

Elucidation of action and active ingredients of Kampo medicines for intestinal immune system modulation towards their application for modulation on mucosal immune system

○ Hiroaki Kiyohara, Tsukasa Matsumoto, Takayuki Nagai and Haruki Yamada
(Kitasato Inst. Life Sci., Kitasato Univ., Oriental Med. Res. Centr., The Kitasato Inst.)

Mucosal immune system comprises inductive and effective sites present in local mucosa such as in respiratory, intestinal and urogenital tracts. The respective local mucosal immune systems are known to correlate closely through common mucosal immune system by lymphocyte homing to result the maintenance of homeostasis of mucosal and systemic immune systems. It is thought that dysfunction of the mucosal immune system induces the down-regulation of protective sIgA production, allergic and autoimmune diseases. Since traditional Japanese herbal (Kampo) medicines are commonly administered orally, it is postulated that the medicines may modulate the function of local mucosal immune system through potentiation of inductive site in the intestinal immune system. We have analyzed the actions and active ingredients of Kampo medicines, Juzentaihoto and Hochuekkito on the functions of immunocompetent cells in Peyer's patches as the inductive site of intestinal immune system. These Kampo medicines were found to express different modulating activity against immunocompetent cells of Peyer's patches through polysaccharides and lignin-carbohydrate complexes as the active ingredients. Only Hochuekkito was shown to potentiate antigen-specific sIgA production in upper respiratory tract, and it is assumed that Juzentaihoto may express different modulation of mucosal immune system from Hochuekkito. Because our study indicated that polysaccharides obtained from the other Kampo prescriptions also modulated the function of immunocompetent cells of Peyer's patches, the further research works for details of the modulating action of Kampo medicines against local mucosal immune system through Peyer's patches is expected to lead us to clarification of the effectiveness of these herbal medicines.