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RESEARCH AREA

Psoriasis is a common, chronic inflammatory, immune-mediated skin disease characterized by red, scaly patches. The psoriatic involved skin is mainly characterized by hyperproliferation of epidermal keratinocytes and infiltration of immune cells. Although nowadays the number of therapeutic options is increasing, however, there is currently no solution to prevent the recurrence of symptoms after the suspension of the therapy.

The disease is characterized by the fact that the involved skin areas are well separated from the clinically uninvolved, healthy-looking skin areas. Furthermore, even a number of cellular and extracellular abnormalities are present in the uninvolved skin areas. However, the main characteristic mechanisms of involved skin such as hyperproliferation of epidermal keratinocytes and infiltration of immune cells, are not observed in uninvolved skin. Our previous studies suggest that abnormalities of the uninvolved skin on one hand can predispose to the development of symptoms, on the one hand, alterations of the uninvolved skin can be protective factors and mechanisms as well. These alterations can contribute to the special balanced, so-called pre-psoriatic condition. Studying these protective mechanisms is a novel approach in psoriasis research. Recurrence of the psoriatic lesions may potentially be prevented by a better understanding of the changes that can maintain the uninvolved state.

TECHNIQUES AVAILABLE IN THE LAB

Processing of punch biopsies from healthy individuals and from involved and uninvolved skin areas of psoriatic patients: *ex vivo* tissue culture, isolation and culture of primary cells (keratinocytes, fibroblasts), cell biological examinations (e.g. BrdU cell proliferation assay, MTT assay, in vitro wound healing assay). Furthermore, preparation and processing of tissue sections, acquisition of immunofluorescence staining techniques using tissue and cell culture samples. Perform protein-level studies by protein array and Western blot methods and gene expression studies by PCR and sequencing methods.

SELECTED PUBLICATIONS

Bozó, R., Flink, L.B., Belső, N., Gubán, B., Széll, M. Kemény, L., Bata-Csörgő, Zs. (2021) Could basement membrane alterations, resembling micro-wounds at the dermo-epidermal junction in psoriatic non-lesional skin, make the skin susceptible to lesion formation? **Exp Dermatol 30:** 765-772.

Bozó, R., Danis, J., Flink, L.B., Vidács, D.L., Kemény, L., Bata-Csörgő, Zs. (2021) Stress-related regulation is abnormal in the psoriatic uninvolved skin. **LIFE-BASEL 11:** 599.

Kelemen, E.*, **Bozó, R.***, Groma, G., Bata-Csörgő, Zs., Kemény, L., Danis, J., Széll, M. (2021) The psoriatic non-lesional skin: a battlefield of constant fight between susceptibility and protective factors. **J Invest Deramtol 141:** 2785-2790.

Bozó, R., Szél, E., Danis, J., Gubán, B., Bata-Csörgő, Zs., Szabó, K., Kemény, L., Groma, G. (2020) Cartilage Oligomeric Matrix Protein Negatively Influences Keratinocyte Proliferation Via α5β1-Integrin: Potential Relevance of Altered Cartilage Oligomeric Matrix Protein Expression in Psoriasis. **J Invest Deramtol 140:** 1733-1742.e7.

Szél, E., **Bozó, R.**, Hunyadi-Gulyas, E., Manczinger, M., Szabo, K., Kemény, L., Bata-Csörgő, Zs., Groma, G. (2019) Comprehensive Proteomic Analysis Reveals Intermediate Stage of Non-Lesional Psoriatic Skin and Points out the Importance of Proteins Outside this Trend. **Sci Rep 9:** 11382.