

## IKEUCHI LAB.

## Modeling the Nervous System



Department of Materials and Environmental Science

Biomolecular and Cellular Engineering

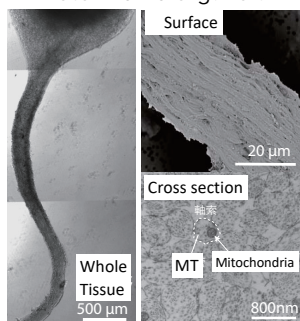
Department of Chemistry &amp; Biotechnology, Graduate School of Engineering

<http://www.bmce.iis.u-tokyo.ac.jp/>

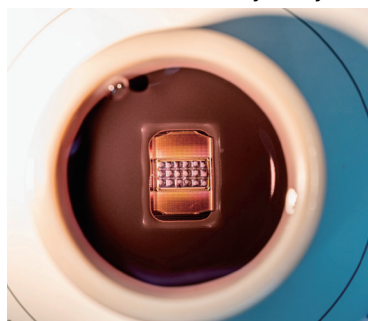
## Understanding the Human Brain by Building Neural Circuits Outside of the Body

Despite years of research, most of the functions of the human brain remain to be understood. The human brain is filled with a hundred billion neurons with long protrusions that interlink in a complex manner. At Ikeuchi Laboratory, we are generating these brain nerve cells from induced pluripotent stem cells (iPS). By connecting and manipulating these neurons in different ways, we are demystifying the underlying processes of our brain functions. By discovering the processes of the human brain, we aim to understand brain disorders and neurodegenerative diseases to accelerate the development of new drugs.

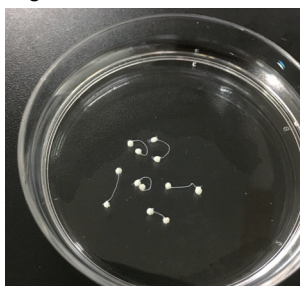
### Motor nerve organoid



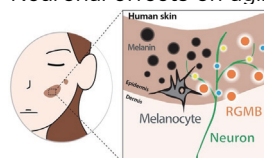
### Multi Electrode Array analysis



### Modeling neural circuits in a dish



### Neuronal effects on aging



Human primary melanocytes

