

Abstract

Skin health is a paramount concern, which affects individuals of all ages, impacting not only physical health but also psychological well-being. Acne vulgaris is a chronic skin condition characterized by diverse lesions, such as open and closed comedones, pustules, papules, and cysts, which vary with the stage of progression. Inadequate treatment or severe cases can result in atrophic scar formation. Atrophic scars can be challenging to remove completely, and the degree of success depends on various factors. Green tea, specifically known as *Camellia sinensis*, offers an abundant quantity of beneficial properties, one of them being its polyphenolic components, particularly catechins. These compounds enhance collagen synthesis, which is essentially the early stages of wound healing. Allantoin is widely used in cosmetics and pharmaceuticals for its therapeutic benefits and it helps the transition from wound inflammation to proliferation. It offers antioxidant, anti-inflammatory, antimicrobial properties, and facilitates the shedding of dead skin cells, aiding wound healing. The evaluation of the experiment will be done through scratch assays in which it cultivates a single layer of cells in a multiwell assay plate until it reaches full coverage, generating a deliberate 'wound' or gap within this cell layer where cells are able to migrate, and then overseeing the process of cells repopulating the scratched area to measure and assess cell migration. Thus, this research aims to formulate and evaluate a skincare solution that combines the wound-healing properties of green tea extract with the known benefits of allantoin in an acne scar serum.

Keywords: acne vulgaris, green tea extract, allantoin, wound healing, acne scar serum