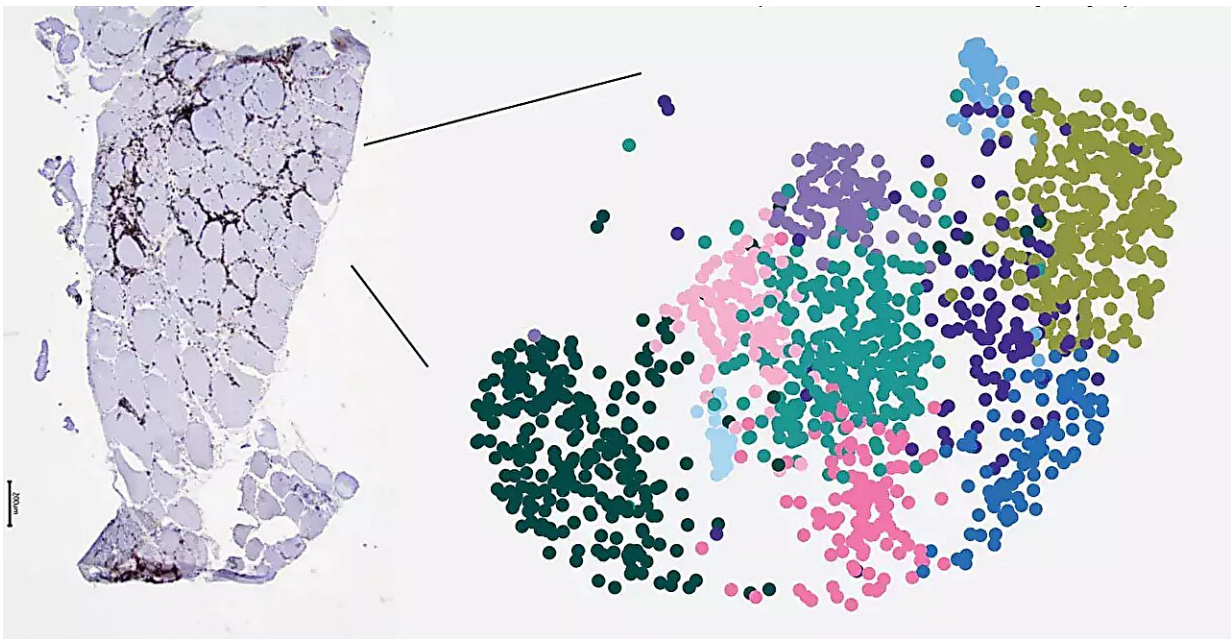


Persistent T cells identified in the muscles of patients with idiopathic inflammatory myopathies

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Muscle-infiltrating T cells in idiopathic inflammatory myopathies. Credit: Karine Chemin

In the first study of its kind, researchers at Karolinska Institutet and rheumatologists at Karolinska Sjukhuset have characterized T cells in the muscle tissue of patients with idiopathic inflammatory myopathies. They show that the same T cells persist in the muscle over time despite

immunosuppressive treatment. This study is now published in the journal *EMBO Molecular Medicine*.

Idiopathic inflammatory myopathies (IIM) are rare autoimmune diseases characterized not only by [skeletal muscle](#) weakness but also by a large variety of extra-muscular organ involvement, where treatment represents a challenge due to the variable response rate, often with disappointing results. The presence of T cell infiltrates in skeletal muscle is a hallmark of many subsets of IIM. However, a deeper analysis of T [cells](#) at the site of inflammation was still lacking and could help defining or predicting a better treatment for each patient as well as understanding the molecular pathophysiology.

"We took advantage of the collection of muscle biopsies for diagnosis purposes to also perform a deeper analysis of T cells in [muscle](#) and blood of patients with IIM," says Karine Chemin, Karolinska Institutet, Department of medicine, Solna, Division of Rheumatology.

"The most important finding of this study is that we identify T cells which have features of tissue residency. We show that these cells are maintained within the [muscle tissue](#) despite immunosuppressive treatment. We postulate that these cells, which are expanded in the tissue, might contribute to relapses and disease chronicity. We also provide a deep transcriptomic analysis of these T cells, a molecular mapping, that we hope can be used to better understand the disease pathogenesis and to develop new therapeutic targets for difficult to treat patients."

The authors now plan to collect samples from more patients to gain a better overview of the molecular differences between the different IIM subtypes.

More information: Alexandra Argyriou et al, Single-cell profiling of

muscle-infiltrating T cells in idiopathic inflammatory myopathies,
EMBO Molecular Medicine (2023). [DOI: 10.15252/emmm.202217240](https://doi.org/10.15252/emmm.202217240)

Provided by Karolinska Institutet

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