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Cytotoxic Effect of Mycotoxin Extracts from Nigerian Food on Human Blood Mononuclear Cells

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ABSTRACT Mycotoxin positive extracts from some Nigerian food commodities were exposed to human blood mononuclear (HBM) cells following methyl thiazol tetrazolium (MTT) salt assay. Human blood mononuclear cells isolated from the plasma of healthy donors were exposed to extracts derived from multi-mycotoxin dialysis clean up technique for up to 72 hours and cell viability of the mononuclear cells evaluated. Selected neutral fraction extracts, which contained high concentrations of aflatoxins (109.78µg/kg), zearalenone (531.9µg/kg) and deoxynivalenol (4.60µg/kg) induced cell viability reduction up to 72.3 percent after 48 hours, whereas, acid fraction extracts containing a high ochratoxin concentration (525.4µg/kg) reduced up to 72.4 percent after 48 hours. Food extracts containing high concentration of fumonisins (3643.6µg/kg) induced reduced viability up to 86.7 percent after 48 hours. The study showed that a combination of mycotoxins could exert a reduction in cell viability of human HBM cells thereby, resulting in immune suppression. This paper contributes to the knowledge of cytotoxic effects of extracts (containing different mycotoxins) from different Nigerian food commodities on HBM cells.