

**THERAPEUTIC AND COSMETIC PRODUCT FOR SKIN PROTECTION
AGAINST SUNBURN**

Malovana H. I., Myrhorodska-Terentieva V. D., Avdienko T. M., Nikolenko M. V.
Ukrainian State University of Chemical Technology, Dnipro, Ukraine
anna.mal1412@gmail.com

The skin is a unique structure of the human body and is the main barrier between the environment, its unfavorable factors and the internal space. Given the function assigned to it, the skin has powerful protective mechanisms, preventing the negative impact of various factors on the delicate structure of internal organs. For the full implementation of the protective function, the skin must remain intact and maintain the homeostasis of its own tissues at a high level. The condition of the skin is one of the integrative indicators of the well-being of the entire organism and is often the first to signal pathological processes taking place. The skin can perform its functions only in a healthy and intact state. That is why it is so important to carry out constant care of it and take the necessary measures to restore its integrity and maintain a normal state.

Ultraviolet rays contribute to the destruction of the cells that make up the outer layers of the skin and cause damage to the small blood capillaries that are located directly under these layers. The skin becomes red, hot and dry to the touch. There is soreness, a burning sensation, the damaged area gradually swells, that is, all those signs appear, which we call the concept of sunburn.

A sunburn is a burn caused by excessive exposure to solar (or artificial) ultraviolet (UV) radiation, the severity of which depends on individual skin sensitivity.

Having noticed such a metamorphosis, it is necessary to begin rehabilitation immediately, because burns are not harmless wounds. They can prematurely age the skin by damaging blood vessels located close to the surface, destruction of connective tissue in the inner layers and elastic fibers of the skin, as well as allergies to sunlight. Moreover, excessive love of the sun can even lead to oncological diseases (skin cancer).

The objective of the work is to expand the range of medicinal and cosmetic products to protect the skin from sunburn by creating a new medicinal and cosmetic product with increased biological activity and bactericidal effect.

The ingredients in the formulation have different functional properties: D-panthenol (moisturizing effect, cell regeneration); allantoin (healing, protective and soothing effect); colloidal nanosilver (antibacterial, regenerating and anti-inflammatory effect); bisabolol (antibacterial and antifungal properties); supercritical extracts of spruce needles, medical calendula, buckthorn, medical rosemary, medical sage, wheat germ, medical chamomile (BAR), and anhydrous lanolin (nourishing fatty base, softening effect); triethanolamine (soft base, stabilizer); ethyl alcohol (solvent); synthetic fatty primary fractions C16-C21, stearic acid (structuring agent, emulsifying agent); distilled glycerin (moisturizer).

The product has a pleasant light consistency, made in the form of an aerosol cream. This is one of the promising forms for the local treatment of burns, as it allows small amounts of the drug to cover large surface areas. Moreover, the drug is applied to the affected area painlessly and does not injure the skin, and also creates a barrier to infection and ensures heat exchange between tissues and the environment, preventing the «greenhouse effect».

The developed formulation of a therapeutic and cosmetic product for protecting the skin from sunburn has an anti-burn therapeutic and cosmetic effect due to a unique selection of biologically active ingredients and their deep penetration into the skin, ensuring improvement of peripheral blood circulation and affecting metabolic processes.