

EFFECTS OF AFLATOXIN B₁, OCHRATOXIN A AND COMBINATION OF THE TWO TOXINS, IN HUMAN INTESTINAL CACO₂ CELLS AND HUMAN HEPATOMA CELLS (HEP G2) AND PARTIAL PROTECTION BY ANTIOXIDANTS

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Ochratoxins and Aflatoxins are mycotoxins produced by fungi from *Aspergillus* genera and possibly found together as contaminants of the same foodstuff. Ochratoxin A (OTA) and Aflatoxin B₁ (AFB₁) are separately cytotoxic to human intestinal Caco₂ cell line with respectively IC₅₀ of 5 µM and 2 µM and similarly on human hepatoma cells (HEP G2) as assessed by neutral red test and MTS test. They are also responsible for protein and DNA synthesis inhibition in both the cell lines. Protein and DNA synthesis were assayed, after 24h and 48h, treating the two cell lines with increasing concentrations of OTA and AFB₁ (0-25µM). Combinations of the two toxins were also tested in this in vitro system, to find out the presence of any synergistic or combined effect.

Because of the oxidative stress induced by the two mycotoxins, antioxidants and drugs that display such activity (Oltipraz, cyanidin and rosmarinic acid) were used in attempt to prevent the cytotoxicity, DNA and protein synthesis inhibition. Results show partial protection, more evident with Ochratoxin A than Aflatoxin B₁.

Keywords: Ochratoxin A, Aflatoxin B₁, Combined cytotoxicity, Prevention.