

P089 Evaluation of the inhibitory effects of food components on benzo[a]pyrene induced chromosomal aberration

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We examined the inhibitory effects of food components on benzo[a]pyrene (BP) induced chromosomal aberration by peripheral blood micronucleus test. Male ICR mice at 7 weeks of age were divided into 7 groups of 5 mice each. Mice were fed either a basal diet of AIN-93G (control) or 6 experimental diets containing 0.5% food components (isoflavone, epigallocatechingallate, rutin, hesperidin, curcumine, and ellagic acid, respectively) for 3 weeks. They received intraperitoneal injections of BP at a dose of 125 mg/kg body weight at 48 h before sacrifice. Peripheral blood sampled from the same animal was examined 0, 24, and 48 h after injection. The frequencies of micronucleated peripheral reticulocytes (MNRETs) were recorded based on observation of 1000 or 2000 reticulocytes per mouse. BP induced MNRETs peaking at 48 h after injection. At 48 h after injection, each of all food components significantly reduced the number of MNRETs when compared with the control. In conclusion, Various food components were found to inhibit the genotoxicity by BP and the present method could be useful as a simple screening assay for the evaluation of anti-mutagenicity of food components.

ベンゾ[a]ピレンにより誘発した染色体損傷に対する食品成分の抑制効果に関する検討
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P090 Components in yamabudo-grape (*Vitis coignetiae*) inhibit the micronucleous formation in human lymphoblastoid cells by heterocyclic amines

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Yamabudo-grape (*V. coignetiae*) is an edible fruit that grows in a natural state on the mountainsides of Japan, and differs in its spiciness from the well-known grape (*V. vinifera*). Certain heterocyclic amines (HCAs) that are produced in foods during the process of cooking have been identified as potent mutagens, and are suspected as being human carcinogens. We investigated the inhibitory effect of components in yamabudo-grape on micronucleous formation in human lymphoblastoid WTK-1 cells by 3-hydroxyamino-1-methyl-5H-pyrido [4,3-b] indole (Trp-P-2(NHOH)). Trp-P-2(NHOH) was added to the WTK-1 cells with or without yamabudo-grape sample, freeze-dried squeeze and dissolved in the cell medium. After 24hr incubation, Trp-P-2(NHOH) and Yamabudo-grape sample were washed. After additional 24 hr incubation with cytochalasin B, cells were stained and micronucleus were counted. The formation of micronucleus was significantly reduced compared to control treated with Trp-P-2(NHOH) in the absence of yamabudo-grape samples. We concluded that a certain component(s) of wild-grape is responsible for this anti-micronucleus formation. It can provide protection against the genotoxic effects of heterocyclic amines.

ヤマブドウ(*Vitis coignetiae*)成分によるヒト由来細胞における多環芳香族アミン誘導小核の形成抑制
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