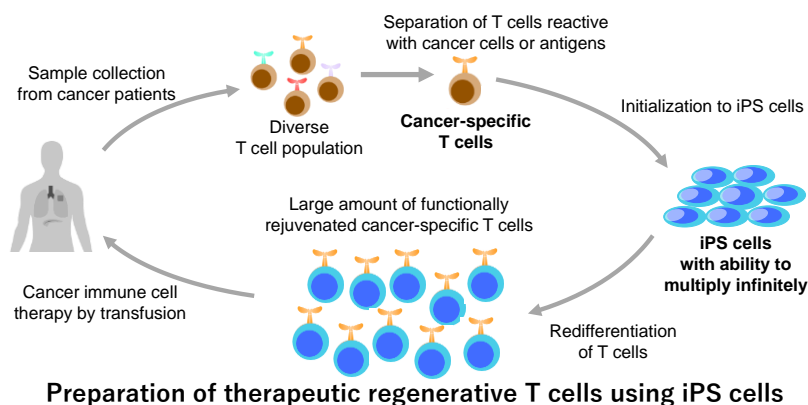


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Joint research on personalized cancer immunotherapy using regenerated T cells derived from iPS cells

Kyoto and Suita--- The Center for iPS Cell Research and Application, Kyoto University ("CiRA"; Headquarters: Sakyo-ku, Kyoto, Japan; Director: Shinya Yamanaka) and KOTAI Biotechnologies, Inc. ("KOTAI"; Headquarters: Suita, Osaka, Japan; CEO, Kazuo Yamashita) jointly announced today that they have initiated joint research on personalized cancer immunotherapy using regenerated T cells¹ derived from induced pluripotent stem (iPS) cells².

The laboratory of Associate Professor Shin Kaneko at the Department of Cell Growth and Differentiation at CiRA has been engaged in research on therapeutic regenerative T cells using iPS cells for cancer immune cell therapies. In these therapies, cytotoxic T cells³ that can attack cancer cells are isolated from cancer patients and reprogrammed into iPS cells. These iPS cells are then used to produce large numbers of rejuvenated T cells with high anti-cancer function (see figure below). CiRA and KOTAI have started joint research to establish more efficacious individualized cancer immune cell therapies using a surface antigen⁴ specifically expressed on anti-cancer cytotoxic T cells and immuno-informatics technologies possessed by KOTAI.



In this joint research, CiRA isolates T cells from cancer tissue and conducts iPS cell induction, T cell redifferentiation, and functional evaluation, while KOTAI provides information on the surface antigen for the T cell isolation and performs genetic analysis of the cells.

CiRA and KOTAI are working diligently to further the development and spread of cancer immune cell therapies.



The Center for iPS Cell Research and Application (CiRA), Kyoto University :

<https://www.cira.kyoto-u.ac.jp/e/index.html>

KOTAI Biotechnologies, Inc. : <https://www.kotai-bio.com/>

(Note 1) T cells: A type of lymphocyte that acts in immunity by recognizing and eliminating infected cells and cancer cells. Each T cell responds to a specific antigen. There are various types of T cells, such as cytotoxic T cells, helper T cells and others.

(Note 2) iPS cells: Somatic cells, such as skin or blood cells are reprogrammed into the pluripotent state by introducing a few genes. iPS cells are a type of stem cell with almost indefinite capacity to multiply and can differentiate into almost any kind of cell in the body.

(Note 3) Cytotoxic T cells: A type of T cell. When antigen information is received from other immune cells, cytotoxic T cells attack the cells corresponding to the antigen.

(Note 4) Surface antigen: A substance on a cell surface recognized by an antibody.

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