

Study on safety of genetically modified(GM) foods– Allergenicity of genetically modified soybean

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There are still argument for the safety of GM foods although genetically modified organism(GMO) using recombinant DNA technology has been exponentially increased. This study was designed to compare the potential allergenicity of GM soybean(Roundup Ready™) with natural soybean varieties. Positive sera from 20 soybean-sensitive patients and control sera from 5 normal subjects were used to identify the endogenous allergens in soybean. Soybean extracts were prepared as crude, heated, heated and gastric fluid (SGF)-digested samples to characterize the stability of allergens to physicochemical treatment. Specific-IgE binding activities to each soybean preparation were evaluated by ELISA and immunoblot technique. In ELISA result, IgE binding activity of positive sera to soy crude extract generally showed tow fold higher mean value than that of control sera, however there was no significant difference between GM soybean and natural soybean varieties. Extracted proteins form each of th soybean preparations were separated with SDS-PAGE. The band pattern for GM soybean was very similar to that of natural soybean varieties. Immunoblots for the different soybeans revealed no differences in IgE-binding protien patterns, moreover, disclosed five prominent IgE-binding bands(75, 70, 50, 44 and 34 kDa) in crude extract, four(75, 70, 44 and 34 kDa) in heated preparation, one(50 kDa) in heated and SGF-digested preparation. These IgE binding bands were consistent with previously reported results on soybean. These results indicate that GM soybean (Roundup Ready™) is no different from natural soybean in terms of its allergenic potential.

Poster Presentations – Field B1. Physiology

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Effects of flavonoid fractions isolated from *Scutellaria baicalensis*, *Eugenia aromaticz*, *Betula mandshrica* on antibody productivity, metabolism of unsaturated fatty acid and lipid hydroperoxides

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After oral administering with three crude drugs such as 100mg and 1,000mg of *Scutellaria baicalensis* (S.bai), *Eugenia aromaticz* (E.aro), *Betula mandshrica* (B.man) to Sprague-Dawley rats for 5 weeks, biochemical studies were done.

On total fatty acid in spleen, flavonoid fractions from three crude drugs showed a trend of increasing the proportion of 20:4n-6 and decreasing of 18:2n-6 suggesting their relation with metabolism of linoleic acid and regulating the eicosanoid production in the polyunsaturated fatty acid metabolism. IgG was significantly increased in spleen of S.bai and B.mand, while IgM was significantly suppressed S.bai and E.aro treated groups as compared with control. On the other hand, S.bai had a strong activity on the IgG in mesenteric lymph node lymphocytes. Cholesterol level was effectively reduced in order of B.mand and S.bai at 5 weeks after administration with flavonoid components of three crude drugs. Phospholipid was significantly lowered in S.bai and B.mand, while triglyceride was also reduced only in S.bai-treated group. B.mand was most effective in reducing phospholipid