

Realization of common platform technologies, facilities and equipment that create innovative knowledge and products

R&D Project Title : Development of various dyes with novel lifetime properties and creation of quantitative multiplex optical imaging technique

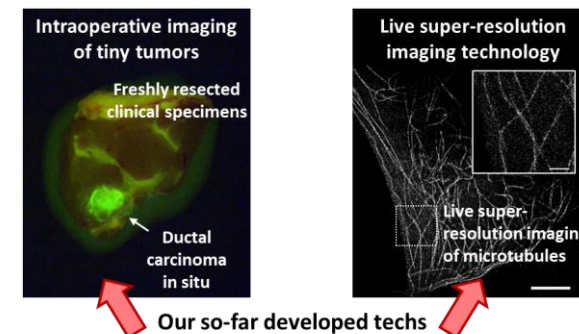
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R&D Team :

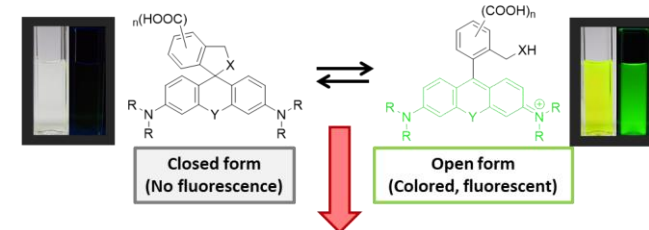
Summary :

In this project, we will develop a group of functional fluorescent dyes with new optical properties not found in conventional dyes by utilizing the fluorescence precision control technology that the principal investigator has established. With the completion of this project, it will be possible to create a revolutionary quantitative multiplex live imaging technique that overcomes the problems of fluorescence observation techniques, such as lack of quantitiveness and the small number of targets that can be imaged simultaneously in multiple colors. In addition, by designing and developing various types of photosensitizer probes based on the same design strategy, it will be possible to establish phototherapy technology that is tailored to the enzymatic characteristics of each patient's cancer cells, and thus create a highly effective new cancer personalized medicine technology that can be applied to many patients. These techniques are not only a research tool in the field of basic biology, but will also bring about revolutionary changes in the development of medical technologies that are directly related to people's lives, and will have a tremendous impact on our society.



Our so-far developed techs

Unique fluorescence precision control based on spirocyclization



<Technologies to be established in this project>

We will develop novel fluorescent and photosensitizing probes with new optical properties, and aim to create the following innovative technologies.

- Breakthrough quantitative multiplex live imaging technology
- Highly effective cancer personalized phototherapy technology