

Induction of Hsp70 and Antioxidant Status in Porcine Granulosa Cells in Response to Deoxynivalenol and Zearalenone Exposure in vitro

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Abstract : The aim of this study was to determine the activity of superoxide dismutase (SOD), glutathione peroxidase (GPx), total antioxidant status (TAS) and accumulation of Hsp70 in porcine ovarian granulosa cells after deoxynivalenol (DON) and zearalenone (ZEA) exposure in vitro. Porcine ovarian granulosa cells were incubated with DON/ZEA administrations as follows: group A (10/10 ng/mL), group B (100/100 ng/mL), group C (1000/1000 ng/mL), and the control group without any additions for 24h. In this study mycotoxins developed stress reaction of porcine ovarian granulosa cells and increased accumulation of Hsp70 what resulted in increasing activities of SOD and GPx in groups with lower doses of mycotoxins. High dose of DON and ZEA had opposite effect on GPx activity than the lower doses. Slight increase in TAS of porcine granulosa cells was observed after mycotoxins exposure. These results contribute towards the understanding of cellular stress and its response.

Keywords : deoxynivalenol, zearalenone, antioxidants, Hsp70, granulosa cells

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