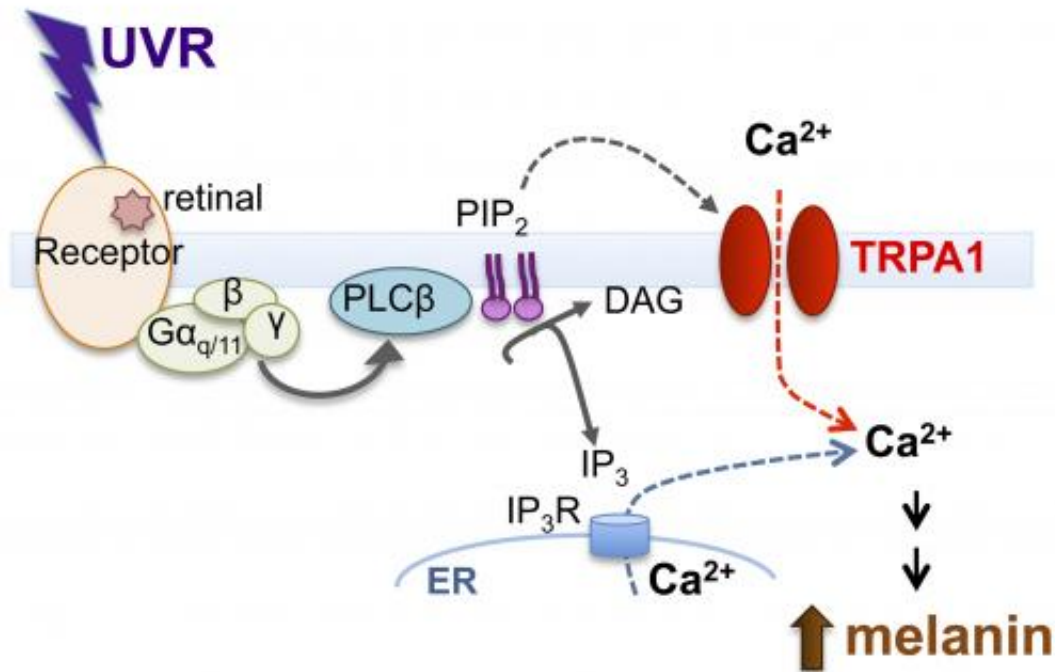


Protecting the skin from sun exposure

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This is a proposed model for the molecular pathway that allows human skin to detect and respond to the UV radiation in sunlight. Understanding this pathway is critical to developing better methods of skin protection. Credit: Bellono et al., 2014

The ultraviolet radiation (UVR) present in sunlight is the most common environmental carcinogen, and long-term exposure to UVR can lead to skin cancer and premature aging of the skin. To develop better methods of protection from the sun, we need to understand how the human skin detects and responds to UVR. A study in *The Journal of General*

Physiology provides new insight into the molecular pathway underlying this process.

Skin cells called melanocytes respond to UVR by increasing the skin's pigmentation, a protective mechanism otherwise known as tanning. But the exact details of the early stages of the response to UVR are poorly understood. Now, researchers from Brown University have identified key elements of the UVR-activated pathway in skin.

The researchers identified a specific protein involved in mediating the skin's response to UVR as well as some downstream elements in the pathway. Intriguingly, their data suggest that, in melanocytes responding to UVR, the signal transduction cascade (the process by which an external stimulus leads to a response inside a cell) resembles a light-activated pathway in the eye.

More research is needed to identify other key players in this newly characterized UVR response pathway. As these remaining gaps are filled, researchers can use the information to develop better methods for protecting the human skin from the damaging effects of sun exposure.

More information: Bellono, N.W., et al. 2014. *J. Gen. Physiol.* [DOI: 10.1085/jgp.201311094](https://doi.org/10.1085/jgp.201311094)

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