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〈シンポジウム I〉

『皮膚の機能を知る～皮膚科学研究の最新情報～』

色素細胞の発生と内耳における機能発現

山 本 博 章

A Role for Inner Ear Melanocytes in Anti-stress Responses

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Abstract

Mammalian melanin-producing pigment cells, i.e. the retinal pigment epithelium（RPE）and the melanocytes, are derived from two distinct cell lineages. The RPE is derived from the dorsal portion of the optic vesicle that outgrows from the prosencephalic neuroepithelium, and plays indispensable roles for eyesight. On the other hand, the melanocytes are derived from the neural crest, a vertebrate-specific embryonic cell population. Melanocytes migrate to a variety of tissues and organs. In the skin, they play an important role as a sunscreen by transferring melanin pigments to surrounding keratinocytes that predominate in the epidermis. Melanocytes may also play other specific role(s) that may not necessarily depend on their characteristic signature, the production of an energy transducer, melanin pigment, depending on the tissues and organs where they settle. For example, melanocytes in the inner ear are indispensable for hearing ability, but melanins are known not to be essential for that ability. Recently, we found that cochlear melanocytes strongly express Gsta4, well known as one of the detoxifying enzymes, suggesting the involvement of inner ear melanocytes in an anti-oxidant defense system.

Key words: melanin, melanocyte, retinal pigment epithelium, developmental lineage, visual and auditory senses.