

July 19, 2024  
Stem Cell & Device Laboratory, Inc.  
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**Publication of our Schwann cell technology report in an international journal,**  
***Biochemical and Biophysical Research Communications (BBRC)***

Our scientific paper on how to induce differentiation of human pluripotent stem cells into Schwann cells has been published in *Biochemical and Biophysical Research Communications* (electronic version) on July 4, 2024.

Schwann cells are involved in the damage and repair of peripheral neuropathies and nerve injuries, and they are essential for drug discovery research in these diseases, as well as for potential cell therapy/regenerative medicine applications. However, there are limitations in obtaining Schwann cells from humans for cell culture and propagation, and only partial success has been achieved in generating Schwann cells from human pluripotent stem cell lines. Thus, reliable production and supply of human Schwann cells in enough quantities have been a major challenge.

We have succeeded in inducing differentiation of human iPS cell lines into highly purified Schwann cell progenitors. Also, we have developed a reliable and highly reproducible method to create mature Schwann cells from these progenitors. These methods are expected to become an important basic technology not only for basic research on Schwann cells, but also for research and application of drug discovery and cell therapy for neurological diseases. It is also possible to generate Schwann cells as a pathological model from disease-specific iPS cell lines related to peripheral neuropathy, which should contribute to the study of disease mechanisms and search for treatments.

Our published article:

*Biochemical and Biophysical Research Communications* **729** (2024) 150353  
<https://doi.org/10.1016/j.bbrc.2024.150353>

Advantages of our differentiation method of Schwann cells from human pluripotent stem cell lines:

- High purity Schwann progenitor cells can be obtained in large quantities.
- Mature Schwann cells can be reproducibly produced from Schwann progenitor cells. We confirmed marker expression of mature Schwann cells, including high level expression of myelin basic protein (MBP).
- Mature Schwann cells also produce nerve growth factor (NGF) and promote neurite outgrowth and regeneration.

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