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Antigenotoxicity of Vegetable and Fruit Extracts

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The ethanol extracts of mixed vegetables (Bioactive V, BV), mixed fruits (Bioactive F, BF) and their liquid formulation (Chungpae Plus®) were evaluated for antioxidative and antigenotoxic activity. They were shown to possess the significant free radical scavenging effect against 1,1-diphenyl-2-picryl hydrazine (DPPH) radical generation and were revealed to show the inhibitory effect of lipid peroxidation as measured by malondialdehyde (MDA) formation. They were also found to strongly inhibit cigarette smoke condensate (CSC) or hydrogen peroxide-induced DNA damage from mammalian cells, assessed by single cell gel electrophoresis. Furthermore, oral administration of vegetables and fruits extracts inhibited micronucleated reticulocyte (MNRET) formation of mouse peripheral blood induced by CSC or KBrO₃ treatment in vivo. The liquid formulation under same experimental conditions also showed similar antigenotoxicity in vitro and in vivo. Therefore, the liquid formulation (Chungpae Plus®) containing BV and BF may be a useful natural antioxidative and antigenotoxic agent by scavenging free radicals, inhibition of lipid peroxidation and protecting DNA damage.

Keyword : vegetables, fruits, antioxidant, single cell gel electrophoresis, micronucleus assay