

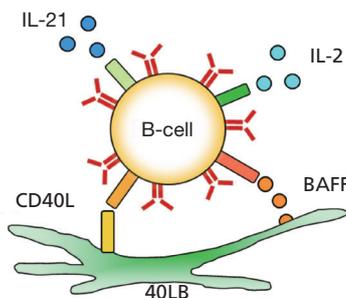
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## Purpose of Research

On the surfaces of cancer cells that constitute a tumor, there are antigen proteins peculiar to cancer cells which are involved in cancer proliferation and malignant transformation. However, it is thought that B lymphocytes from the outside of tumor tissues infiltrate the tissues, produce antibodies specific to cancer cell surface antigens. These antibodies then attack the cancer cells. Using our proprietary B cell culture technology, we aim to develop novel antibody drugs effective against cancer by culturing B cells that produce such anti-tumor antibodies.

## Summary of Research

### [Fig. 1] Inducible Germinal Center B Cell (iGB) Culture Method



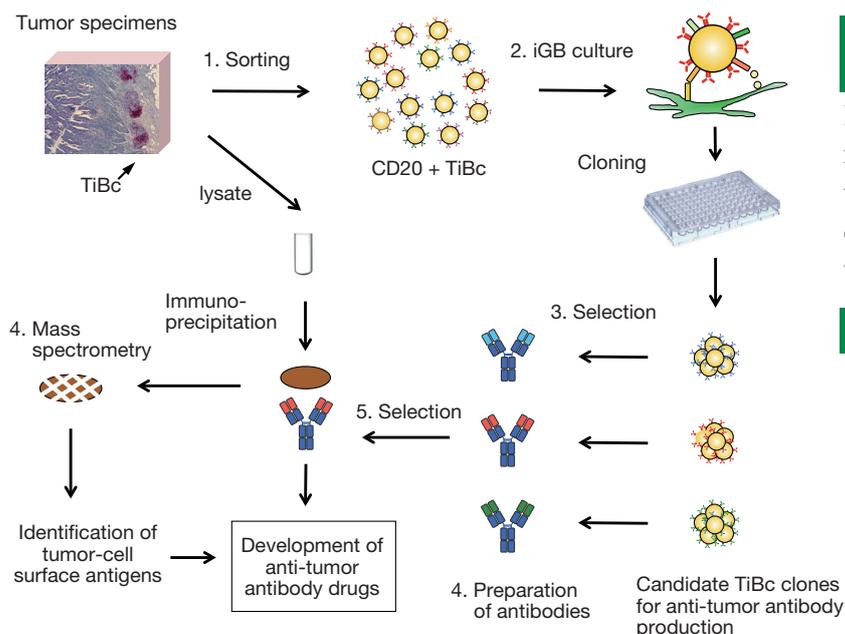
Our B cell culture technology, “inducible germinal center B cell culture method” allows for the long-term cultivation of B cells on 40 LB cells expressing molecules that enhance B cell proliferation, in a specific culture medium containing cytokines (Fig. 1)

Tumor-infiltrating B cells (TiBc) are considered to be B cells which produce antibodies that bind to tumor antigens. We believe that by culturing TiBc using this technology, we can obtain antibodies against antigenic proteins on the tumor surface (Fig. 2).

This antibody can serve as the seed of an antibody drug or a chimeric antigen receptor (CAR) used for immune cell therapy.

Furthermore, using the antibody obtained, it is possible to identify the corresponding antigen, and to clarify the mechanism of action of the antibody drug under development.

### [Fig. 2] Research Outline



### Comparison with Conventional or Competitive Technologies

In the prior art, it was necessary to fuse mouse-derived B cells with other cells. However, with this technology, it is possible to cultivate B cells originating from humans (or the desired animal) without cell fusion.

### Expected Applications

- Development of antibody drugs for cancer treatment.
- Development of chimeric antigen receptor for immune cell therapy

### ■ Intellectual Property: Japanese Patent No. 05550132

(This study is being carried out in collaboration with Dr. Nakatsura, the head of field of immunotherapy development of the National Cancer Research Center.)

