Expression of Chondroadherin (CHAD) in Healthy Human Skin and in Psoriatic Skin

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Autumn 2013
Scientific project, 15ECTS
Biomedical Analysis Programme 180 ECTS
Uttryck av Chondroadherin (CHAD) i friska människors hud och i psoriatiska hud

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Date of pass: 2013 – 06 – 20
Abstract

Psoriasis is an inflammatory skin disease that has an overall prevalence of 2-3% of the world's population. Hyperproliferation and impaired differentiation of epidermal keratinocytes leads to the outbreak of the disease on skin. Narrowband –UVB phototherapy is one the most effective treatment for psoriasis. Gene expression profiling from RNA of psoriatic epidermis under phototherapy was performed previously and results showed that chondroadherin (CHAD) is the most significantly downregulated gene in psoriasis compared to healthy controls.

Expression of CHAD, a cartilage matrix protein, has not been shown in human skin previously. Therefore, the aim of the present study was to evaluate the expression and localization of CHAD in normal human skin and to validate it's down regulation in psoriatic epidermis.

With the Digital Droplets PCR (ddPCR) method and immunohistochemical staining, detection of CHAD was expressed in normal human epidermis but is not detectable in dermis. Furthermore, in accordance with previous array data, ddPCR results showed that CHAD RNA level is significantly downregulated in psoriasis. The study also confirmed that UV treatment for psoriasis did not significantly affect expression of CHAD though clinical improvement was seen in most patients. In conclusion, the results from this study indicated that downregulation of CHAD might play a causal role in pathogenesis and maintenance for psoriasis.

Keywords

psoriasis, epidermis, keratinocytes, chondroadherin, NB-UVB phototherapy, ddPCR, immunohistochemistry