

Investigating the role of memory T cell subsets in skin and hair follicle diseases

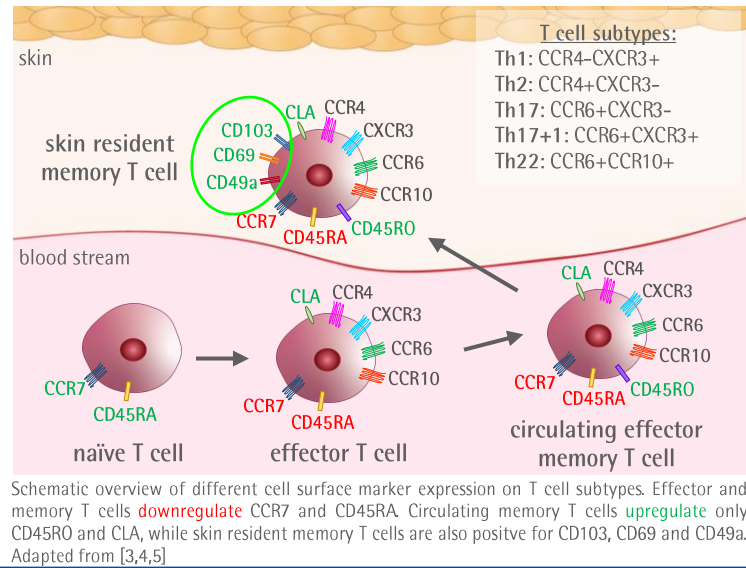
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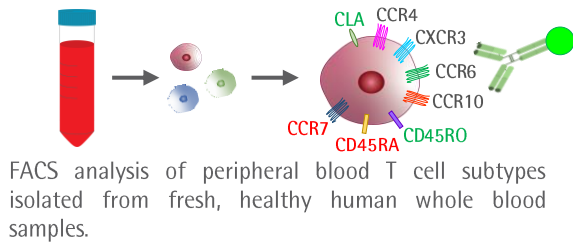
Memory T cells either residing (T_{RM}) or recruited into the skin, play a fundamental role during pathogen invasion by quickly generating effector cells [1,2]. However, memory T cells are also key players in autoimmune skin disorders, such as vitiligo and psoriasis [3,4,5]. In psoriasis, memory T cells are retained in the resolved lesions or circulation, even for months after effective treatment. Thus, the presence of resident or circulating memory T-cells can greatly contribute to disease recurrence and severity [5].

Our methods:

- FACS analysis of circulating immune cells isolated from whole blood of healthy individuals or patients
- FACS analysis of skin resident immune cells isolated from skin samples of healthy individuals or patients
- Immunofluorescence staining on freshly embedded, healthy or lesional skin samples or after *ex vivo* skin organ culture

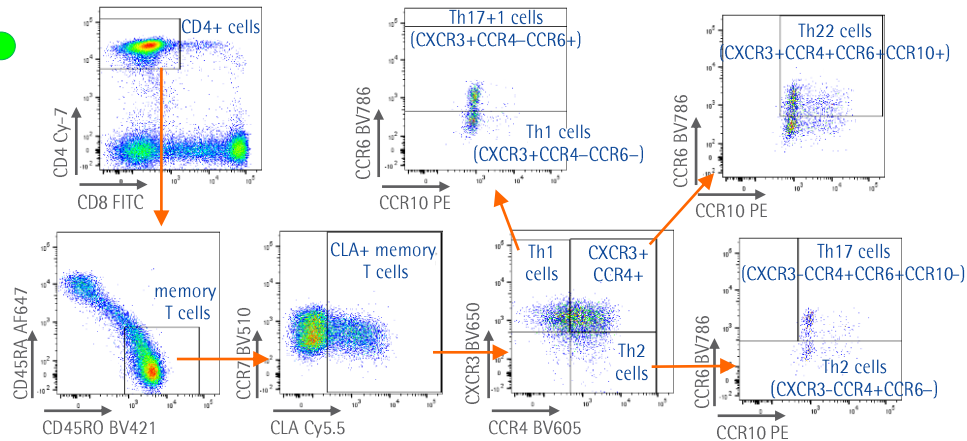


Characterization of circulating, skin-homing memory T cell subsets in healthy individuals



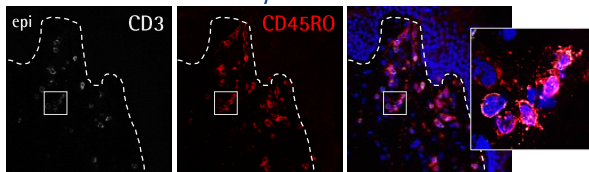
Functional Read-Out Parameter:

- cell activation
- cytokine secretion
- cell viability
- bulk and single cell RNAseq analysis...

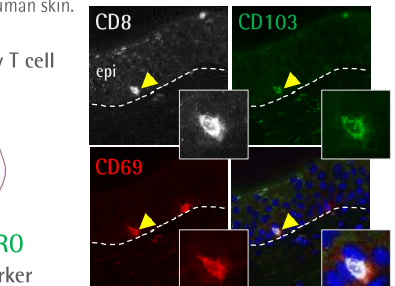
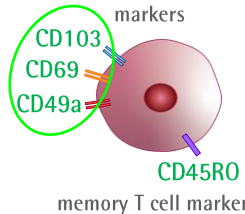


Detection of skin resident memory T cells in healthy and diseased skin samples

Immunofluorescence staining in healthy human skin

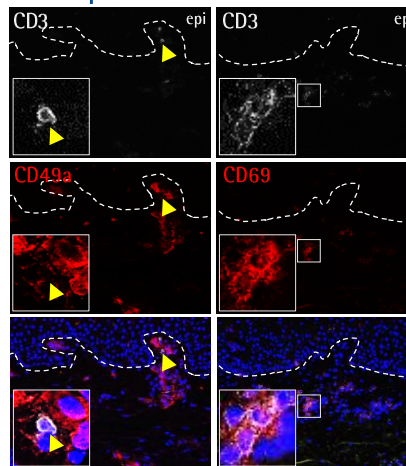


skin resident memory T cell markers



Triple staining (arrow) of the cytotoxic T cell marker CD8 with the skin resident memory T cell markers CD103 and CD69 in healthy human skin.

Immunofluorescence staining in psoriatic lesional skin



Double staining of the T cell marker CD3 with the skin resident memory T cell markers CD49a (arrow; left panel) or CD69 (white square; right panel) in psoriatic lesional skin.

We have also access to atopic dermatitis, alopecia areata, and vitiligo blood and lesional skin samples

FACS analysis also possible on skin samples

Contact us for a customized study:

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References. general memory T cell biology: 1. Tokura et al. Front Immunol (2021); 2. Ryan et al. Front Immunol (2021). Memory T cells in skin autoimmune disorders: 3. Hirai et al. J Invest Dermatol (2020); 4. Willemsen et al. Pigment Cell Melanoma Res (2019); 5. Cheuk et al. J Immunol (2014).

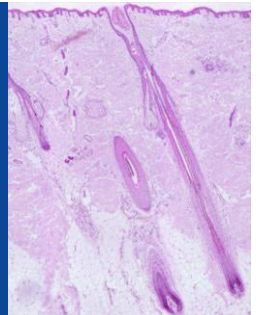


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