

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

**R&D Project Title (Registered)** Creation of small molecule-based precision cancer theranostics medical technology by diagnosing and utilizing enzyme "activity"

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## Summary :

Personalized medicine, in which the genetic mutation of each patient's cancer cells is identified and the most appropriate therapeutic drug is administered based on this information, has been gaining popularity in recent years. However, at present, only about 10% of patients are found to have a therapeutic drug, and there is still an overwhelming shortage of therapeutic drugs. Against this backdrop, the PI has succeeded in establishing an intraoperative rapid visualization technique for tiny cancer using original fluorescence probes. This technique is based on enzymatic activities of cancer cells, and this approach (the Urano's method) can be used to diagnose the enzyme activity characteristics of each patient, as well as to rapidly develop prodrug-type therapeutic agents. This research aims to establish a new personalized and precise cancer treatment technology for the majority of cancer patients for whom no effective treatment options were available in the past, and to realize a safe society where everyone believes that cancer is a curable disease.

The future society we aim to realize:  
A society where everyone believes that **cancer is curable**.

