Development of cosmetic agent from *Allium hookeri*

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Three kinds of *Allium hookeri* including raw material, fermented extracts and cellulase treated fermentation extracts were tested to see possibility as functional cosmetic agent. Polyphenol and flavonoid concentration were measured, antioxidant, whitening, anti-wrinkle and antimicrobial activity were tested as cosmetic assays. Ethanol extract of *Allium hookeri* root contained 305μg/ml polyphenol. Antioxidant effect of *Allium hookeri* was lower. Ethanol extract of *Allium hookeri* root showed 70% tyrosinase inhibition at 500μg/ml. Fermentation generally increased elastase inhibition among *Allium hookeri* extracts. Fermented *Allium hookeri* dried root by *Lactobacillus plantarum*(FDRLP) and cellulase treated fermented *Allium hookeri* dried root by *Lactobacillus plantarum*(CFDRLP) indicated strong anti-wrinkle effect. CFDRLP indicated significant antimicrobial activity for *E.coli* and *staphylococcus aureus*. Stability test of skin including 0.5% *Allium hookeri* extracted indicated stable formulation for 28 days. In conclusion, fermented Allium hookeri extracts indicated strong anti-wrinkle effect with significant antimicrobial activity. It showed good possibility for functional cosmetic agent.