CLCA2 is Overexpressed in Psoriatic but Not In Atopic Dermatitis Mouse Skin Models



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Introduction

CLCA2 (chloride channel regulator, calcium-activated)

- Highly expressed by keratinocytes
- Thought to be required for epithelial differentiation
- Known terminal epithelial differentiation proteins like filaggrin are differentially regulated in skin diseases including psoriasis and atopic dermatitis
- Materials & Methods
- Induction of psoriasis-like dermatitis in BALB/c mice via imiquimod
- Induction of atopic dermatitis in SKH-1 mice via oxazolone
- Animal study approved by the State Office of Health and Social Affairs, Berlin, Germany (LaGeSo; G 0126/13)
- Pathohistological characterization of skin lesions in both mouse models

Aim: Expression pattern analyses of CLCA2 in murine models of psoriasis and atopic dermatitis compared to filaggrin

Expression analyses of CLCA2 and filaggrin via RT-qPCR and immunohistochemistry in healthy and dermatitis models



Fig. 5: The CLCA2 protein was strongly expressed in more Fig. 6: The CLCA2 protein was found in more epidermal layers in epidermal layers in psoriasis-like dermatitis (B) compared to atopic dermatitis (B) compared to healthy skin (A), however, with a healthy skin (A). Filaggrin was virtually identical expressed as less staining intensity. Filaggrin showed a virtually identical expression pattern as CLCA2 in healthy (C) and diseased skin (D). CLCA2 in healthy (C) and psoriatic skin (D). DAB immunohistochemistry, hemalaun counterstain. DAB immunohistochemistry, hemalaun counterstain.

Conclusions

- CLCA2 is overexpressed only in the psoriatic skin model, but not in atopic dermatitis.
- The well-known terminal epithelial differentiation protein filaggrin shows a virtually identical disease associated expression pattern.
- CLCA2 and filaggrin are expressed in the same cell type independent of the skin disease.
- The results support the notion that CLCA2 may act as a terminal differentiation protein.

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