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〈シンポジウム II〉

『皮膚感覚が心を育む』

第三の脳―いのちと世界の境界としての表皮

傳田光洋

The Third Brain: Epidermis as a Boundary between Life and World

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Abstract

Recently, a range of sensors that respond to physical or chemical environmental factors has been identified in the peripheral nervous system. In particular, TRP receptors, which respond to mechanical stress, osmotic pressure, temperature and chemical stimuli, are expressed in epidermal keratinocytes. Neurotransmitters and their receptors, which play a crucial role in information processing in the central nervous system, have also been found in keratinocytes. These results suggest that epidermal keratinocytes are equipped with similar sensing and information processing systems to those in the peripheral and central nervous systems. It had been long considered that only nerve C-terminals in the epidermis play a role in skin surface perception. However, we now propose a novel concept of the skin sensory system, i.e., first, keratinocytes recognize various environmental factors, and then the information is transferred to peripheral and whole body systems.

Key words: keratinocyte, sensor, receptor, TRP, channel.