



PRESS RELEASE

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Rebirthel concludes the research collaboration agreement with Fujita Health University

– Joint development of the therapy for the novel coronavirus infection using versatile killer T cells –

Kyoto, October 14, 2020: Rebirthel Co., Ltd.¹⁾ (hereafter Rebirthel) has announced today that they have concluded the research collaboration agreement with Fujita Health University to develop a new therapy for the novel coronavirus infection. It is a method that utilize universal killer T cells regenerated from iPS cells.

Rebirthel has been conducting the principal project which is to apply the regenerated T cell preparation to cancer treatments, and is now starting the new project which is to apply the technology to the therapy of the novel coronavirus infection.

Fujita Medical University has been leading Japan in the novel coronavirus treatments– by accepting the novel coronavirus carriers and patients from the cruise ship Diamond Princess, and by conducting the clinical trial of AVIGAN.

Thus, Fujita Medical University is a medical organization that has strong advantage in developing a new therapy for the novel coronavirus infection.

Many kinds of immunotherapies for the novel coronavirus infection are being developed all over the world: vaccination, antibody administration, recovered patient's plasma administration etc. On the other hand, a killer T cell preparation that will be developed in this collaborative research project is completely different from these existing strategies, and is an entirely new strategy. Therefore, the success in development of this therapy will bring about a new strategy

to humankind. In this collaborative research project, we aim to start a clinical trial within 2 to 3 years.

Similar therapy strategy can be adapted not only for the novel coronavirus infection, but for various kinds of viral infections in the future.

Rebirthel believes that “injections of universal T cell preparation” will be the effective treatment for serious viral infections.

[Epexegetes]

1) Rebirthel Co., Ltd.

Rebirthel Co., Ltd (hereafter Rebirthel) is a venture company which aims at the clinical application of the therapy using “universal” and “off-the-shelf” killer T cell preparation, which has been developed by Professor Hiroshi Kawamoto, Kyoto University. Rebirthel was founded in October 2019 by Professor Kawamoto

Killer T cells are a type of T cells that have the ability to find virally infected cells or cancer cells, and kill them. Rebirthel’s technology mainly uses such killer T cell (hereafter T cell).

Rebirthel is pursuing the strategy to deliver T cells “as drug” “very soon” “immediately” and “at low cost”.

T cell preparation will be regenerated from iPS cells, so a mass production becomes possible. Using universal iPS cells that have the low risk of rejection as a material, it will be possible to produce a T cell preparation that can be given to anyone. We will produce these T cells in large numbers and cryopreserve them. When needed, T cells will be thawed and administered to patients. Moreover, a mass production will make it possible to cut cost.

Currently, at Kawamoto lab, therapeutic strategy is being developed for acute myeloid leukemia targeting the WT1 antigen. Rebirthel is supporting this development. This strategy is being prepared for clinical trials at Kyoto University Hospital in collaboration with Department of Hematology and Oncology, and Department of Transfusion Medicine and Cell Therapy.

2) Immune reaction to virus

Virus invades a host cell and is reproduced within the cell. Then, virus goes outside the cell walls and is transmitted to other cells. This is the mechanism of viral infections. Main immune reactions against virus are i) antibody produced by B cell and ii) killer T cell. (See drawing on the

right) Antibodies bind to and neutralize virus when it resides in the extracellular space. On the other hand, killer T cells eliminate virus by killing the virus-infected cells. It is known that, to cure virus infectious diseases, antibodies are not effective enough, and killer T cells are necessary.

