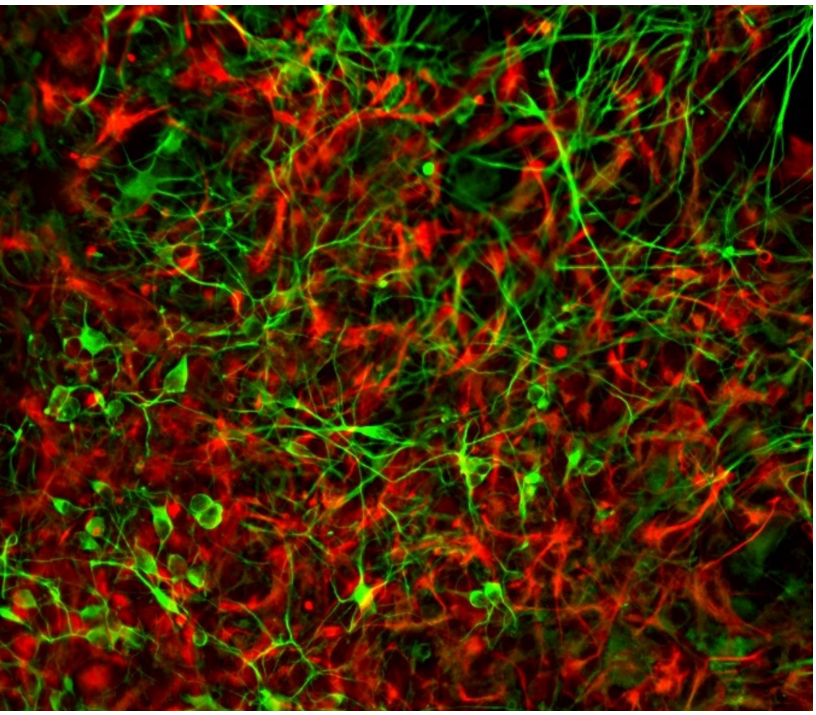
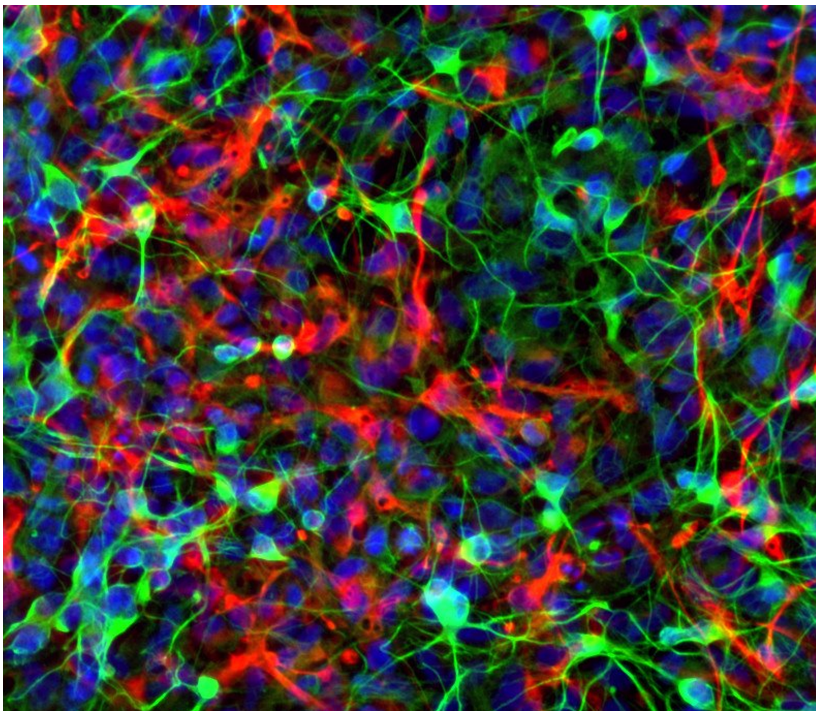
Neuronal Differentiation

Stem Cell Research Services

stemgent
A REPROCELL BRAND





Custom Human Neurons

Looking to advance your neuro-degenerative disease research? Human iPSC-derived neurons are among the most clinically-relevant models available. Generated using tissues from your target population of choice, our iPSCs can be differentiated into human motor, sensory, or dopaminegric neurons.

