

P13-024**Effects of single oral doses of trichothecene mycotoxins on young common carp (*Cyprinus carpio* L.)**K. Balogh^{1,*}, C. Pelyhe¹, E. Zándoki², J. Szabó-Fodor², M. Mézes¹¹ Szent István University, Department of Nutrition, Gödöllő, Hungary² MTA-KE, Mycotoxins in the Food Chain Research Group, Kaposvár, Hungary

The effects of single oral doses of T-2 toxin and deoxynivalenol (DON) (0.25 and 0.50 mg/kg body weight/b.w./, respectively) were investigated in 1-year old (35.92 ± 2.82 g b.w.) common carp ($n = 110$). After a week of adaptation period, at the start of the experiment, five groups were formed: a control and four treated groups. The treated groups were as follows: lower dose of T-2 toxin ('TL'), higher dose of T-2 toxin ('TH'), lower dose of DON ('DL') and higher dose of DON ('DH'). The complete feed of the treated groups was artificially contaminated with the different mycotoxin doses, and was injected directly into the stomach by gavage. The sham operated control group was fed by the same way. After the single oral mycotoxin exposure, samples were taken at every 8th hour during the 24-h long experimental period. At every sampling, 6 carps were exterminated from each group and post mortem liver samples were taken, from which reduced glutathione (GSH) concentration and activity of glutathione-peroxidase (GPx), glutathione reductase (GR) and glutathione-S-transferase (GST) were measured. To investigate the lipid peroxidation processes, the amount of conjugated dienes (CDs) and -trienes (CTs) and malondialdehyde (MDA) concentration were determined. The amount of CDs and CTs in liver showed increase ($p < 0.01$) in both DON groups compared to control at 16 h, and remarkable increase in 'TL' group compared to the control at 16 h and 24 h. At 16 h GSH concentration was higher ($p < 0.05$) in both T-2 toxin treated groups than the control. GPx activity was elevated ($p < 0.01$) in 'TH' and 'DH' groups at 16 h. GST activity was higher in 'TH' group than the control at 24 h. Elevated GR activity was measured in 'DH' group at 16 h and 24 h, and in 'TL' group at 24 h. The results show that single oral doses of the investigated mycotoxins caused rapid changes in the lipid peroxidation processes in the liver of carps, the key organ of the xenobiotic transformation, as measured by the increased amount of CDs and CTs. The emerging free radical burden quickly activated the glutathione redox system, which was able to eliminate the harmful peroxidative effect of the mycotoxins investigated, so the end-product of the lipid peroxidation processes (MDA) did not elevate significantly.

The research was supported by the National Scientific Research Fund (OTKA PD104823).

<http://dx.doi.org/10.1016/j.toxlet.2015.08.811>

P13-025**Cadmium chloride inhibits Sertoli cell precursor proliferation and migration: an *in vitro* study**

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A primary concern regarding exposure to heavy metals centres on their negative impact on various aspects of human health including reproductive health. The objective of this study was to examine the effects of CdCl₂ on the proliferation, migra-

tion, and microfilament like cells. In order to a techniques were used, in diphenyltetrazolium bromide (MTT) assay, lactate dehydrogenase (LDH) release, and cell cycle analysis and live cell imaging. A concentration dependent effect of 1 μM CdCl₂ was sub-cytotoxic. A concentration of CdCl₂ consistent with reduced cell viability increased cell rounding and cell death. 12 μM CdCl₂ treatment resulted in a 24 h scratch assay. CdCl₂ induced a concentration dependent effect on the levels of actin and phosphorylation of p38 and cofilin. The data presented suggest that Cd²⁺ inhibits Sertoli cell proliferation and/or dynamics of the cytoskeleton associated with transient cofilin.

<http://dx.doi.org/10.1016/j.toxlet.2015.08.811>

P13-027**Elucidation of the mechanism of phosphoinositide 3-kinase mediated dyserythropoiesis**

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Phosphoinositide 3-kinase (PI3K) provides an opportunity to inhibit kinase activity (e.g. neutrophils) involved in erythropoiesis. Early in the preclinical development of Novartis, severe erythropoiesis in the premature sacrifice of repeat dose rat toxicity studies was observed. No such findings were observed in the treatment period, of the study. Investigational readouts from the study to establish whether the previous study was an artifact. 3/27 cases of severe erythropoiesis similar to the case observed in the treatment-related effect were observed. Increased reticulocyte count in the absence of any sign of anemia, and cell consumption, was observed (dyserythropoiesis) from the study in males. The effect on erythropoiesis related. A proposed mechanism of PI3K-dependent erythropoiesis and differentiation hypoplasia was investigated. CFC-GEMM mature stem cells derived from human erythropoiesis investigations showed that the effect was cytotoxic to CFC-GEMM populations. Cytotoxicity was characterized in terms of cell death *in vitro-in vivo* correlation studies. Mechanism of toxicity and es-