

Realization of Common Platform Technology, Facilities, and Equipment that creates Innovative Knowledge and Products

Development of techniques for single-cell profiling based on physical properties

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Summary :

Circulating tumor cells (CTCs) are involved in the metastasis process of cancer. Conventionally, detection of CTCs relies on the epidermal cell markers expressed on the cell surface. However, it is difficult to obtain comprehensive information of CTCs because the CTCs which does not abundantly express the marker molecules exist. To address this issue, in this project, we will develop a novel cell-profiling technique based on the physical properties of the cells. Combined analysis of physical properties and genetic information will allow us to deeply understand the characteristics of the individual cells of interest without relying on the cell surface markers. The analytical platform developed in this study will be useful to monitor the conditions of cancer patients and to study the medicinal effects and mechanisms of the anti-cancer agents.

