

## **ABSTRACT**

Skin is the largest organ in the body and is continuously exposed to various chemicals, radiation, and pollutant. Therefore, along with the increase in age, physical signs of skin aging become apparent. Many individuals reach for various anti-aging cosmetics to restore the normal appearance of the skin, as beautiful skin confers the perception of a healthy individual and increases the social value of an individual. One mechanism by which anti-aging cosmetics restore normal skin appearance is to restore ECM of the dermis layer of skin, in particular for collagen I, collagen III, elastin, and hyaluronic acid, since these components of the ECM are the ones that are involved in the most in anti-aging mechanism, and thus becomes the main focus of this study. This study investigates the anti-aging properties of cosmetic toner products by observing cell viability level using MTS assay upon 72 hr treatment of the toner product, toner base, and toner API on a primary HDF cells with various concentrations to determine the safe working concentration. This was followed by analyzing collagen I, collagen III, elastin, and hyaluronic acid expression using ELISA in primary HDF cells upon 72 hr treatment with the working concentration of cosmetic products. Treatment using cosmetic products with concentrations of 0.25X, 0.5X, 1X, 2X, and 4X resulted in being non-toxic toward the primary HDF cells, and 1X concentration was chosen. ELISA result showed significantly high expression of collagen 3 expressions upon 72 hr treatment of toner base product, while collagen 1 and hyaluronic acid expression did not increase. Elastin expression is negative, indicating that the elastin concentration is below the detection limit. Factors including the product's component and the cell's age might influence the result.