Pipeline for Sample Clearing and Expansion – TDP 2021

Background Clearing:
There is an increased interest from life science researchers to VISUALIZE tissues and cells in 3D, in order to better understand morphological structures and provide whole context.

Clearing support to national users are developed to make large tissue samples optically transparent, drastically reducing the amount of light absorption and scattering, giving scientists the possibility to image entire organs on the centimeter scale.

![Light sheet microscopy of cleared mouse brain](image1)

![Rat kidney before and clearing](image2)

Background Expansion:
There is an increased interest from life science researchers to RESOLVE tissues and cells in 3D better, in order to visualize sub-cellular molecular structures.

Expansion support to national users are developed to swell tissue and cells, generating both increased resolving power and reduced light absorption and scatter, allowing life scientists to image the nanoscale with conventional microscopy.

![Rat kidney before/after expansion](image3)

![Expansion of spheroid](image4)

![Expansion of mitochondria](image5)