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## Evaluation of immunopotentiating activities of combined extract of silkworm and food *in vitro* and *in vivo*

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We conducted experiments about immunopotentiating with powder of silkworm as food and immunity promoting materials (Angelica Gigas Root, Eucommiae cortex, turmeric, cinnamon, Alpinia oxyphylla Miquel, Achyranthes bidentata Blume, liriopie radix, Japanese lady bell, chives, ulmoides). In order to measure the effect of enhancing the immune function, a sample of silkworm powder and composite materials were orally treatment for 2 weeks and T lymphocyte proliferation and IL-2, IL-4, and IFN-gamma secreted by T lymphocyte activation, degree of nitric oxide uptake and total spleen, lymphocyte, and peritoneal macrophage counts were measured in macrophages. That is, *in vitro* cytotoxicity was observed when the cells were co-cultured in silkworm powder and immunoprecipitation candidate treatment for 24 hours. As a result among 10 kinds of immunopotentiating material, 100 ug/ml Eucommia ulmoides, 400 ug/ml, 200 ug/ml cinnamon, 100 ug/ml liriopie radix, 100 ug/ml chives, and Acanthopanax 100 ug/ml were chosen based on the results of spleen cell proliferation ability. The control group treated with Concanavalin A (Con-A) for activating splenocyte T cells and the control group treated with Con-A and candidate material samples were simultaneously treated to determine whether synergic effect of T cell proliferation occurred. As a result, group treated with each combination extract of Silkworm and Liriopie radix, Cinamori cortex and Eucommiae cortex showed a synergistic effect on splenic T cell proliferation compared to group only treated with Silkworm. In addition, the expression levels of cytokines were increased in the silkworm cinnamon, silkworm liriopie radix, and silkworm Eucommia ulmoides treated groups compared with silkworm alone group. In conclusion, it can be concluded that an equal amount of silkworms and mosquitoes can be obtained to enhance the immunity-enhancing effect.

### Biography

Seong-Soo Roh His major is traditional Korean medicine, and he has lectured and studied pharmacology and toxicity in Korean medicine at Daeguhaany university. In addition to natural drug research, he is also focusing on research on functional food ingredients and natural cosmetic materials. Now he is the editor-in-chief of The Korea Association of Herbology and serves as an academic member and editor of internationally renowned journals. He has built this model after years of experience in research, evaluation, teaching and administration both in hospital and education institutions.

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