

## **Abstract**

Skin is a natural and effective barrier of the body against the adverse effects of the external environment. Which, however, requires its constant regeneration and, in the event of damage, repair. Stem cells stored in the epidermis, hair follicles and dermis contribute to this. As with other stem cells, these are characterized by so-called stemness, ie the ability to self-renew and differentiate into other cell types, thus providing a source of cells for skin renewal. During aging, due to internal and external factors (mainly due to oxidative stress and DNA damage), the integrity and functionality of the skin barrier are lost. This process is related, among other things, to a reduction in the number and function of skin stem cells. Today several therapeutic approaches are being developed that use stem cells, but at the same time, it is clear that their origin also significantly affects their use. Therefore is necessary to have a good understanding of the specific properties of the function of skin stem cells to modulate the properties of the skin.

This work aims to create a review of scientific literature, which covers the topic of skin stem cells, their role in the processes of regeneration and repair and their role in aging. The work will also address the issue of the skin or other types of stem cells for the regulation or improvement of pathophysiological conditions of the skin, including manifestations of (photo-) aging, wound healing, immune signaling, regulation of hair growth, melanogenesis or carcinogenesis.