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ABOUT

Antwerp Center for Translational Immunology and Virology (ACTIV) is part of the Vaccine and Infectious Disease Institute (VAXINFECTIO) at the University of Antwerp.

Within ACTIV we start from a clinical context and use a multidisciplinary approach to

- obtain a better understanding of the underlying pathophysiology
- improve diagnostics, risk stratification, and therapeutics

We are specialized in understanding the T-cell receptor (TCR) – peptide – MHC interaction

MULTI-OMICS INVESTIGATIONS

Multi-omics profiling of pathogen and human host gives insights in

- drivers of disease susceptibility
- diversity in immune responses
- potential vaccination targets

Technology platforms and infrastructure

- high-throughput and single-cell sequencing
- HLA genotyping and TCR sequencing
- flow cytometry and cell sorting
- HPC-based bioinformatics workflows

APPLICATIONS

In collaboration with several close (national and international) collaborators we focus on

- varicella-zoster virus (chickenpox & herpes zoster)
- pediatric rheumatology
- immuno-sequencing and mathematical modelling in vaccinology and infectious diseases

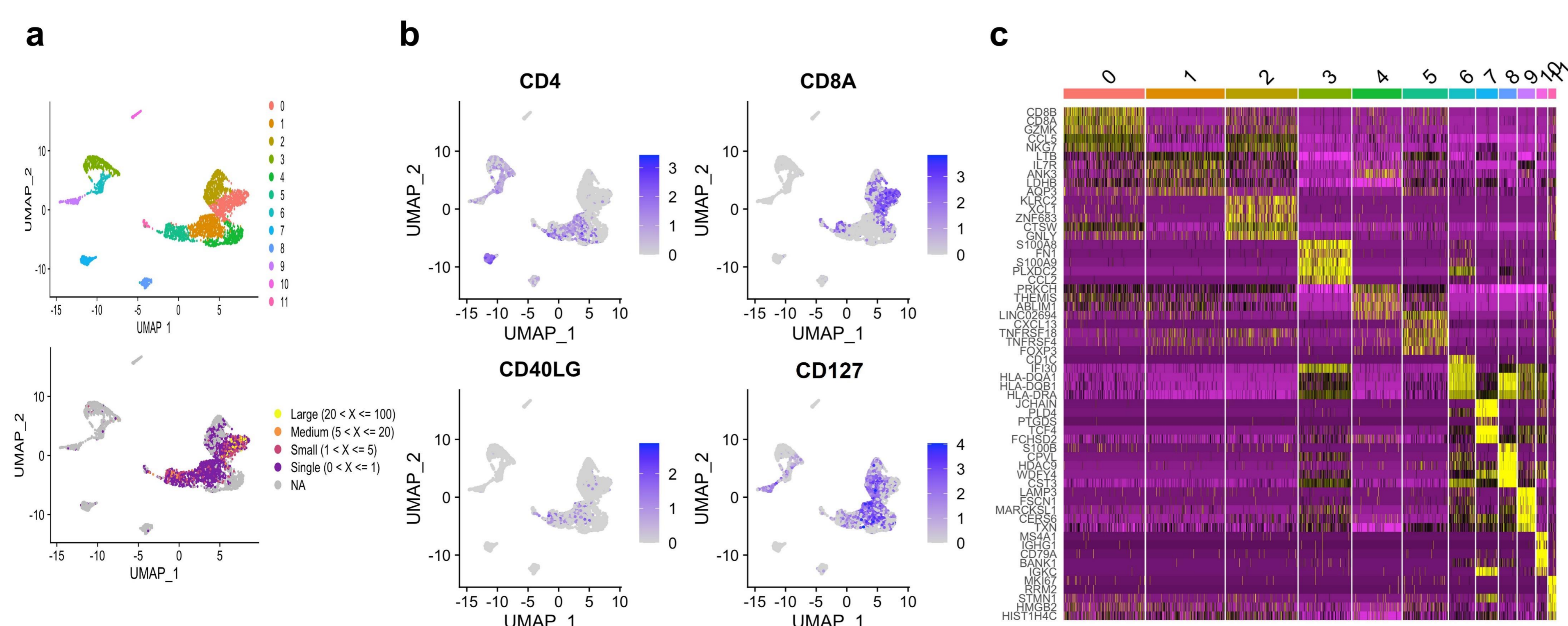


Figure 1. Single-cell immuno-sequencing data from the synovial fluid cells of a juvenile idiopathic arthritis patient. (a) Upper panel: UMAP clusters; Lower panel: levels of clonal expansion per cluster. (b) Phenotyping results. (c) Top 5 distinct genes per cluster.

