

Evaluation of Chemopreventive Activity of Medicinal Plant, Gromwell Seed against Tumor Promoting Stage

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Abstract : In our continuous search for anti-tumor promoting, chemopreventive active potency from natural source material, a kind of healthy tea, Gromwell seed (*Coix lachryma-jobi*) ext., and including compounds Monoolein and Trilinolein have been screened using the in vitro synergistic assay indicated by inhibitory effects on the induction of Epstein-Barr virus early antigen (EBV-EA) by TPA. In assay, Gromwell seed aqueous extract and hot aqueous extract exhibited the potential inhibitory effects on EBV-EA activation without strong cytotoxicity on Raji cells. In our experimental system, the inhibitory effects of both Gromwell extracts and compounds were greater than that of beta-carotene, which is known anti-tumor promoting agent and/or chemopreventive agent. These compounds were evaluated for their in vitro inhibitory effect on EBV-EA activation induced by TPA. The percentages of the inhibition of TPA-induced EBV-EA activation for these materials were 60% and 30% at concentration 100 µg. Based on the results obtained in vitro, we studied the inhibitory effect of compounds, in an in vivo two-stage carcinogenesis test of mouse skin papilloma using DMBA as an initiator and TPA as a potential promoter. The control animals showed a 100% incidence of papilloma at 20 weeks after DMBA-TPA tumor promotion, while treatment with compounds reduced the percentage of number of tumor to 60 % after 20 weeks. Results from in vitro and in vivo studies showing chemopreventive activity against TPA promoting stage and these data support the effective potency of carcinogenic stage in clinical evaluation of integrative oncology.

Keywords : gromwell seed, medicinal plant, chemoprevention, pharmaceutical medicine

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