【P-31】

The Effect of Onion Extract on the Bleomycin and Benzo(a)pyrene Induced Micronuclei and DNA Damage in Human Lymphocytes

Yoon Hee Cho, Hae Dong Woo, Hyojee Joung and Hai Won Chung
School of Public Health, Seoul National University

Onion is known as one of the major dietary sources rich in flavonoids . In order to examine the antioxidant effect of onion extract on the bleomycin(BLM) or benzo(a)pyrene (B(a)P) induced genotoxicity in human lymphocytes, cytokinesis-blocked micronucleus (CBMN) assay and single cell gel electrophoresis assay were performed. Human lymphocytes were pretreated with two different concentrations of onion extract(5 and 10 μg/ml) for 1 hour followed by treatment with various concentrations of BLM(1 and 3 μg/ml) or B(a)P(5 and 10 μg/ml). The frequencies of BLM or B(a)P induced MNi and DNA damage increased in a dose-dependent manner(p=0.000). When lymphocytes were pretreated with onion extract, the frequency of BLM-induced MNi was decreased at all concentrations of BLM whereas DNA damage was decreased only at high concentration. In contrast to results with BLM treatment, onion extract decreased the frequency of B(a)P induced MNi only at high concentration of B(a)P while it decreased B(a)P induced DNA damage at all concentrations. The results of this study showed the protective effect of onion extract against genotoxicity of BLM and B(a)P.

Keyword : onion extract, bleomycin, benzo(a)pyrene, CBMN, single cell gel electrophoresis assay