

New findings on the formation of body pigment

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(PhysOrg.com) -- The skin's pigment cells can be formed from completely different cells than has hitherto been thought, a new study from the Swedish medical university Karolinska Institutet shows. The results, which are published in the journal Cell, also mean the discovery of a new kind of stem cell.

The body's pigment gives essential protection against [UV radiation](#). It is made up of a substance called [melanin](#), which is produced by pigment cells in the skin called melanocytes. According to the established theory of body pigmentation, these melanocytes bud off from the spinal cord at an early foetal stage and then migrate to the skin where they remain for the rest of their lives.

Scientists at Karolinska Institutet in Stockholm have now shown that most melanocytes actually appear later on in foetal development from an immature cell type that exists in the skin's [nerve fibres](#). These cells, called Schwann cell precursors (SCPs), can also be found in adults. In addition to this, the scientists have demonstrated how neuronal damage in adults can excite the maturation of melanocytes to form hyperpigmentation around the affected nerves.

"Our findings can provide new knowledge of how changes in skin pigmentation occur, not least of the links that have been observed between neurological disease and changes in pigmentation," says Professor Patrik Ernfors, who led the study.

Their results also shed new light on SCP cells, which were previously seen as an immature form of supportive cells the [nervous system](#). The researchers describe how a change in cell signalling can make the SCP cells in the skin develop into pigment cells instead, and argue that SCP cells are really a kind of stem cell.

"This can help science to understand the development of diseases such as melanoma," says Professor Ernfors. "Weve always believed that it develops from melanocytes, but maybe it actually originates in the SCP cells."

More information: Schwann Cell Precursors from Nerve Innervation is a Cellular Origin of [Melanocytes](#) in Skin, *Cell*, 16 October 2009

Provided by Karolinska Institutet ([news](#) : [web](#))

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