

Master Student Position at University Hospital of Zürich

Moving towards Personalized Medicine: Precision Cut Skin Slices to Model Gene-Responsive Signatures for Novel and Existing Therapies for Systemic Sclerosis Patients	
Short description	<p>Systemic sclerosis (SSc) is a chronic autoimmune fibrotic connective tissue disease with multi-organ involvement and potentially severe outcome. SSc is associated with high morbidity and the highest mortality among the rheumatic diseases. Fibrosis, one of the main feature of SSc, occurs when the organ parenchyma is replaced with a collagen-rich, stiff connective tissue, leading to organ dysfunction. Currently, there is still an unmet need for novel therapies, biomarkers and humanized models for fibrosis and SSc.</p> <p>Aim: to establish a humanized 3D model using precision cut tissue-slices (PCTS) to further characterize the molecular changes occurring in the skin of systemic sclerosis patients. The PCTS model utilizes tissue explants, which retain the native 3D cellular and microvascular architecture.</p> <p>Goals:</p> <ul style="list-style-type: none"> • Develop the 3D skin model • Define the molecular characteristics of <i>ex vivo</i> SSc skin • Establish drug-response signatures for therapies commonly used to treat SSc patients <p>Methods:</p> <ul style="list-style-type: none"> • Live (human) tissue processing • Tissue culture • RNA isolation/Bulk RNA sequencing/qPCR • ELISA • Viability assays • Immunohistochemistry/Immunofluorescence
Supervisor Institute E-mail Phone	<p>Prof. Dr. Oliver Distler</p> <p>Please contact Astrid Hofman (Group Distler) for further information: astrid.hofman@usz.ch</p>
Conditions	<p>We are looking for enthusiastic master students. Basic knowledge of techniques in molecular biology is an advantage.</p>
Links	<p>https://www.usz.ch/fachbereich/rheumatologie/forschung/ssc-fibrosis-and-autoimmunity/</p>