Realization of common platform technology, facilities, and equipment that creates innovative knowledge and products

Precise creation of cell-cell interaction for utilizing cell resources

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Summary :

In our bodies, most of vital phenomena are based on cell-cell interactions. Accordingly, the effects of prevention and treatment on many difficult-to-cure diseases are determined according to the interactions of the related cells. However, these important cell-cell interactions cannot be comprehensively and quantitatively analyzed at a single-cell level because it is extremely difficult to artificially create the interactions between individual cells.

In this study, we aim to develop a new technology which enables to precisely create a huge number of single-cell pairs which interact each other by using our photo-responsive cell immobilizing reagents. On the surfaces modified with these reagents, we can position any types of living cells at the desired sites. Based on this technology, each interaction between diseased cells and therapeutic cells will be quantitatively analyzed at a single-cell level for enhancing the progress in drug discovery and a cutting-edge medicine with cell resources.



