

## عنوان مقاله:

Crocin protects against beta-amyloid peptide-induced apoptosis in PC12 cells via MAPK and PI3 K pathways

## محل انتشار:

پانزدهمین همایش سراسری سم شناسی ایران (سال: 1398)

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## خلاصه مقاله:

**Objective:** Alzheimer s disease is a neurological disorder in which brain cell death led to memory loss and cognitive decline. Crocin is a known compound with antioxidant and anti-inflammatory property. This study aimed to investigate the protective effect of crocin on toxicity and oxidative damage induced by A $\beta$  and hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) in PC12 cells as an appropriate model of Alzheimer s cell damage. **Materials and Methods:** PC12 cells pretreated with crocin and donepezil (5 and 10  $\mu$ M) for 2 h and then exposed to A $\beta$  (1-40) (25  $\mu$ M) for 24 h and 48 h. In parallel after pretreatment with crocin and donepezil (5, 10 and 20  $\mu$ M) for 24 h cells were exposed to H<sub>2</sub>O<sub>2</sub> (800  $\mu$ M) for 4 h. At the end, the cell survival rate and intracellular reactive oxygen species (ROS) production in both periods were evaluated using AlamarBlue® and 2', 7'-dichlorodihydrofluorescein diacetate (DCFH-DA), respectively. The western blot test was done to compare the protein level of phospho SAPK/JNK, SAPK/JNK, PI3 Kinase P85, Phospho-PI3 Kinase P85, caspase-3 and Cyt c. **Results:** Crocin and donepezil could decrease A $\beta$  toxicity and ROS level significantly compared to the untreated control group. While treatment with A $\beta$  increased the level of Cyt c, cleaved form of caspase-3, activated form of SAPK /JNK p44/4 and decreased activated form of PI3 Kinase P85 protein, crocin could significantly block the apoptosis initiated with A $\beta$ . **Conclusion:** According to the results crocin could be a promising candidate for further evaluations in the progression of Alzheimer s diseases via MAPK and PI3 K pathways.

## کلمات کلیدی:

Alzheimer s disease, beta-amyloid, crocin, hydrogen peroxide, donepezil, oxidative stress

## لینک ثابت مقاله در پایگاه سیویلیکا:

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