



Development of novel safe medical device to promote regeneration of injured peripheral nerve by human iPSC-derived neuron and bioabsorbable material

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When a nerve is damaged due to a cancer operation or an injury, it must be treated by surgery. Currently, the most recommended treatment is to transplant at the expense of their own peripheral nerves, but there are some demerits that include the feeling of touch being diminished due to the removal of the sensory nerves and that treatment cannot be performed depending on the size of the nerve gap. In recent years, artificial nerves for transplantation made of artificial materials have been developed, but the therapeutic effect is still not sufficient. Therefore, we decided to generate new optimal artificial nerves for transplantation by using neurons generated from human-derived iPSC cells. From this project, we hope to achieve a ready-made artificial nerve with close to parallel abilities to that of natural nerves which can be prepared in advance for transplantation surgeries required in patients with serious nerve damage due to injury. This project has the potential to develop safe new medical device that can restore the injured nerve function.

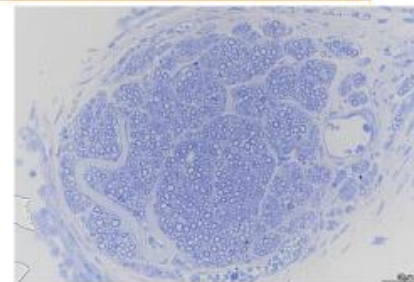
New artificial nerve to promote regeneration of injured nerve with human iPSC-derived neuron

Reconstruction surgery required when nerve is damaged by cancer surgery or trauma

Standard treatment; Autograft transplantation

Various limitations
 • short length • loss of sensory perception

New artificial nerve with human iPSC-derived neuron



Axial section of the regenerated nerve

