Analysis of the molecular biological features of mesenchymal stem cells in vivo

We are studying mesenchymal stem cells (MSCs), a type of tissue stem cells. In clinical studies, cultured MSCs have shown important therapeutic effects on disease, reducing neurological defects and regulating immune responses. However, in vivo MSC localization, function, and properties are poorly understood. To address these issues, we are developing a method that allows us to visualize MSCs in vivo, manipulate MSC function in vivo, and analyze the molecular biology of MSCs in vivo. Using this approach will enable us to understand the molecular biology features of MSCs in vivo, leading to therapeutic applications for tissue repair and regeneration.