ABSTRACT

Centella asiatica also referred to as Gotu Kola is a plant that has been utilized for hundreds of years in both traditional and modern medicine. In skin care products, it has been claimed that *Centella asiatica* leaf extract stimulates collagen production, reorganizes the damaged tissue, restores tissue firmness and skin elasticity, and improves the appearance of the skin. Triterpenoid compounds such as the two glycosides (asiaticoside and madecassoside) and their corresponding aglycones are considered to constitute the active compounds in the leaves. Furthermore, the triterpenoid components were able to promote the formation of glycosaminoglycan, especially hyaluronic acid. In this study, the effect *Centella asiatica* extract will be evaluated for their ability on hyaluronic acid expression and wound healing properties in the HaCat cell line.

The cytotoxicity test was recommended at the concentration 20-40 µg/ml that was not toxic in the cell line and was applied to wound healing assay. On the other hand, the cells were covered up by the wound site at 72 h. In addition, it has been found that C. *asiatica* extracts have an impact on cellular growth and proliferation in damaged tissues. Furthermore, the gene expression analysis showed that non-polar extract has the highest expression of HAS2 gene and HAS2 gene elevated upon cell treatment and not significant.

(Keywords: HAS2 gene, C.*asiatica,* HaCaT, Triterpenoid)