Enhancement of Bio-activity of Polyphenols from Mulberry(Morus alba L.) leaves by enzyme reaction of β-glucosidase

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In general, flavonoid compounds are useful in the field of cosmetic chemistry due to several biological activities such as antioxidant, antityrosinase and antibacterial. Since they are formed of glycoside including sugar group in main molecular structure, the flavonoids extracted from mulberry leave are in difficult to adsorption into the skin and thus have some limitations to apply in the cosmetics.

In the present study the enzyme reaction is used to remove the sugar group from glycoside, thus resulting in the improvement of skin adsorption. As such, the rutin of glycoside extracted from mulberry leave is transformed into aglycone, quercetin. In experiment it is determined the optimum conditions for the enzyme reaction considering with measuring polyphenol contents, anti-oxidant effect and anti-tyrosinase effect. Under those conditions, 1.1684mg/g quercetin were obtained in treated extract of mulberry leave and is higher than the quercetin contents in extract of mulberry leave without enzyme reaction(0.0581mg/g). And also hydrophobicity in the extract of mulberry leave increased.