Isolation and Characterization of Anti-melanoma (Skin Cancer) Compounds from Corchorus olitorius L

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Abstract: Corchorus olitorius is a leafy vegetable and an industrial crop. The herb has antioxidant, anti-inflammatory, and anti-cancer properties. To assay the pharmaceutical properties, aqueous extracts of leaves and seeds from C. olitorius were tested against drug resistant melanoma cell line. The test showed LC50 of the extract was 0.08µg/ml. Aqueous seed extract exhibited higher melanoma inhibiting activity than leaf extract. Dialysis of seed extract showed that the active compound is less than 12 KDa. The compound with <3 KDa MW separated by microconcentration of seed extract showed 70.5 % inhibition of melanoma cell growth. Among the two fractions obtained by Gel filtration with G10 column, the first fraction at 1:2000 dilutions exhibited 100% inhibition of melanoma growth. The compound with Rf value 0.86 (MA4) isolated by TLC separation showed about 98% cytotoxicity against melanoma at 1: 1000 dilutions. Furthermore, HPLC separation of MA4 compound with Superdex 75 column resulted in 4 compounds. Out of 4, one compound showed melanoma inhibition. The active compound is identified by reagent methods as Strophanthinid. Further toxicological and clinical studies will lead to the development of a potential drug to treat drug resistant melanoma.

Keywords: corchorus olitorius, melanoma, drug development, strophanthinid

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