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■ Subject Classification

- ■ Advances in skin/hair-care research/Active Ingredients
- ☐ Advances in Formulation Technology
- ☐ Advances in Evaluation techniques for efficacy and safety

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A stydy on the whitening substrate of natural products

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To investigate the potency of some natural extracts as skin whitening agents, in this study, 25 natural plants were prepared from natural sources including medicinal plants, such as *Angelica dahurica* using methylene dichloride, ethyl acetate, *n*-butyl alcohol, and water as the extraction and/or the partitioning solvents. These natural extracts were subsequently subjected to *in-vitro* DOPA auto-oxidation test in the media containing human or mushroom tyrosinase as the oxidation promoting enzymes. Most of the extracts showed relatively higher enzyme inhibition response in the media containing human tyrosinase than in the media containing mushroom tyrosinase, indicating that human tyrosinase is more readily inhibited in the presence of these biologically active natural materials than mushroom tyrosinase

The ethyl acetate extract from natural plants showed desirable results in various tests such as *in vitro* tyrosinbase inhibition, *in-vitro* DOPA auto-oxidation, *in vitro* melanin formation inhibition, tyrosinase inhibition in cells and melanin formation inhibition in cells.

The major ingredient in genkwa flos ethyl acetate extract was genkwanin, a flavonoid, and the main component of peach kenel ethyl acetate extract was amygdalin, a benzaldehyde cyanohydrin glucoside, and the mixture of benzaldehyde, and its oxidation product, benzoic acid and detoxic cyanohydrin was identified from the extract.

Among the 25 natural sources chosen in this study, the genkwa flos and the peach kenel were revealed to contain ingredients with highly superior skin whitening activity, and application safety to human skin.