The word “stroma” is Greek for mattress, and “stromal cells” were originally understood as cells in organs that provided structural support and not much else. In recent years our understanding of stromal cells, and the immunologically-specialised roles these cells play has simply exploded, and they are now one of Immunology’s most far-reaching and fascinating areas of study.

Our research program is focused on fibroblast-like stromal cells found in secondary lymphoid organs and tumours. These cells create the structure on which leukocytes crawl and interact. We and others have shown that fibroblasts in lymph nodes are fundamental to healthy immune function, through interactions with T cells, B cells, dendritic cells and macrophages, directly supporting cell survival, function and migration.

The laboratory studies key mechanisms of action, aiming to target these cells directly with therapeutic effect. We are also now focusing on exploring how these cells manipulate the immune response against cancer, a topic at the forefront of cancer immunology.

The research program utilises primary human tissues as well as mouse models, cutting-edge flow cytometry, cell culture, immunofluorescence, RNA-Seq and live cell imaging.

Research Projects

1. Exploring the profibrotic actions of CCL18 in the cardiovascular system

2. Role of the inflammasome in the pathogenesis of pulmonary hypertension

3. Using human amnion stem cells to improve stroke outcome

Selected significant publications:


Immunofluorescence of the human tonsil, depicting the FRC microenvironment. FRCs closely shape the response of T cells and proliferating lymphocytes. Red = FRCs; Green = T cells; Blue = proliferating nuclei; Grey = nuclei.