



Rege Nephro Co., Ltd.

Company Description

The kidney is said to be an organ that cannot be repaired once it is broken, and there is still no essential cure except for kidney transplantation. Aside from research, the founder, Osafune, has been treating many kidney disease patients as a nephrologist, and has been concerned about the suffering and stress that patients have every day. A dialysis patient must continue to receive dialysis for about 4 hours once a day, 2-3 times a week for a lifetime. The stress of sticking a thick needle and continuing dialysis for a long time is no easy matter. In addition, dialysis patients spend many days at risk of many complications. As a result of asking himself how to bring relief or cure the renal disease, Osafune concluded that regenerative medicine was the solution. It goes without saying that the mission of RegeNephro is to improve the quality of life (QOL) of patients suffering from kidney disease and contribute to society.

The number of patients with chronic kidney disease (CKD) in Japan is more than 13 million, and CKD is called "new national disease" as one out of seven adults developed it. There are few effective treatments for CKD, and due to its progress, the number of patients with end-stage chronic renal failure requiring dialysis therapy exceeds 330,000, increasing by about 10,000 each year. While about 40,000 new dialysis patients occur each year, the only radical therapy, renal transplantation, remains at about 1,700 cases per year, and the problem of serious donor shortage still exists. The most serious problem with a dialysis is that the QOL of patients is significantly reduced. In addition to the medical problems, dialysis medical expenses exceed 1.5 trillion yen annually, accounting for about 5% of all medical expenses. Due to the aging of society, the number will continue to increase, and development of a solution to this is an urgent task. As development of regenerative medicine is expected to solve the problem of renal diseases, etc. Many clinical trials on cell therapy for acute kidney injury (AKI) and CKD, using mesenchymal stem cells, hematopoietic stem cells, autologous and allogeneic kidney cells, are being carried out worldwide. However so far no successful case has been observed to show therapeutic effect. Therefore, a cell type having a therapeutic effect and safety suitable for regenerative medicine for renal disease, determination of an adaptive renal disease based on elucidation of the mechanism of the therapeutic effect, and a transplantation method including an administration route have not been established.

The founder Osafune et al., developed a method to induce differentiation of human iPS cells into NPCs, which are kidney progenitor cells in the fetal period, and transplanted them under the renal capsule of AKI model mice by ischemia reperfusion. It was found for the first time that, by blood examination and histology, NPCs have a therapeutic effect of reducing renal damage in AKI model mice. After that, we developed a new original differentiation induction method to produce NPCs with high efficiency of 80% or more from human iPS cells, and a method for isolating NPCs using an antibody against a cell surface antigen. In addition, transplantation of human iPS cell-derived NPCs produced by the new induction method under the renal capsule of drug-induced AKI model mice reduced AKI symptoms and improved survival rate. We are also verifying the therapeutic effect.

Currently, Osafune et al. have transferred the technology seeds described above to RegeNephro to suppress the occurrence of dialysis patients by suppressing the progress of CKD, improve the QOL of renal disease patients, and reduce the cost of dialysis medical treatment against renal diseases. We aim to realize new regenerative medicines using human iPS cells.

Company Details

Head Office

Japan

Main Business

腎疾患治療薬の研究開発・生産・販売

President

森中 紹文

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2019年9月20日

Capital

10億2601万9500円（資本準備金含む）

URL

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Offices

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