

## Studies on the Physico-Chemical and Biochemical Evaluation of Ginseng Spp., the Related Crude Drugs and the Ginseng Preparations

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The saponin patterns of Ginseng spp. and related crude drugs were investigated by quantitative thin-layer chromatography using equipped with a flame ionization detector (rod-TLC-FID) and a densitometer. Hemolytic and its protective activities of these saponins were also determined in

comparison with the saponin patterns. Then, we applied the Physico-chemical methods of evaluation to the constituents of saponin and essential oil in the Ginseng preparations. These physico-chemical and biochemical data are considered to be useful for the evaluation of these Ginsengs.