E-E2-21

Effect of ultrasonification on immune activation activities of *Cichorium endivia* L.

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We used *Cichorium endivia* L. that was supported from Sorak traditional Food in In-je, Kangwon-do. Samples are extracted during 24 hours at 60℃and 100℃ using 10 times volume w/v of two solvent, ethanol and dilution water, each respectively. And another samples was run parallel with 60㎑ ultrasonification at extraction temperature during 30 minute. We experimented on immune activities with each samples, which extracted at different conditions. Experience had progressed in MTT assay using immune cell lines and NK cell lines with the samples. Immune activation activities of *Chicorium endivia* L. were investigated on these extracts associated with ultrasofication process at 60㎑ and showed the highest promotion of human B and T cell growth, about 10～20% compared to the control. The secretion of TNF-α and IL-60 was also enhanced by the addition (0.5 ㎎/㎖) of the extracts. NK cell activation was improved up to 1.37 times higher than the control, through adding extracts. It was also found that extracts from *Chicorium endivia* L. showed higher yield of nitric oxide production from macrophage than Lipopolysaccaharides (LPS). It can be concluded that, in general, the extracts treated with ultrasonification has higher immune activation activities than others, possibly by higher yielding immuno-modulatory than conventional extraction process. The optimum condition for the extraction of *Chicorium endivia* L. is ethanol extraction at 60～100℃ associated with ultrasonification.
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E-E2-22

Immune-modulatory Activities of *Rhodiola schalinensis* According to Extracts Processes

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Rhodiola schalinensis is a popular plant in traditional medical systems in Eastern Europe and Asia with a reputation for stimulating the nervous system, decreasing depression, enhancing work performance, eliminating fatigue, and preventing high altitude sickness. *Rhodiola sachlinensis* roots used in this experiment imports from Mt.Baekdu October, 2004 and used, that gather in *R. sachalinensis* Put with water to vinyl pack for high pressure extraction and sealed up well lest air should require. Executed high pressure extraction during time of 5, 15 minutes by 500 Mpa pressure high pressure extractor(Ilshin autoclave, Korea). After draw 2th repeat during 12 hours in 60℃ putting *R. sachalinensis* that high pressure extraction ends to extraction flask, executed ultrasonification extraction for 30 minutes, and used extract that is neted through this manufacturing in an experiment. Experience had progressed in SRB assay using cancer cell lines. Human B and T cells growth was compared with 0.5 (㎎/㎖) of supplementing four different samples, and estimated as 13.3×10^{4} cells/㎖, 14.5×10^{4} cells/㎖ in adding HPE15, respectively. Which were increased in over 20% higher than 14.5×10^{4} cells/㎖, 11.2×10^{4} cells/㎖ shown by WE. It is also very important to know the level of secreted cytokines associated with the cell growth, not only improving the cell growth. The amount of IL-6 released from the B・T cells growth was measured as 1.31×10^{-4} pg/cell and 1.39×10^{-4} pg/cell in adding 0.5 (㎎/㎖) of HPE15, respectively. These amounts were definitely higher than 1.05×10^{-4} pg/cell and 1.14×10^{-4} pg/cell for the case of the WE.
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