Fumonisins in foods from Cordoba (Argentina), presence and genotoxicity

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RESUMEN

Fumonisins B1, B2 y B3 (FB1, FB2 y FB3), are a group of toxins produced by different mold species, Fusarium moniliforme and Fusarium proliferatum being the most important ones. Its compounds were tested in chromosome aberrations (CA), sister chromatid exchange (SCE), and micronucleus (MN) in human lymphocytes, and, in Allium cepa (onion), the chromosomal aberrations (CA) assay was used. Moreover, the presence of fumonisins and their producer moulds was determined in different food substrata in Cordoba city, Argentina. Cytogenetic studies using FB 1, FB2 and FB3 levels gave positive results for the higher concentrations (5 and 10 μ g/g) with FB1. As regards the cytogenetic aspect of FB1, we found an increase in the incidence of genetic damage measured by chromosomal aberrations, sister chromatid exchange, micronuclei and chromosomal aberrations in Allium cepa. These results indicate that human lymphocytes cells and plants cells (Allium cepa) have a very sensitive cellular response to the mycotoxin fumonisin B1 as observed at the highest concentrations.

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