

# Eat healthy and fight against detrimental effects of mycotoxins

Thursday, 7 March 2024 13:15 (15 minutes)

Mycotoxins toxicity from low but continuous exposure through diet might be prevented through the intake of functional ingredients. Fermented whey (FW) with lactic acid bacteria is obtained from goat milk and rich in organic and phenolic acids. This study *in vivo* aims to confirm the possible beneficial effect of these two functional ingredients against mycotoxins. A subchronic study was performed using Wistar rats exposed for 28 days. After baking, AFB1 ranged from  $4.31\pm 0.16$  to  $4.92\pm 0.29$  mg/kg and OTA, from  $6.03\pm 0.39$  to  $8.27\pm 0.07$  mg/kg. Duodenum from male rats was analysed by qPCR. AFB1 contaminated feed caused an upregulation of p53 and Bax proapoptotic genes in the duodenum. Inclusion of FW as a functional ingredient slightly reduced gene expression but upregulated NF- $\kappa$ B. OTA exposure significantly upregulated antiapoptotic gene NF- $\kappa$ B. Proapoptotic gene Bax and antioxidant defense enzyme Hmox1 were moderately upregulated. FW soothes the effect on the three genes and upregulates p53. Simultaneous exposure to AFB1 and OTA led to under expression of Bax, counteracted by the addition of FW to feed, which also led to upregulation of NF- $\kappa$ B. All these results suggest a protection against mycotoxin effects by lyophilised FW included in feed at duodenum level in the gastrointestinal tract.

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**Session Classification:** The role of life sciences in an increasingly aging society

**Track Classification:** General sessions: Role of life sciences in an increasingly aging society