**Biotechnological Application of Natural Products for the Control of Cell Senescence and Skin Cancer**

**Abstract**

Aging is a multifaceted process inherent to all living organisms, driven by numerous internal and external factors. Biological aging is marked by the progressive decline of essential physiological processes, leading to tissue integrity loss and cellular function deterioration. This review explores the mechanisms underlying skin aging, emphasizing the role of cellular senescence and its impact on dermal health, with a focus on the senescence-associated secretory phenotype (SASP) and its contribution to systemic inflammation, cancer development and age-related diseases. The effects of UV induced senescence in carcinogenesis is also addressed, relating the oxidative damage caused by prolonged exposure to ultraviolet radiation with the premature acquisition of senescent-like characteristics in cells that ultimately lead to photocarcinogenesis. Furthermore, this review highlights the potential of natural senolytic compounds as a basis for the development of novel treatment options for age related diseases in the skin. *In vitro* research has shown promising results for some natural compounds applied to the treatment of skin diseases. However, many aspects of their use *in vivo* are still unknown. Future research focused on describing the natural compound’s interactions on an organism are still needed if these products are ever to be used for the research of new senolytic formulations.

**Keywords:**  Skin cancer, cell senescence, natural products, senolytics, photocarcinogenesis