

we suggest that jaceosidin and eupatilin have hair growth promotion effect *in vitro*.

Key Words : Jaceosidin, Eupatilin, Hair growth

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Effects of jaceosidin and eupatilin on hair growth *in vitro*

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Chrysanthemum zawadskii has been used for various medical purposes in East Asia for a long time, such as common cold, infectious disease and even androgenetic alopecia in traditional medicine. Jaceosidin and eupatilin, derived from *Chrysanthemum zawadskii* extract, are known to have anti-inflammatory effects through various mechanisms in previous literatures. However, there is no report about hair growth effect of jaceosidin and eupatilin. This study was performed to investigate the effects of jaceosidin and eupatilin on hair growth *in vitro*. Jaceosidin showed hair shaft elongation and prolongation of anagen phase in organ culture model of human scalp hair follicles. Eupatiline also showed hair shaft elongation, but no effect on hair cycle. Also, jaceosidin and eupatilin promoted proliferation of human dermal papilla (DP) cells, evaluated by MTT assay. The mRNA expression level of hair growth related factors were estimated by reverse transcription polymerase chain reaction (RT-PCR). As results, jaceosidin decreased expression of TGF- β and eupatilin up-regulated the expression of VEGF and Bcl2. In Tunel assay, both constituents treated groups showed less apoptotic cells than control groups. From these results,