

Chinese Journal of Dermatology 2009, **42**(5) 327-329 DOI: **ISSN: 0412**  
- 4030 **CN: 32-1138/R**

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## Expert Forum

### A study on the importance of aquaporins for human Skin

#### Abstract:

**Objective** To study the expression and function of aquaporins (AQPs) in human skin.  
**Methods** Tissue specimens were obtained from the thigh of 30 healthy Caucassian women aged from 30 to 40 years, the face of Japanese women aged from 20 to 80 years, and from the inner and outer sides of forearm of 10 healthy Asian women aged from 21 to 60 years. Immunohistochemistry was applied to examine the expressions of AQP3, Claudin-1 and CD44 in the specimens. The relationship between skin aging and expressions of AQP3 and Claudin-1 as well as between AQP3 expression and sun exposure was evaluated with Statgraphics software. **Results** In human epidermis, AQP3 was observed from the basal layer to granular layer, but not in the lower stratum corneum. The expressions of AQP3 and Claudin-1 were negatively correlated with the expression of CD44, a receptor for hyaluronic acid. Indirect immuno- fluorescence study on healthy females aged from 20 to 80 years revealed that the expression of AQP3 decreased in aged and chronically sun-exposed skin. **Conclusions** The deficiency of water providing system in human skin may be related to age. Moreover, AQPs play an important role in maintaining normal physiological and functional properties of skin.

#### Keywords:

**Received** 2008-12-08 **Revised** 2009-01-22 **Online:** 2009-05-13

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