

[PB4-7] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

The allergenic potential of soybean curd and soybean milk derived from genetically modified soybean

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This study was designed to compare the allergenic potential of GM soybean (Roundup ReadyTM) foods with non-GM soybean foods (bean curd and soybean milk). Sera from 20 soybean-sensitive patients and sera for control from 4 normal subjects were used to identify allergens in soybean. Bean curd and soybean milk extracts were prepared as crude and simulated gastric fluid (SGF)-digested samples to characterize the stability of allergen to physicochemical treatment as important food allergens were stable to digestion in the gastric model. IgE- and IgG4-specific binding activities to each soybean food preparations were evaluated by ELISA and immunoblot technique. In ELISA result, IgE- and IgG4-specific binding activities of allergic sera to soy crude extracts generally showed two fold higher mean value than those of control sera, however there was no significant difference between GM soybean and non-GM soybean foods. Extracted proteins from each of the soybean preparations were separated with 12% SDS-PAGE. The band pattern for GM soybean foods was very similar to that of non-GM soybean. Immunoblots for the different soybeans revealed no differences in antibody binding protein patterns, moreover, disclosed prominent IgE-binding bands (85, 80, 50, 42, 30, 26, and 22kDa) and IgG4-binding bands (82, 75 and 34kDa) in crude extract. These results indicate that GM soybean foods are no different from natural soy bean foods in terms of its allergenic potential.

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Production and characterization of monoclonal antibodies specific to E6, E6 associated protein, and E7 oncoproteins of human papilloma virus

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Cervical cancer is one of the leading causes of female death. Human papillomaviruses (HPVs) have been recognized as the primary cause of cervical cancer. Viral oncoproteins E6 and E7 are selectively retained and expressed in carcinoma cells infected with human papillomavirus and cooperated in immortalization and transformation of primary keratinocytes. E6 associated protein (E6AP) is a 100 kDa cellular protein which mediates the stable association of the high-risk HPV E6 oncoprotein with tumor suppressor protein p53, resulting in the degradation of p53. E6AP was known as E3 ubiquitin-protein ligase, which has been proposed to play a role in defining the substrate specificity of the ubiquitin-proteasome degradation. E7 oncoprotein interacts with the retinoblastoma protein, which results in dissociation of the E2F-1 transcription factor and activation of genes related to DNA synthesis and cell proliferation. In this study, purified recombinant his tagged E6, E6AP and E7 oncoproteins were injected into Balb/c mice to obtain monoclonal antibodies. Western blots and ELISA showed that each mAbs are specific to respective antigens without any cross-reactions to the irrelevant his tagged proteins. These mAbs can be useful tools to study the functions of oncogenes and oncogene-associated proteins in cervical carcinomas (This work was supported from the Molecular Medicine Program M1-0106-00-0078, Ministry of Science and Technology).