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再生医療

誘導型抑制性T細胞による
移植免疫寛容の誘導

Induction of Transplant Tolerance via induced T cells with
suppressing function

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Key words

Tolerance / Organ Transplantation / induced T cells with suppressing function / organ transplantation / tolerance / Industry-academia project / Regenerative medicine / clinical management guideline

Summary

In the last few decades, with the development of immunology and pharmacology, organ transplantation has been widely established as a standard medical procedure to regenerate the organ function. However, as the result of this achievement, the life-long immunosuppression to protect from immune rejection to harm the allograft increase the risk of severe infections, *de novo* cancer, and progressing metabolic diseases, as well as healthcare economic problems.

Induced T cell with suppressing function (iT_S), which we propose as new regenerative medicine in the coming clinical, are T cells generated by co-cultured with both antigens and CD80/86 mAbs. The iT_S acquire unique suppressive capacities to specific antigen and it induces antigen specific tolerance *in vivo*. We have reported the safety and clinical efficacy of this cell therapy in the previous 27 cases of pilot studies (liver 11cases, kidney 16cases), especially in liver transplant patients 7 out of 10 patients who have received the cells, were eventually released from immunosuppressant completely. Based on those data, multicenter clinical research group to induce transplant tolerance were initiated in Japan, and it clarify the indications and management weaning protocol of immunosuppressant.

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