Analysis of Serum Proteome after Treatment of Cultivated Wild Ginseng Pharmacopuncture (CWGP), Which has Anti-Cancer and Immuno-Enhancing Effects in Experimental Study

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Abstract

Background: Cultivated Wild Ginseng Pharmacopuncture (CWGP) has anti-cancer effects for sarcoma-180 cancer-cell line in vitro. CWGP also has immuno-enhancing effects in proliferation assay of splenocyte and anti-metastatic effect for hepatic metastatic cancer using colon26-L5 carcinoma cells in mice.

Objective: The purpose was to observe the changes in the serum proteins after intravenous injection of CWGP.

Material and Methods: 20 healthy volunteers were involved in this trial. Blood serum was collected before and after the injection of CWGP (Total amount: 20㎖). Differences in the spots on the scanned image after carrying out 2-dimensional electrophoresis were located. Mass analysis and protein identification were conducted.

Results: 28 spots were identified before and after the treatment. In confirming manifestation degree, spots with more than two-times increase were 204, 1302, 2205, 3105, 7104, 8006, spots with more than one-time increase were 1101, 1505, 2013, 2403, 3009, 3010, 4002, 4009, 6704, 8101, and spots with decrease were 205, 801, 803, 3205, 5202, 6105, 6106, 7103, 9001, 9003. Immune protein CR2-C3d (204), proapolipoprotein (2013, 3010), apolipoprotein (7104), Ras-related protein Ral-A (4002), testis-specific protein Y (8006) and transferring (8101) were increased after injection of CWGP. Antitrypsin (803), vitamin D binding protein (DBP, 2403) and transthyretin (TTR, 3205) were decreased after injection of CWGP.

Conclusion: We could identify the proteins after treatment of CWGP by analyzing the serum proteome.

Key Words: CWGP (Cultivated wild ginseng), pharmacopuncture, serum proteins, 2-Dimensional electrophoresis