

Novel Targeted Nitroxide Cream to Prevent or Reverse Skin Damage

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Technology description

Summary

Investigators at the University of Pittsburgh have developed a novel cream which uses targeted nitroxides to neutralize the harmful free radicals produced by UVA and UVB radiation to decrease the signs of aging of the skin.

Description

Investigators have developed a novel Gramicidin S (GS)-derived nitroxide, known as JP4-039. This agent has been formulated into a topical cream and when applied to the skin, acts as a potent antioxidant by delivering nitroxide specifically to the mitochondria. Nitroxide protects the skin by neutralizing harmful free radicals that are produced by UVA and UVB radiation, which decreases the signs of aging. The topical formulation can also be used to deliver chemical and physical sunscreens along with JP4-039. The invention provides claims for compound compositions, formulations, and methods of use.

Background

Sunlight has a profound effect on the skin causing premature skin aging, skin cancer, and a host of other skin changes. In fact 90% of the symptoms of premature skin aging can be attributed to exposure to ultraviolet light, UVA or UVB, from sunlight. It is now known that many skin changes that were commonly believed to be due to aging, such as easy bruising, are actually a result of prolonged exposure to UV radiation. Oxidative damage is a critical final common pathway in skin damage resulting from a variety of radiation (including UVA and UVB) and toxin exposures that can result in a broad range of unwanted events including unwanted cosmetic effects (skin aging and wrinkling).

Institution

[University of Pittsburgh](#)

联系我们



叶先生

电话 : 021-65679356

手机 : 13414935137

邮箱 : yeyingsheng@zf-ym.com