



Visualization of biological information by tissue clearing
組織透明化による生体情報の可視化

【Keywords】

Tissue clearing

3D imaging

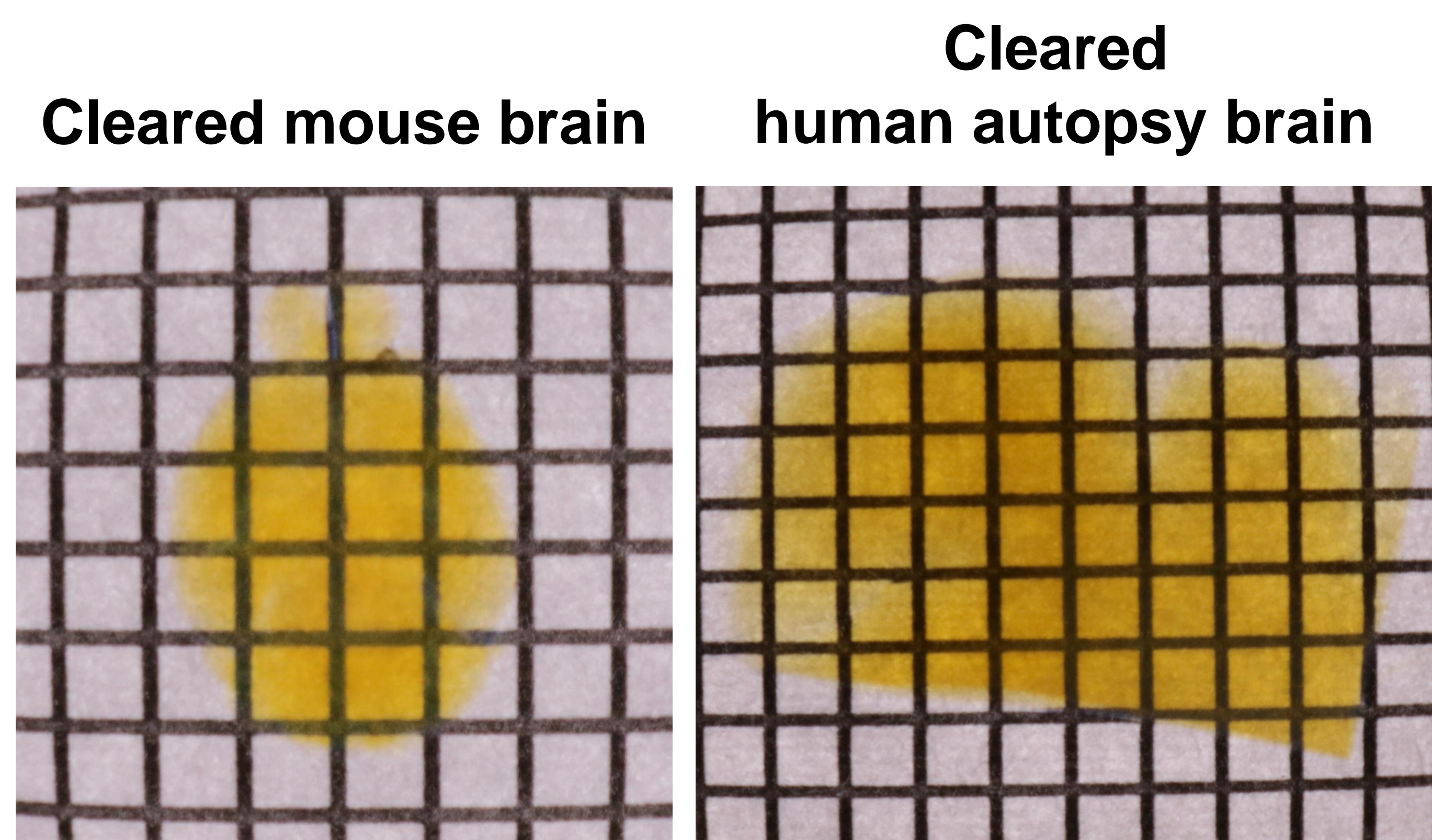
Brain

Macrophage

Immediate early gene

■ Summary

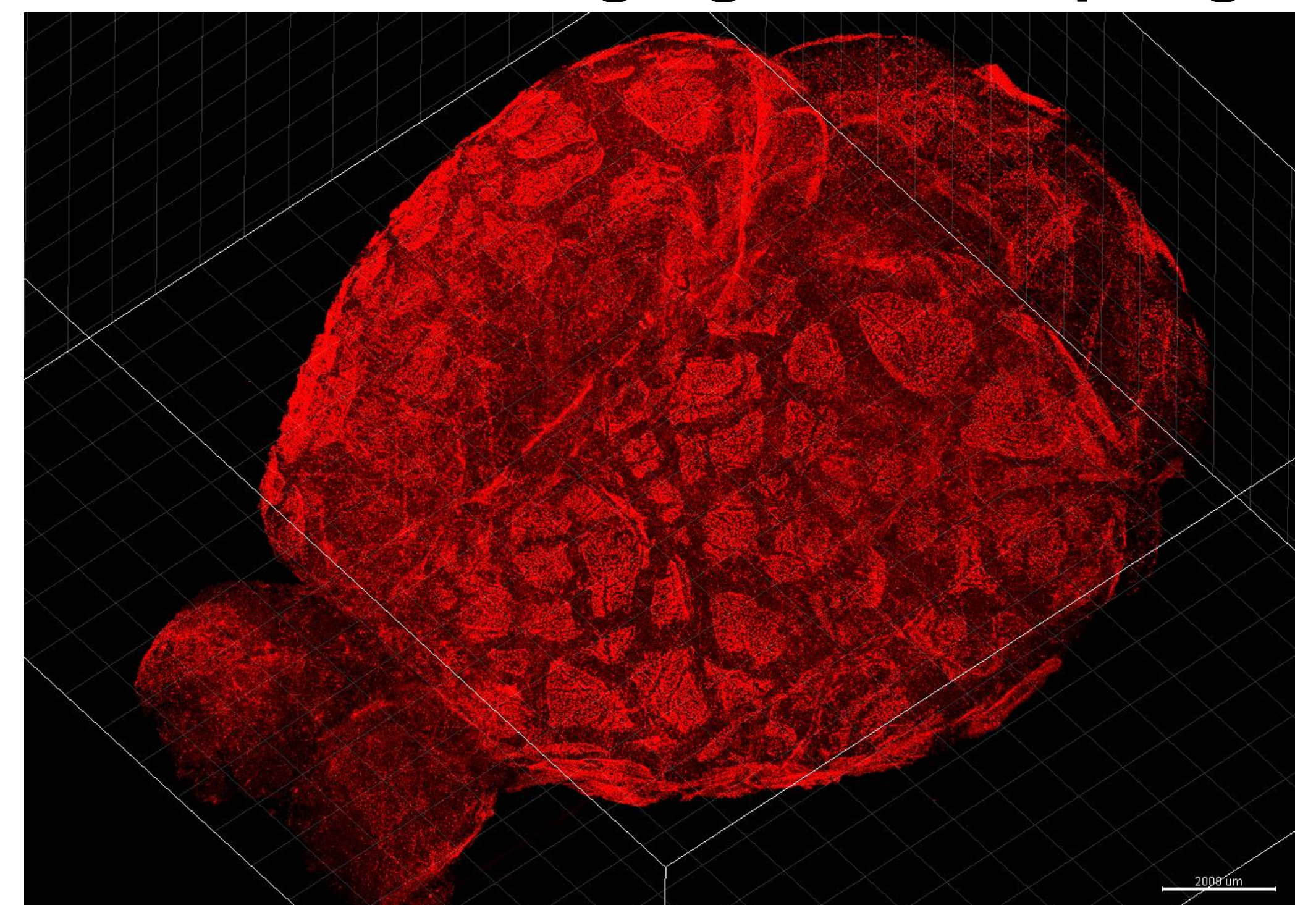
Our specialty is to visualize and quantify biological information by using tissue clearing and immunostaining followed by 3D imaging. We are trying to establish new clearing methods. In addition, we have succeeded in **whole brain imaging of immune cell and activated neurons**.



