

## Thymoquinone Prevented the Development of Symptoms in Animal Model of Parkinson's Disease

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**Abstract :** Parkinson's disease is one of the most prevalent neurodegenerative diseases which occurs in elderly. There are convincing evidences that oxidative stress has an important role in both the initiation and progression of Parkinson's disease. Thymoquinone (TQ) is shown to have antioxidant and anti-inflammatory properties in invitro and invivo studies. It is well documented that TQ acts as a free radical scavenger and prevents the cell damage. Therefore this study aimed to evaluate the effect of TQ on motor and non-motor symptoms in animal model of Parkinson's disease. Male Wistar rats (10-12 months) received rotenone (1mg/kg/day, sc) to induce Parkinson's disease model. Pretreatment with TQ (7.5 and 15 mg/kg/day, po) was administered one hour before the rotenone injection. Three motor tests (rotarod, rearing and bar tests) and two non-motor tests (forced swimming and elevated plus maze) were performed for behavioral assessment. Our results indicated that TQ significantly ameliorated the rotenone-induced motor dysfunction in rotarod and rearing tests also it could prevent the non-motor dysfunctions in forced swimming and elevated plus maze tests. In conclusion we found that TQ delayed the Parkinson's disease induction by rotenone and this effect might be related to its proved antioxidant effect.

**Keywords :** Parkinson's disease, thymoquinone, motor and non-motor symptoms, neurodegenerative disease

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