

Genotoxic and Genoprotective Potential of Black

Mulberry (*Morus nigra*) Fruit Juice

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Abstract

Black Mulberry (*Morus nigra* L.) is belonging to the Moraceae family. The present study evaluated the possible genotoxic and/or protective activities of black mulberry fruit juice (BMFJ), in vitro, using mitomycin C (MMC) as a positive control, by chromosomal aberrations and micronucleus assays. Human lymphocytes were treated with BMFJ concentrations alone (1/1, 1/2, 1/4, 1/8 dilutions), pretreatment (49h) (0.20 µg/ml MMC+ 1/1 BMFJ, 0.20 µg/ml MMC+1/2 diluted BMFJ, 0.20 µg/ml MMC+1/4 diluted BMFJ, 0.20 µg/ml MMC+1/8 diluted BMFJ) and simultaneous-treatment (48h) (0.20 µg/ml MMC+ 1/1 BMFJ, 0.20 µg/ml MMC+1/2 diluted BMFJ, 0.20 µg/ml MMC+1/4 diluted BMFJ, 0.20 µg/ml MMC+1/8 diluted BMFJ). The in vitro results demonstrated that BMFJ showed no genotoxicity, but it significantly decreased chromosomal aberration and micronucleus induced by MMC. Protective effects of BMFJ on MMC induced chromosomal damages most probably due to its free radical scavenging activity.

Keywords: Black mulberry, chromosomal aberrations, micronucleus, genotoxicity, antigenotoxicity