■ Subject Details/Topic

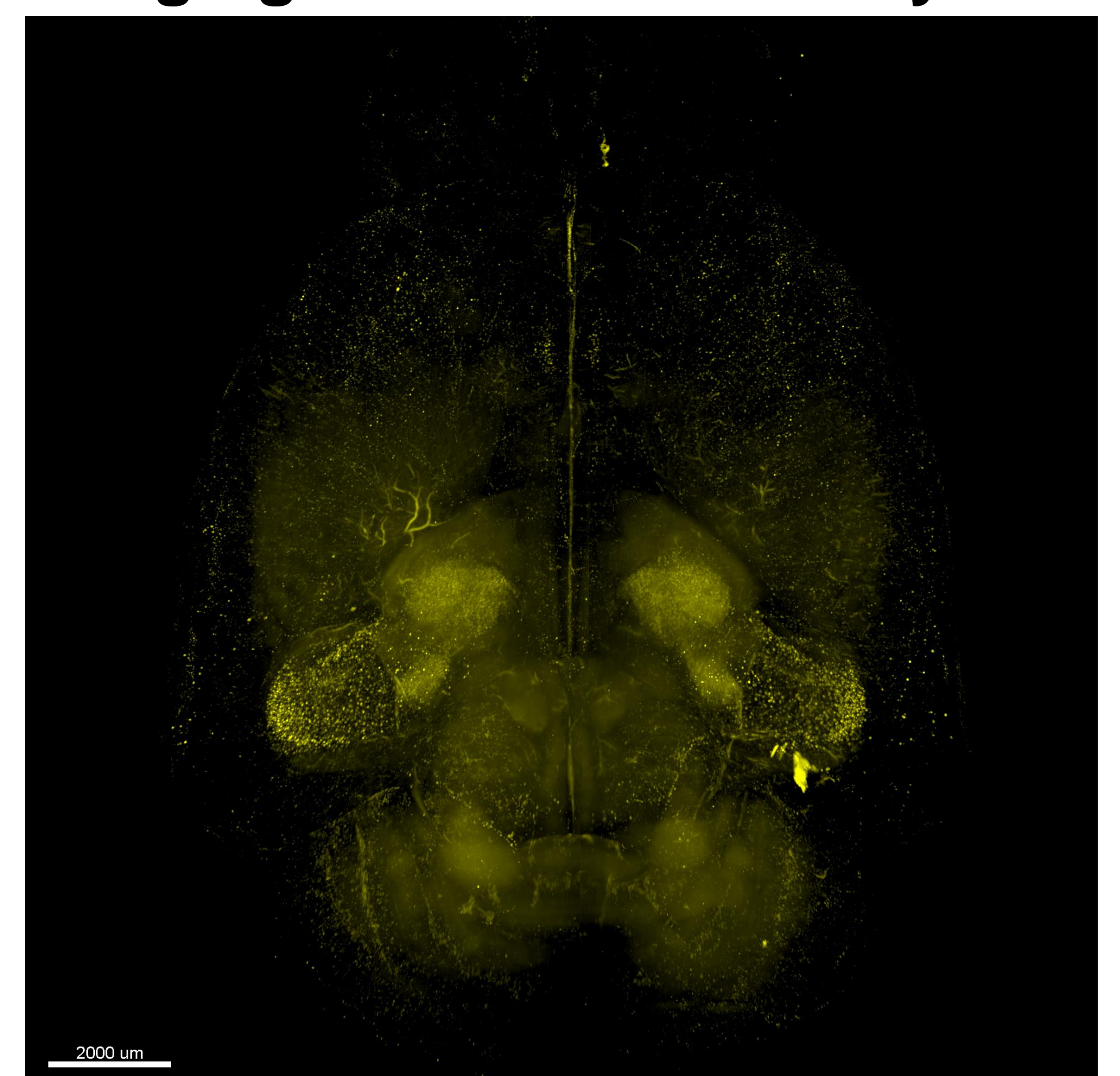
Topic1: Immune cells (macrophages) in the meninges are found at the edge of brain slice, so that it is difficult to know their brainwide distribution. Using tissue clearing and 3D imaging, we have uncovered the spatial distribution of meningeal macrophages in the whole brain.

Whole brain imaging of macrophage



Topic2: We have established the whole mouse brain immunostaining method with antibody against cFos, an immediate early gene whose expression is induced by neuronal activity. In addition, we also constructed a pipeline for automatic quantification of 3D imaging data.

3D imaging of neuronal activity marker



We are also planning to perform omics experiment from cleared sample, and 3D imaging of pharmaceutical agents.

■ We hope to collaborate with...

Drug discovery

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