

عنوان مقاله:

Arbutin attenuates behavioral impairment and oxidative stress in an animal model of Parkinson s disease

محل انتشار:

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خلاصه مقاله:

Objective: Arbutin has been shown to have antioxidant and free-radical scavenging properties. The aim of this study was to investigate the effects of arbutin administration on behavioral impairment, and oxidative and nitrosative stress in a 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine(MPTP)-induced animal model of Parkinson's disease (PD). Materials and Methods: PD model was developed by 4 intraperitoneal (i.p.) injections of MPTP (20 mg/kg) with 2 h intervals in mice. Experimental groups received once daily injection of saline as vehicle (control group) or arbutin (50 mg/kg, i.p.) one week before MPTP injections and this protocol was continued seven days post lesion. Behavioral deficits were evaluated using locomotion test, hanging wire test and forepaw stride length. Parameters indicating the oxidation levels including lipid peroxidation marker (TBARS), nitrite, protein carbonyl levels and antioxidant activity including ferric reducing antioxidant power (FRAP) were assessed in serum and midbrain samples. Results: Treatment with arbutin improved motor functions in an MPTP-induced PD model compared to control group ($p<0.001$). Mice treated with MPTP showed reduced levels of FRAP ($p<0.001$) and increased levels of TBARS ($p<0.001$), nitrite ($p<0.001$) and protein carbonyl ($p<0.01$), compared to the control group. In contrast to the MPTP group, arbutin treatment decreased the levels of TBARS ($p<0.05$), nitrite ($p<0.05$), protein carbonyl ($p<0.05$), and increased FRAP levels ($p<0.05$) in mice with PD. Conclusion: These findings suggest that arbutin attenuates the behavioral impairment and oxidative stress in a PD animal model.

کلمات کلیدی:

Arbutin, Parkinson's disease, Behavioral impairment, Oxidative stress, Nitrosative stress

لینک ثابت مقاله در پایگاه سیویلیکا:

