FROM FISH TO VIRUSES: REFINING EXPANSION MICROSCOPY FOR THE IMAGING OF DIVERSE BIOLOGICAL SAMPLES

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Expansion microscopy is a revolutionary approach that was proposed in 2015 for breaking the diffraction barrier of optical microscopy, and image cell structures that are smaller than 200 nm [1]. Expansion microscopy relies on the physical magnification of the samples via swellable polymers for generating larger structures, often enabling imaging under the diffraction limit without any need for expensive and sophisticated machines [2].
Recently, we have refined Expansion Microscopy for the advanced imaging of a variety of samples and addressing different biological questions. We have successfully employed expansion microscopy for imaging the infection process of HSV-1 viruses in human cells, the filtration barrier in kidney slices, the eye development in zebrafish embryos.

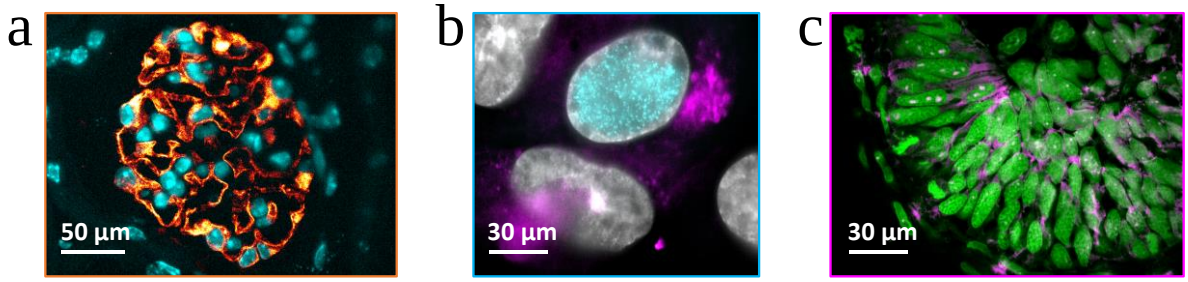

Figure 1: Microscopy pictures of expanded samples. a) A glomerulus in a mouse kidney slice. b) HSV-1 (herpes simplex 1) infected human fibroblasts. c) Detail of an eye of a zebrafish embryo.

REFERENCES

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