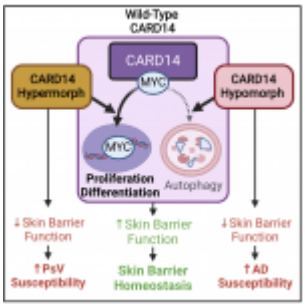
A New Pathway to Skin Health



Our skin, the body's largest organ, acts as a formidable shield against infections and other health threats. Decades of research have revealed that skin barrier dysfunction can lead to a variety of diseases. Researchers have uncovered a novel molecular signalling pathway that plays a critical role in maintaining skin barrier integrity (Figure 1).

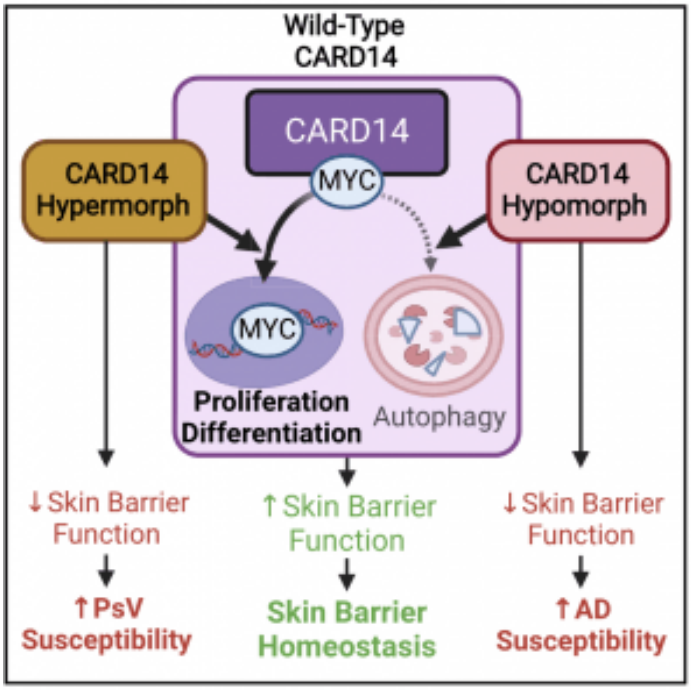


Figure 1: Graphical abstract.

This study could pave the way for innovative treatments for inflammatory skin diseases like atopic dermatitis (eczema) and psoriasis. The research team identified the protein CARD14 as a key player in skin barrier health. When CARD14 functions correctly, it helps maintain a healthy skin barrier. However, when CARD14 malfunctions, it can contribute to skin diseases.

The researchers found that CARD14 directly interacts with MYC, a protein involved in regulating cell growth. This interaction is crucial for a healthy skin barrier and protects against skin diseases. Additionally, given MYC's association with cancer, the study suggests that dysfunctional CARD14-MYC signalling may contribute to certain types of cancer.

Previous research had focused on the CARD14-NFκB signalling pathway, which is linked to skin diseases. However, this new study highlights the importance of the CARD14-MYC pathway in skin barrier health. The researchers discovered that CARD14 regulates skin barrier function through two mechanisms: stimulating NFκB to establish an antimicrobial barrier and stimulating MYC to help build a physical barrier.

Journal article: DeVore, S. B., *et al.* 2024. Regulation of MYC by CARD14 in human epithelium is a determinant of epidermal homeostasis and disease. *Cell Reports*.

Summary by Stefan Botha