

## **Combining Spatial Transcriptomics and Hyperion Imaging Flow Cytometry to identify therapeutic targets in human Diabetic kidney disease**

Diabetic Kidney Disease is a growing problem, and the formation of scar tissue within the kidney is a key part of its pathology.

Spatial transcriptomics is a new technique that will allow us to “zoom in” to the regions of scar tissue and get a deeper understanding of what genes are being expressed specifically in those areas.

This can be combined with existing datasets about the types of cells present in diseased Diabetic kidney to provide unprecedented detail about the interactions of these cell types in the scar, potentially identifying new targets for anti-fibrotic drug treatments to halt fibrosis and reduce the severity of disease.

One limitation of transcriptomics technology is that it is not possible to be certain whether the genes identified actually produce the proteins that they code for.

To ensure that the genes we identify are actually present in diseased tissue, these potential new targets will be further characterised using Hyperion Image Mass Cytometry.

This will allow us to look for many of these proteins at the same time and which cells they are expressed in.

With the spatial transcriptomics and Hyperion experiments combined, we therefore hope to identify and confirm the presence of novel factors which might be targeted in the future to reduce the impact of fibrosis on kidney disease.