URVentures

Modulating Melanin Expression

Compounds which can induce melanin expression to aid in certain clinical indications or for cosmetic purposes.

Problem Solved by This Technology

Melanin is important for disease prevention, because it absorbs ultraviolet light in the UVB and UVA spectrum. This protects keratinocytes from the mutagenic effects of sunlight. In addition, melanin has a social function, as it determines skin and hair color. Agents that increase melanin synthesis are of interest, because of their potential use as "natural sunscreens" that stimulate the skin's resident melanocytes to produce and transfer more melanin to epidermal keratinocytes, thus potentially decreasing the incidence of skin cancer.

There is a significant need to identify new compounds with improved ability to induce melanin production and transfer.

Applications

Benjamin Miller, Ph.D. and his colleagues at the University of Rochester have developed compounds which induce melanin expression in melanocytes, increase melanin content in keratinocytes, and increase skin pigmentation within a treated area of the skin.

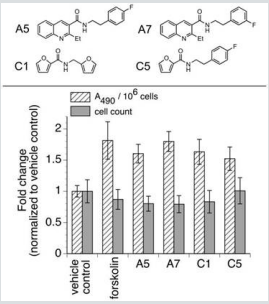
The ability to modulate melanin expression is important in certain clinical conditions such as insufficient skin pigmentation, or for cosmetic purposes such as achieving a "sunless tan" or enhancing tanning with limited exposure to sunlight or ultraviolet light. These compounds actually produce additional melanin in the skin, and thus protect the skin from ultraviolet radiation and may decrease the risk of skin cancer.

Publication

McNaughton BR et al. A potent activator of melanogenesis identified from small-molecule screening. ChemMedChem. 2009 Oct;4(10):1583-9. PMID:19670207.

URV Reference Number

6-1539



Fold change in melanin and viable cell count in melan-a cells 72 hours after treatment with vehicle control (0.1% DMSO), 2.5 μM forskolin, or 2.5 μM of library member.

Inventors

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Intellectual Property Status

U.S. Patent 9,162,984, "Small Molecule Modulators of Melanin Expression" issued 20 October 2015.

Technology Status

Proof of Concept has been validated *in-vitro*.

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