

ABSTRACT

Skin barrier disorder is a condition whereby the skin is incapable of preventing the penetration of exogenous stimuli. As a result, inflammation are also elevated in an effort to eliminate these materials, resulting in increased sensitivity towards exogenous material. Treating this dysfunction can be achieved using topical application of prescriptions such as moisturizers that can tone down the inflammation. However, the moisturizer must first be evaluated for its irritation potential. Therefore, the aim of this study is to evaluate the inflammatory potential of a topical moisturizer by measuring the gene expression of pro-inflammatory mediators such as *IL1A*, *IL1B*, *CXCL8*, and *CALCB* using RT-qPCR. An MTS assay was performed to determine a non-cytotoxic concentration of the moisturizer for the gene expression analysis, which were 2.32 mg/mL, 2.11 mg/mL, and 0.21 mg/mL respectively. The gene expression analysis revealed that neither the product, base, nor API exhibited a statistically significant increase in *IL1A*, *IL1B*, *CXCL8*, and *CALCB* expression. However, they were able to decrease the expression of *CXCL8* and was statistically significant for the product and the API. For the *CALCB* expression, all treatment groups exhibited a statistically significant decrease in expression, hinting to a possible anti-inflammatory effect of the moisturizer. Taken together, the moisturizer demonstrated no significant inflammatory response at a sub-recommended concentration but exhibited an anti-inflammatory capability in the form of *CXCL8* and *CALCB* gene expression downregulation.

Keywords: Skin Barrier Disorder, Inflammation, Irritation test, Moisturizer, Gene Expression.