

## عنوان مقاله:

Regulatory Effects of Thymoquinone on Dopamine Level in Neuronal Cells Exposed to Amphetamine: an in Vitro Study

## محل انتشار:

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## خلاصه مقاله:

Background: Amphetamine (AT) is a potent central nervous system stimulant that is capable of producing damaging effects to the central dopaminergic pathway; used both for medical purposes and also abused recreationally. One of the potential naturally occurring compounds is thymoquinone (TQ), an active compound of *Nigella sativa*; which is known for its cellular protective effects. The objectives of this study were to determine the  $IC_{50}$  values of AT and TQ on differentiated SH-SY5Y neuronal cells and to evaluate the changes of dopamine (DA) level in the cells exposed to AT after co-administering with TQ. Materials and Methods: Differentiated SH-SY5Y cells were grown in a cell culture flask containing DMEM/F12 medium supplemented with 10% (v/v) fetal bovine serum and 1% (v/v) penicillin/streptomycin. The  $IC_{50}$  value of TQ and AT in differentiated SH-SY5Y cells was determined by using ۳-(۴,۵-dimethylthiazol-۲-yl)-۲,۵-diphenyl tetrazolium bromide (MTT) assay. The DA level was determined by using the Enzyme-Linked Immunosorbent Assay (ELISA) kit. Results: The  $IC_{50}$  values of AT and TQ were ۱۵۹۶  $\mu$ M and ۹۲۶  $\mu$ M, respectively. Co-administration of ۴۰  $\mu$ M of AT and ۳۰  $\mu$ M of TQ demonstrated a significant increase in DA level at ۴۸ hours of exposure when compared to the administration of AT group ( $P \leq 0.05$ ). Conclusion: These findings suggested that TQ has a role in maintaining the DA activity after long-term AT exposure.

## کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

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