

## عنوان مقاله:

Protective effects of Aloe vera gel on cisplatin-induced oxidative stress, apoptosis and neurons structure in rat hippocampus

## محل انتشار:

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## نویسندگان:

Naeem Erfani Majd - *Department of Basic Sciences, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran*

Raheleh Shahraki - *Department of Basic Sciences, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran*

Mohammad Reza Tabandeh - *Department of Basic Sciences, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran*

Shima Hosseinifar - *Department of Basic Sciences, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran*

## خلاصه مقاله:

Cisplatin (CP) as an important chemotherapeutic drug is used for the treatment of various malignancies; but it has some side effects on central nervous system, in particular hippocampus. The present study was aimed to determine the protective effects of Aloe vera (AV) gel on CP-induced oxidative stress, apoptosis and neurons structure changes in the hippocampus of rats. Forty-eight rats were divided into six groups including control, CP ( $5 \text{ mg kg}^{-1}$  per week; intra-peritoneally), CP + AV ( $400 \text{ mg kg}^{-1}$  per day; orally), CP + metformin ( $200 \text{ mg kg}^{-1}$  per day; orally), AV ( $400 \text{ mg kg}^{-1}$  per day; orally) and metformin ( $200 \text{ mg kg}^{-1}$  per day; orally). At the end of treatment, brain samples were obtained for analysis of apoptotic genes expression and anti-oxidant markers as well as histological study. The results showed that CP caused an increase in malondialdehyde level and a decrease in glutathione peroxidase, superoxide dismutase and catalase levels in CP group compared to control. The AV gel could diminish oxidative stress in the hippocampus of CP group and it resulted in down-regulation of Bax, caspase-3 and caspase-8 and up-regulation of Bcl-2 in CP group. It could ameliorate degenerative changes in hippocampus after exposure to CP. Our results showed that AV gel ameliorated oxidative stress, apoptosis and neuronal loss in the hippocampus of rats under CP treatment.

## کلمات کلیدی:

Aloe vera, Apoptosis, Cisplatin, Hippocampus, Oxidative stress

## لینک ثابت مقاله در پایگاه سیویلیکا:

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