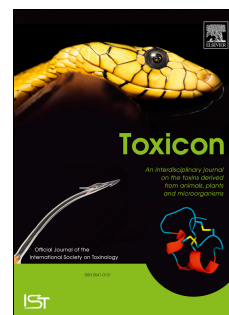


Accepted Manuscript

Lactobacillus plantarum alleviate aflatoxins (B₁ and M₁) induced disturbances in the intestinal genes expression and DNA fragmentation in mice

Rania Jebali, Jalila Ben Salah-Abbès, Samir Abbès, Aziza M. Hassan, Sekena H. Abdel-Aziem, Aziza A. El-Nekeety, Ridha Oueslati, Mosaad A. Abdel-Wahhab



PII: S0041-0101(18)30120-X

DOI: [10.1016/j.toxicon.2018.03.008](https://doi.org/10.1016/j.toxicon.2018.03.008)

Reference: TOXCON 5842

To appear in: *Toxicon*

Received Date: 20 November 2017

Revised Date: 7 March 2018

Accepted Date: 20 March 2018

Please cite this article as: Jebali, R., Ben Salah-Abbès, J., Abbès, S., Hassan, A.M., Abdel-Aziem, S.H., El-Nekeety, A.A., Oueslati, R., Abdel-Wahhab, M.A., *Lactobacillus plantarum* alleviate aflatoxins (B₁ and M₁) induced disturbances in the intestinal genes expression and DNA fragmentation in mice, *Toxicon* (2018), doi: 10.1016/j.toxicon.2018.03.008.

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.

***Lactobacillus plantarum* alleviate aflatoxins (B₁ and M₁) induced disturbances in the intestinal genes expression and DNA fragmentation in mice**

Rania Jebali¹, Jalila Ben Salah-Abbès², Samir Abbès², Aziza M. Hassan^{3,4}, Sekena H Abdel-Aziem³, Aziza A El-Nekeety⁵, Ridha Oueslati¹, Mosaad A. Abdel-Wahhab^{5**}

¹Unit of Immunology, Environmental Microbiology and Cancerology, Faculty of Science, University of Carthage, Tunis, Tunisia

²Laboratory of Genetic, Biodiversity and Bio-Ressources valorization, Higher Institute of Biotechnologie of Monastir, University of Monastir, Tunisia

³Cell Biology Department, National Research Center, Dokki, Cairo, Egypt

⁴Biotechnology Department, College of Science, Taif University, Saudi Arabia

⁵Food Toxicology & Contaminants Department, National Research Center, Dokki, Cairo, Egypt

ABSTRACT

This study aimed to assess the disturbances in intestinal genes expression and DNA fragmentation in mice treated orally with aflatoxin B₁ (AFB₁) or aflatoxin M₁ (AFM₁) and the protective activity of *Lactobacillus plantarum* (LP). Male Balb/c mice were divided into 6 groups including the control group, the group treated with 2 mg/kg b.w of LP (2×10^9 cfu/ml), the groups treated with AFB₁ or AFM₁ (100 µg / kg b.w), and the groups treated with AFB₁ or AFM₁ during, after or before LP. Small intestines were collected for the determination of DNA fragmentation, gene expression and target protein content. The results showed that AFB₁ or AFM₁ increased DNA fragmentation, down regulated the expressions of caspase-3, caspase-9, CYP3A13, Bax and p53 as well as up-regulated the expression of TNF-α and Bcl-2 and their target proteins. LP succeeded to alleviate the disturbances in DNA fragmentation and the expression of these genes. The improvement was more pronounced in the group co-administered with the toxins plus LP. It could be concluded that AFB₁ and AFM₁ induced disturbances in intestinal function via the disturbances in DNA fragmentation and genes expression. LP induced a potential protective effect and is considered a promising agent against the genotoxicity induced by these mycotoxins.

Keywords: Aflatoxin B₁; Aflatoxin M₁; Mycotoxins; genotoxicity; intestine; gene expression

****** Corresponding author: Fax: 202-3337-0931, Tel: 202-2283-1943, E-mail: mosaad_abdelwahhab@yahoo.com (M. A. Abdel-Wahhab)

Download English Version:

<https://daneshyari.com/en/article/8394490>

Download Persian Version:

<https://daneshyari.com/article/8394490>

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