For an added level of translatability, we can generate astrocytes to be cocultured alongside your differentiated cells. Our protocols provide high purity neurons (at least 70%) which can be used to model a range of nervous conditions — from multiple sclerosis to Parkinson's disease.

End-to-End iPSC Services

Many stem cell research companies specialise in neuronal differentiation. But only REPROCELL can take your model from donor tissue procurement to co-culture.

In addition to differentiation, our end-to-end stem cell services include:

- Patient screening and tissue procurement
- Target cell isolation from donor tissues
- RNA Reprogramming into iPSCs
- iPSC expansion and characterisation
- CRISPR-SNIPER genome editing

Our neurons have been used by industry leaders since 2012

REPROCELL was one of the first companies to make differentiated cell types commercially available. We launched our first commercial neurons, StemRNA Neuro (formerly named ReproNeuro), in 2012 and currently possess a wide range of iPSC differentiation capabilities. Our team have successfully delivered a diverse range of custom projects for industry, either using proprietary protocols or designing a new methodology to suit their research needs.

With over 20 stem cell scientists based across three continents, and over 15 years experience in iPSC technologies, our scientists can help you at any stage of your disease research. Overleaf, we have included some immunocytochemistry images of our differentiated neurons.

www.reprocell.com

REPROCELL
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Differentiated Neuron Subtypes

Dopaminergic Neurons

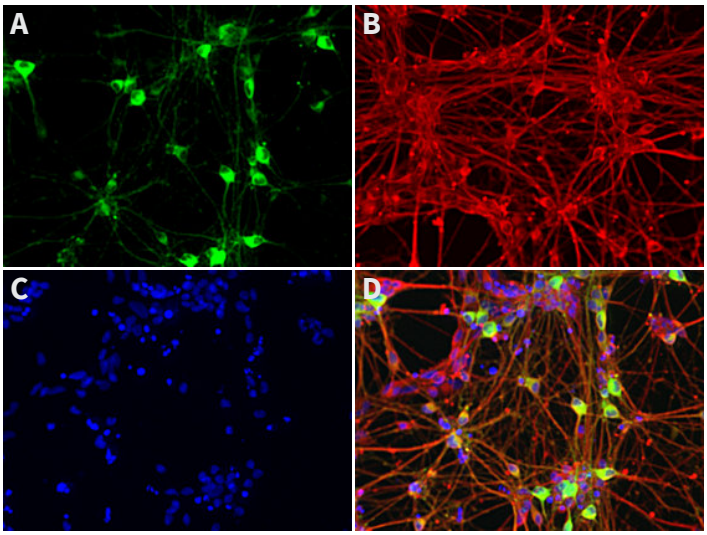

Figure 1: Parkinson's disease (PD) patient fibroblasts reprogrammed using REPROCELL's mRNA technology and differentiated to dopaminergic neurons. ***A****: TH (40-60%),* ***B****: TUJI (90%)* ***C****: DAPI* ***D****: Merge of TH, TUJ1 and DAPI*

