

عنوان مقاله:

Treatment with tryptophan-SBA-15 prevented changes in gene expression of P38-MAP kinase in the hippocampus of rats with hepatic encephalopathy

محل انتشار:

اولین کنگره ملی نانو فناوری در علوم سلامت (سال: 1397)

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خلاصه مقاله:

Background and Objective: Cirrhosis is a main cause of chronic liver failure that may induce hepatic encephalopathy (HE), which is characterized with alterations in cerebral function [1]. Ammonia and inflammation have central roles in induction of HE. Mitogen-activated protein (MAP) kinases are downstream signaling molecules of inflammatory receptors. According to previous researches, MAP kinases are affected in brain of HE patients and these molecules are target points in treatment of HE [1]. Since mesoporous materials have received considerable attention as a drug delivery vehicle [2, 3], the aim of the present study was to investigate the effects of mesoporous silica SBA-15 functionalized with tryptophan (tryptophan-SBA-15) on P38 MAP-kinase gene expression in the hippocampus of the HE model rats. **Materials and Methods:** Male Wistar rats weighing 300-350 g were divided into two groups of sham control and HE model group. HE model rats were undergone common bile duct ligation (BDL) to induce liver cirrhosis. A dose of 0.2 mg/kg of tryptophan-SBA-15 was injected subcutaneously to both experimental groups every 48 hours for 28 days of an experimental period. On day 28 of BDL, the animals were sacrificed, their brain were removed and the hippocampus of each rat was dissected on an ice-cold surface. Gene expression of P38 in the hippocampus was evaluated by a real-time PCR method. **Results:** The results of gene expression showed that the P38 gene expression was increased in the hippocampus of the HE model group treated with saline. The results also showed that HE model rats treated with tryptophan-SBA-15 decreased the elevation of P38 gene expression to a normal level. **Conclusion:** It can be concluded that mesoporous tryptophan-SBA-15 treatment could play a role in control of brain inflammation via affecting the P38 gene expression in the hippocampus of HE rats

کلمات کلیدی:

P38 MAP Kinase, Hepatic encephalopathy, Real-time PCR, Gene expression

لینک ثابت مقاله در پایگاه سیویلیکا:

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