

Mycotoxins, Parkinson and DNA damage

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Mycotoxins (MTX) are a group of naturally occurring fungal metabolites contaminating a huge variety of crops worldwide. The current climate change scenario might also modify human exposure as new emerging MTX or mixtures might appear. The main health concern is related to their genotoxic and carcinogenic potential and different regulations have been laid down to diminish human exposure. In the last decades, the MTX ochratoxin A (OTA) has also been described to be neurotoxic. On the other hand, although some environmental factors, such as living in rural areas, have been associated with an increased risk of getting Parkinson's disease (PD), etiological agents for the disease have not yet been identified.

Our group has demonstrated preliminary data on long-term effects of OTA on PD related molecular features (alpha-synuclein pathology, dopaminergic dysfunction and motor deficits) six months after the end of a 28 day oral treatment in mice (0.21 or 0.5 mg/kg b.w.). Moreover, the mechanism was further validated *in vitro* in a human SH-SY5Y neuroblastoma cell line. In this lecture, the preliminar results obtained within the funded project "Mycotoxins and Parkinson: the missed link" (Gobierno de Navarra, 2019-project 43), as well a new insights linking DNA damage and PD will be presented.