Sensory Neurons

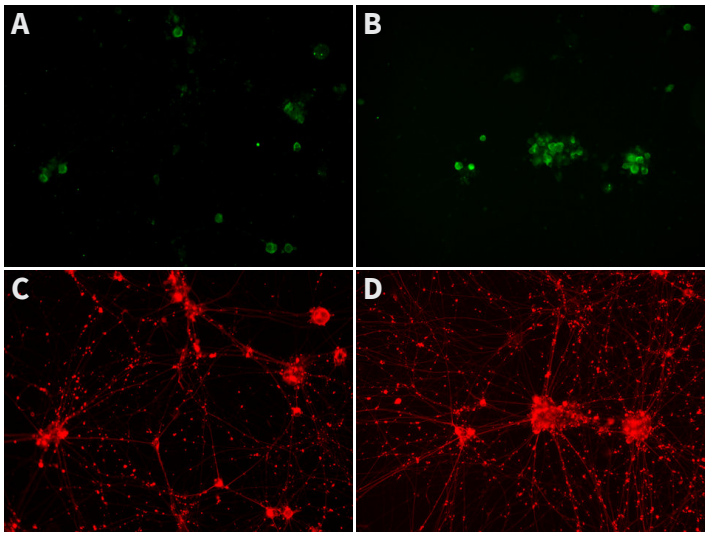

Figure 2: Our sensory neuron cultures express peripheral neuron markers and sensory neuron receptors just 4 weeks after thawing. ***A****: Nav1.8 (GFP),* ***B****: Nav1.7 (GFP),* ***C****/****D****: TUJI (Red).*

Motor Neurons

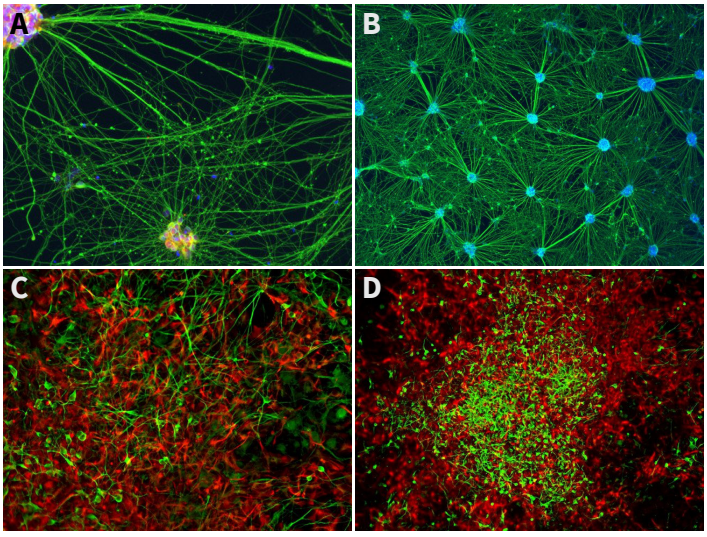

Figure 3: Our motor neurons fully mature 60 days after differentiation. ***A****/****B****: Typical expression of motor and general neuronal markers at 60 days of differentiation. TUJ1 (GFP), ChAT (red), DAPI.* ***C****/****D****: Co-culture of iPSC-derived astrocytes and iPSC-derived motor neurons. TUJ1 (GFP), GFAP (red).*

Astrocytes

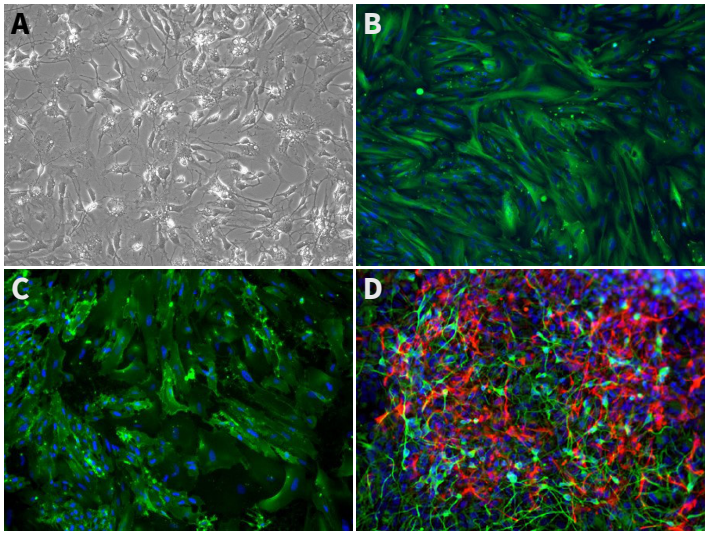

Figure 4: Our astrocytes at various stages of differentiation. ***A****: Cells exhibit large, highly cytoplasmic cell bodies just 24 days following incubation.* ***B****/****C****: Expression of astrocyte markers (****B****) GFAP and (****C****) CD44 is visible at 95 days* ***D****: Astrocytes cocultured with dopaminergic neurons. TUJI1 (GFP), GFAP (red), DAPI.*