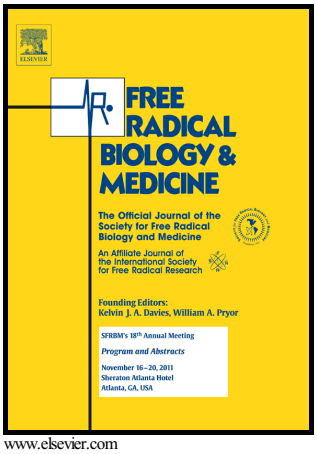
Author's Accepted Manuscript

Theaflavin ameliorates ionizing radiation-induced hematopoietic injury via the NRF2 pathway

Xiaodan Han, Junling Zhang, Xiaolei Xue, Yu Zhao, Lu Lu, Ming Cui, Weimin Miao, Saijun Fan



www.elsevier.com

PII: S0891-5849(17)30758-X
DOI: http://dx.doi.org/10.1016/j.freeradbiomed.2017.09.014
Reference: FRB13452

To appear in: *Free Radical Biology and Medicine*

Received date: 20 July 2017
Revised date: 8 September 2017
Accepted date: 17 September 2017

Cite this article as: Xiaodan Han, Junling Zhang, Xiaolei Xue, Yu Zhao, Lu Lu, Ming Cui, Weimin Miao and Saijun Fan, Theaflavin ameliorates ionizing radiation-induced hematopoietic injury via the NRF2 pathway, *Free Radical Biology and Medicine,* http://dx.doi.org/10.1016/j.freeradbiomed.2017.09.014

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 galley proof before it is published in its final citable 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.

ACCEPTED MANUSCRIPT

Theaflavin ameliorates ionizing radiation-induced hematopoietic injury via the NRF2 pathway

Xiaodan Han[1&], Junling Zhang[1&], Xiaolei Xue[1], Yu Zhao[1], Lu Lu[1], Ming Cui[1], Weimin Miao[2] and Saijun Fan[1]*

1. Tianjin Key Laboratory of Radiation Medicine and Molecular Nuclear Medicine, Institute of Radiation Medicine, Peking Union Medical College and Chinese Academy of Medical Science, Tianjin 300192, China.
2. State Key Laboratory of Experimental Hematology, Institute of Hematology and Blood Disease Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Tianjin, 300041,China

[&]These authors contributed equally to this work.

*Corresponding author at: Institute of Radiation Medicine, Peking Union Medical College and Chinese Academy of Medical Science, Tianjin, China.

Email: hanxiaodan1202@163.com (X. Han); zhangjunling@irm-cams.ac.cn (J. Zhang); fansaijun@irm-cams.ac.cn (S. Fan)

Accepted manuscript

Highlights

- TF scavenges ROS and inhibits DNA damage in irradiated HSCs
- TF inhibits IR-induced HSC senescence
- TF activates the NRF2 pathway in irradiated HSCs
- TF-mediated protection against IR is abrogated by NRF2 deficiency

Abstract

It has been well established that reactive oxygen species (ROS) play a critical role in ionizing radiation (IR)-induced hematopoietic injury. Theaflavin (TF), a polyphenolic compound from black tea, has been implicated in the regulation of endogenous cellular antioxidant systems. However, it remains unclear whether TF could ameliorate IR-induced hematopoietic injury, particularly the hematopoietic stem cell (HSC) injury. In this study, we explored the potential role of TF in IR-induced HSC injury and the underlying mechanism in a total body irradiation (TBI) mouse model.

Download English Version:

https://daneshyari.com/en/article/5501606

Download Persian Version:

https://daneshyari.com/article/5501606

Daneshyari.com