

〈一般論文〉

炎症性サイトカイン Interleukin-1 Alpha はリンパ管形成を抑制する

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Proinflammatory Cytokine Interleukin-1 Alpha Inhibits Lymphatic Vessel Formation

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Abstract

Lymphatic vessels maintain internal tissue fluid circulation by recycling tissue fluid and protein leaked from a blood vessel back to a blood vessel again. Recently, it has been reported that the number of lymphatic vessels decreases in photoaging skin, but the mechanism has not become so clear. Therefore, we examined effects of interleukin-1 alpha (IL-1 α), one of proinflammatory cytokines secreted from epidermal keratinocyte by ultraviolet rays, on the lymphatic vessel formation to clarify the mechanism of lymphatic vessel change induced by photoaging. As a result, proliferation, migration and tube formation of lymphatic endothelial cells were inhibited by IL-1 α . Furthermore, IL-1 α suppressed the expression of VEGFR3, a receptor playing an important role in the lymphatic vessel formation signal transduction, at mRNA and protein level. From these results, it is considered that normal lymphatic vessel formation may be inhibited in photoaging skin following suppression of proliferation, migration and tube formation of lymphatic endothelial cells by the proinflammatory cytokine-induced decrease of VEGFR3. The decrease of lymphatic vessels by inhibition of their formation may induce the depression of tissue fluid circulation, resulting in the acceleration of skin aging.

Key words: lymphatic vessel, lymphatic endothelial cells, VEGFR3, interleukin-1 alpha.