

## Experimental Studies on the Skin Barrier Improvement and Anti-inflammatory Activity based on a Bibliometric Network Map

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Atopic dermatitis is a chronic inflammatory skin diseases caused by skin barrier dysfunction. *Allium victoralis* var. *Platyphyllum* (AVP) is a perennial plant used as vegetable and herbal medicine. The purpose of this study was to suggest that AVP is a new cosmetic material by examining the effects of AVP on the skin barrier and inflammatory response. A bibliometric network analysis was performed through keyword co-occurrence analysis by extracting author keyword from 69 articles retrieved from SCOPUS. We noted the anti-inflammatory activity shown by the results of clustering and mapping from network visualization analysis using VOSviewer software tool. HPLC-UV analysis showed that AVP contains  $0.12 \pm 0.02$  mg/g of chlorogenic acid and  $0.10 \pm 0.01$  mg/g of gallic acid. AVP at 100  $\mu$ g/mL was shown to increase the mRNA levels of filaggrin and involucrin related to skin barrier function by 1.50-fold and 1.43-fold, respectively. In the scratch assay, AVP at concentrations of 100  $\mu$ g/mL and 200  $\mu$ g/mL significantly increased the cell migration rate and narrowed the scratch area. In addition, AVP suppressed the increase of inflammation-related factors COX-2 and NO and decreased the release of  $\beta$ -hexosaminidase. This study suggests that AVP can be developed as a functional cosmetic material for atopy management through skin barrier protection effects, anti-inflammatory and anti-itch effects.

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