimed to investigate the effect of n-hexane extract of C. pepo (HECP) on biogenic amines – noradrenaline (NA), dopamine (DA), serotonin (5-HT) and Gamma amino butyric acid (GABA) concentrations in rat brain after induction of amnesia with scopolamine. Animals were treated with the HECP (100 mg/kg and 200 mg/kg) and piracetam (100 mg/kg). On 14th day, animals were killed by cervical dislocation and brains were dissected out. Brains were homogenized with dry n-butanol and then centrifuged. About 4 ml aliquots of the clear supernatant were extracted with 3 ml of 0.1M phosphate buffer. Then, after adding 4% EDTA, 0.2 ml iodine solution, 0.5 ml alkaline sulphite and 0.6 ml 5N acetic acid, the solutions were heated and cooled. The intensities of fluorescence in resulting solutions were determined flurometrically at wavelengths of 400/500 & 310/365 for epinephrine, norepinephrine and dopamine respectively. The concentration of 5-HT in the solution was calculated from the standard curves. Paper chromatographic method was adopted for GABA, glutamate and glutamine analysis. The results showed that HECP significantly increased NA level by 45%, 5-HT level by 44% as compared to respective control group. The extract also significantly reduced the DA and GABA levels by 30 and 49%, respectively as compared to respective control group. Thus, this study suggests that HECP extract has a definite role in restoring the monoamines in rat brain, which might be useful in treatment of amnesia.

Microencapsulation by spray drying for stability enhancement of rabeprazole

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Rabeprazole sodium is a proton pump inhibitor, used in acid-related disorders, like peptic ulcers and gastro esophageal reflux. This drug is unstable in acid solution and in the presence of moisture. The aim this work was to study the moisture stability under long term humidity conditions of Rabeprazole sodium. A methanol solution and the solid Rabeprazole were evaluated by HPLC within 120 min and 10 days, respectively. The work was also dedicated to evaluate and compare the ability of microencapsulation in stabilizing Rabeprazole after exposure to humidity. Rabeprazole-loaded microparticles prepared by spray drying at different Drug: polymer were compared. Eudragit E PO were used as encapsulating polymer and methanol as solvent. The microparticles prepared only with 1:2 ratio of drug: polymer demonstrated an increase of the drug moisture stability. Also particle size and distribution, encapsulation efficiency, morphology of microparticles are studied. Finally concluded that spray drying is efficient method for microencapsulation of moisture sensitive drugs.

Preparation of Montelukast sodium oral thin film

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The present investigation was undertaken with the objective of formulating of the montelukast sodium fast dissolving oral thin films allowing fast reproducible drug dissolution in oral cavity thus bypassing first pass metabolism, to enhance the convenience and compliance by the elderly and pediatric patients. Montelukast fast dissolving oral thin films were prepared by solvent casting method with using different film-forming agents like HPMC, PVA, PEG 400, glycerol as a plasticizer and mannitol as filler and sweetener. Oral thin films were evaluated for weight variation, thickness, surface pH, folding endurance, drug content, disintegration time, and In vitro dissolution studies. Montelukast oral thin films based on evaluation studies HPMC showed optimum performance against other formulations. The prepared films were clear, transparent, and had a smooth surface. It was concluded that the fast dissolving oral thin films of montelukast can be made by solvent casting technique with enhanced dissolution rate, better patient compliance and effective therapy.