Czech Journal of FOOD SCIENCES

Table of Contents

Czech J. Food Sci.

Polívková Z., Langová M., Šmerák P., Bártová

B.; Barta I.

Antimutagenic effect of genistein

Czech J. Food Sci., 24 (2006): 119-126

A great variety of health benefits including the protection against breast and prostate cancers has been attributed to the soya consumption, because of the presence of soy beans isoflavones, genistein, and others. We investigated the antigenotoxic effect of genistein on the genotoxicity of three mutagens and carcinogens – aflatoxine B_1 (AFB_1), 2-amino-3-methylimidazo [4,5-f]quinoline (IQ), and *N*-nitroso-*N*-methylurea (MNU), using the Ames bacterial mutagenicity test and the micronucleus test. In the Ames test on *Salmonella typhimurium*, a significant antimutagenic effect was determined against the indirect mutagen AFB_1 in two strains, TA98 and TA100. However, the effect on the IQ indirect mutagenicity was more pronounced in the test with TA98 than with TA100. The mutagenicity of the direct mutagen MNU was suppressed by genistein only at its highest concentration

used (300 µg/plate). The protective effect of genistein against all three mutagens was proved in the micronucleus test as the treatment of mice with the combinations of genistein and mutagens resulted in a significant reduction of the number of micronuclei in comparison with the number of micronuclei induced by the individual mutagens alone.

Keywords:

chemoprevention; aflatoxin B_1; 2-amino-3-methylimidazo [4,5-f]quinoline; *N*-nitroso-*N*-methylurea; Ames test; micronucleus test

[fulltext]