

(O11) Ochratoxin A biodegradation by *Pediococcus parvulus*

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Some lactic acid bacteria (LAB) have mycotoxin decontaminating properties due to the absorbing characteristics of their cells walls and because some can biotransform mycotoxins into less toxic compounds. One important mycotoxin found in agricultural commodities is ochratoxin A (OTA). OTA is known mainly for its nephrotoxicity and carcinogenicity being classified in Group 2B by IARC.

The present work reports on the ability of *Pediococcus parvulus* strains, which were isolated from Douro wines, to detoxify OTA. These strains were identified and characterised using a polyphasic approach that employed both phenotypic and genotypic methods. Strains were cultured in OTA-supplemented MRS media (1 µg/mL) at different conditions. The influence of bacteria inoculum size, OTA concentration in MRS medium and incubation temperature was evaluated.

OTA was biodegraded into OT α by *P. parvulus* strains in all conditions but not by reference strains. OT α was confirmed using LC-MS/MS. The conversion of OTA into OT α indicates that OTA amide bond was hydrolysed by a putative peptidase. The rate of OTA biodegradation was found to be dependent on the bacteria inoculum size and on the incubation temperature. Under optimum conditions (10⁹ CFU/mL and 30 °C), 50% and 90% of OTA was degraded in 6 and 19 h, respectively. Dead cells of *P. parvulus* adsorbed only 1.3% of OTA, excluding this mechanism in the elimination of OTA by strains. OTA biodegradation by *P. parvulus* UTAD 473 was also evaluated and observed in grape must. Vinification experiments were also conducted.

Because some *P. parvulus* strains have relevant probiotic properties, the strains that were identified could be particularly relevant to food and feed applications to counteract the toxic effects of OTA.

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	toxicity of multiple chemicals by using conceptual mathematical modelling”	of Aveiro, Aveiro, Portugal
14:45– 15:15	Invited speaker “Combinatory effects of mycotoxins”	Doris Marko, University of Vienna, Vienna, Austria
15:15-15:30	Discussion	
15:30– 15:45	Coffee break & poster session	
Oral communications		
15:45-16:00	Combined toxicity of aflatoxin B ₁ and ochratoxin A in <i>in vitro</i> and <i>in vivo</i> models	Ariane Vettorazzi, University of Navarra, Pamplona, Spain
16:00-16:15	Effect of gamma radiation on the cytotoxicity and estrogenicity of zearalenone	Thalita Calado, University of Minho, Braga, Portugal
16:15-17:00	Ochratoxin A biodegradation by <i>Pediococcus parvulus</i>	Luís Abrunhosa, University of Minho, Braga, Portugal
17:00-17:15	Coping with mercury in a warmer ocean: tissue partitioning and ecophysiological implications in seabass (<i>Dicentrarchus labrax</i>)	Ana Maulvault, Portuguese Institute for the Sea and Atmosphere, Lisbon, Portugal
17:15-17:30	Concluding remarks	
17:30-18:00	Best Poster Award & Closing Session	

DAY 3

10:00 – 13:00	Post-Meeting workshop – Mycomix Project Assembly.
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