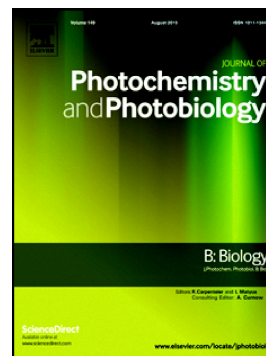


Accepted Manuscript

Antioxidant and antiapoptotic effects of sea cucumber and valsartan against doxorubicin-induced cardiotoxicity in rats: The role of low dose gamma irradiation

Doaa M. Ibrahim, Rasha R. Radwan, Salma M. Abdel Fattah



PII: S1011-1344(17)30118-5

DOI: doi: [10.1016/j.jphotobiol.2017.03.022](https://doi.org/10.1016/j.jphotobiol.2017.03.022)

Reference: JPB 10773

To appear in: *Journal of Photochemistry & Photobiology, B: Biology*

Received date: 26 January 2017

Revised date: 9 March 2017

Accepted date: 28 March 2017

Please cite this article as: Doaa M. Ibrahim, Rasha R. Radwan, Salma M. Abdel Fattah , Antioxidant and antiapoptotic effects of sea cucumber and valsartan against doxorubicin-induced cardiotoxicity in rats: The role of low dose gamma irradiation. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. *Jpb*(2017), doi: [10.1016/j.jphotobiol.2017.03.022](https://doi.org/10.1016/j.jphotobiol.2017.03.022)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Antioxidant and antiapoptotic effects of sea cucumber and valsartan against doxorubicin-induced cardiotoxicity in rats: the role of low dose gamma irradiation

Doaa M. Ibrahim¹, Rasha R. Radwan^{2*} and Salma M. Abdel Fattah²

¹Biochemistry Department, Faculty of Science, Ain Shams University

²Drug Radiation Research Department, National Center for Radiation Research and Technology (NCRRT), Egyptian Atomic Energy Authority (EAEA), P.O. Box 29, Nasr City, Cairo, Egypt

*Correspondence: rasha_radwan33@yahoo.com

Abstract

Doxorubicin (DOX) is a highly effective antineoplastic drug; however, the clinical use of DOX is limited by its dose dependent cardiotoxicity. This study was conducted to evaluate the cardioprotective effect of sea cucumber and valsartan against DOX-induced cardiotoxicity in rats. Also, the role of exposure to low dose γ radiation (LDR) on each of them was investigated, since LDR could suppress various reactive oxygen species-related diseases. Rats received DOX (2.5 mg/kg, ip) in six equal injections over a period of 2 weeks, sea cucumber (14.4 mg/kg, p.o) and valsartan (30 mg/kg, p.o) for 8 successive weeks. Exposure to LDR (0.5 Gy) was performed one day prior to DOX. Results revealed that DOX administration elevated serum levels of aspartate aminotransferase (AST), lactate dehydrogenase (LDH), creatine kinase (CK-MB) and troponin-I as well as increased cardiac lipid peroxide content and myeloperoxidase (MPO) activity. Additionally, it increased cardiac expressions of iNOS and caspase-3, accompanied by reduction in cardiac total protein and glutathione (GSH) contents. Treatment with sea cucumber or valsartan improved the cardiotoxicity of DOX. Their adjuvant therapy with LDR offers an additional benefit to the cardioprotection of the therapeutic drugs. These results confirmed by histopathological examination. In conclusion, sea cucumber and valsartan alone or combined with LDR attenuated DOX-induced cardiotoxicity via their

Download English Version:

<https://daneshyari.com/en/article/4754466>

Download Persian Version:

<https://daneshyari.com/article/4754466>

[Daneshyari.com](https://daneshyari.com)