

## عنوان مقاله:

Utilization of a chicken embryo membrane model for evaluation of embryonic vascular toxicity of *Dorema ammoniacum*

## محل انتشار:

مجله گیاهان دارویی ابن سینا، دوره 10، شماره 2 (سال: 1399)

تعداد صفحات اصل مقاله: 9

## نویسندگان:

Hadi Tavakkoli - *Department of Clinical Science, School of Veterinary Medicine, Shahid Bahonar University of Kerman, Kerman, Iran*

Amin Derakhshanfar - *Diagnostic Laboratory Sciences and Technology Research Center, School of Paramedical Sciences, Shiraz University of Medical Sciences, Shiraz, Iran.* | *Center of Comparative and Experimental Medicine, Shiraz University of Medical Sciences, Shiraz*

Javad Moayedi - *Diagnostic Laboratory Sciences and Technology Research Center, School of Paramedical Sciences, Shiraz University of Medical Sciences, Shiraz, Iran.* | *Center of Comparative and Experimental Medicine, Shiraz University of Medical Sciences, Shiraz*

Ali Poostforoosh Fard - *Executive Secretary of Medical Ethics Committee, Vice-Chancellery of Research and Technology, Shiraz University of Medical Sciences, Shiraz, Iran*

## خلاصه مقاله:

Objective: Extensive research has been done to assess the efficacy of herbs for treating different disorders. *Dorema ammoniacum* (*D. ammoniacum*) is used in folk medicines for various goals. The application of herbs in medicine is accompanied by harmful effects. Chick embryo is considered a suitable model for assessing drugs toxicity. The present study aimed to evaluate the changes in vasculature in chick's extra-embryonic membrane following *D. ammoniacum* treatment. Alterations in molecular pathways associated with early embryonic angiogenesis such as vascular endothelial growth factor A (VEGF-A) were also evaluated. Materials and Methods: Fertile chicken (Ross 308) eggs were allocated into three similar groups; sham, control and *D. ammoniacum* groups; in *D. ammoniacum* group, eggs were inoculated with plant's extract at doses of 50 or 100 mg per kg egg-weight. Results: Analysis of the extra-embryonic membrane vasculature revealed that *D. ammoniacum* extract decreases some vascular parameters such as vessels area, total vessels length, vascular branch and increases lacunarity. This herb's vascular toxicity was in a dose-dependent manner. Down-regulation of the expression of VEGF-A was also seen in the extract-treated extra-embryonic membrane. Conclusion: Vascular toxicity of *D. ammoniacum* was confirmed by data presented in this paper. We conclude that alteration of vascular parameters and gene expression might finally lead to embryo malformation due to *D. ammoniacum* consumption. Therefore, the use of this herb must be limited during the fetal growth period especially at doses higher than 50 mg per kg.

## کلمات کلیدی:

*Dorema ammoniacum*, Embryo, fetus, Pathology, Angiogenesis, VEGF-A

