CD26/dipeptidyl-peptidase IV in psoriatic skin: upregulation and topographical changes

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Conflicts of interest
None declared.

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ABSTRACT

Background Psoriasis is known to affect 2–3% of the population and can be considered an organ-specific autoimmune disease. CD26/dipeptidyl-peptidase IV (DPP-IV) is a membrane-bound protease with diverse properties. In theory, the expression of CD26/DPP-IV has common grounds with three principal key players of the psoriatic pathogenesis: keratinocytes, T cells and cytokines.

Objectives To assess CD26/DPP-IV expression in psoriasis in order to expand on the search for complementary biomarkers related to inflammation and proliferation in psoriasis.

Methods The pattern of expression of CD26/DPP-IV was investigated on the mRNA-, protein- and enzyme-functionality level using immunohistochemical, immunofluorescent and enzyme activity labelling techniques.

Results An 11-fold significant increase of CD26/DPP-IV on the mRNA level was demonstrated in psoriatic epidermal sheets compared with normal skin. Immunohistochemistry on psoriatic sections showed a distinct patchy honeycomb-like CD26/DPP-IV staining in the suprapapillary layers. Moreover, a clearly distinguishable column-like staining pattern throughout the suprabasal compartment along the rete ridges was seen, whereas in normal skin these patterns were absent. Strikingly, CD26/DPP-IV enzyme activity correlated with this immunohistochemical reactivity pattern for the CD26/DPP-IV protein. The T-cell bound expression of CD26/DPP-IV in psoriatic skin was explicitly present, albeit in small quantities.

Conclusions Our data provide clear evidence for a versatile upregulation of CD26/DPP-IV expression in psoriatic (epi)dermis. Although the exact functional contribution remains speculative, the topographical distribution of this complex multifunctional protein suggests a suitable role as a complementary biomarker in psoriasis.

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