CONTACT

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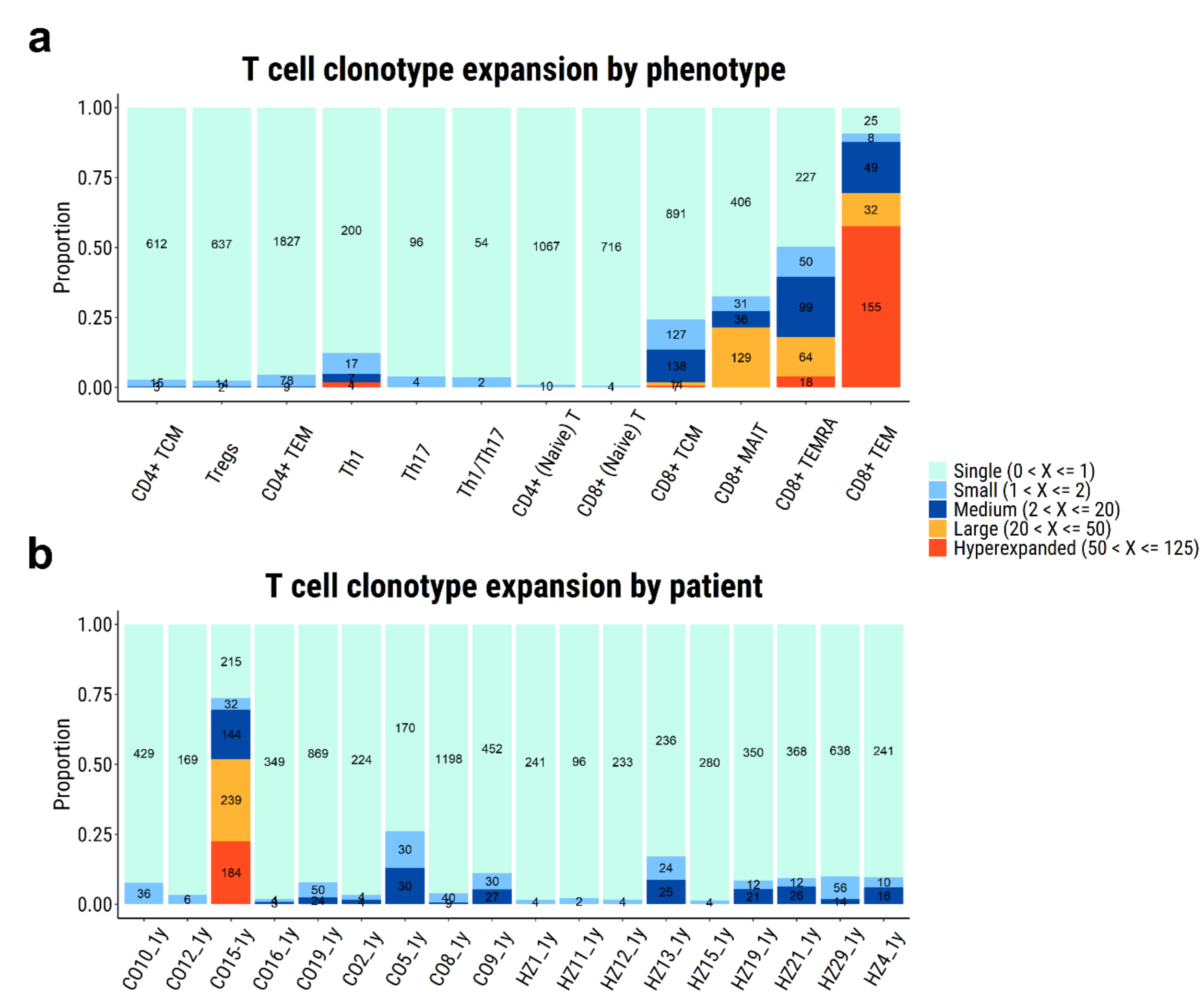


Figure 2. Single-cell sequencing data of T-cell clonal expansion distribution. (a) Across the different cellular phenotypes. (b) per patient. Results were obtained from 9 HZ patients one year after the HZ episode (HZ_1Y) and 9 age and sex matched controls (CO_1y).

COLLABORATIONS

