

〈一般論文〉

皮膚培養細胞を用いたアンジオポエチン 1 遺伝子
発現日内変動に関する検討

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**Investigation of the Daily Fluctuation of Angiopoietin
1 Gene Expression Using Cultured Skin Cells**

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Abstract

Daily fluctuations of many vascular functions are reported, and therapeutic strategy which are based on the daily fluctuation pattern are proposed. In this study, we focused on the daily fluctuation of the skin vascular function relating genes using human epidermal keratinocytes (HEK) and human dermal fibroblasts (HDF) synchronized by dexamethasone treatment. Fluctuation pattern was examined by comparing the expression time course of *PER1* and *ARNTL* those are the core genes of clock feedback loop and circadian rhythm marker genes. Extensive analysis using DNA micro array predicted the daily fluctuation of *ANGPT1*, *VEGFA*, and *VEGFC* gene expression level. *ANGPT1*; angiogenic factor gene expression time course of four-h periodicity, for two days in HDF, was similar to the *PER1* fluctuation pattern. We also evaluated the effects of cosmetic substances on the expression level of *ANGPT1*. *Nuphar japonicum* extract showed positive effects on the *ANGPT1* expression. An accelerator of *ANGPT1* expression, *Nuphar japonicum* extract, is expected to benefit for improve the skin vascular function at the optimum timing as *ANGPT1* high expression level in a day.

Key words: dermal fibroblast, epidermal keratinocyte, DNA micro array, *ANGPT1*.