

# HIGH-PURITY HUMAN NEURONS



BrainXell provides iPSC-derived human neurons to the pharmaceutical industry and other research organizations for CNS drug discovery and development. Utilizing proprietary technology developed over the last two decades by Professor Su-Chun Zhang at the University of Wisconsin-Madison, we generate subtype-specific neurons that rapidly mature. Additionally, custom neuron batches at small to very large scale can be produced from iPSC or ESC lines selected by the customer.

Cell Type Available	Neuronal Purity	Subtype Purity	Time to Mature	GFP <sup>1</sup>	Catalog #
Spinal Motor Neurons	>90%	>70%	5-10 days	+/-	BX-0100
Midbrain Dopaminergic Neurons	>50%	>35%	7-14 days	+/-	BX-0200
Cortical Glutamatergic Neurons	>90%	>70%	7-14 days	+/-	BX-0300
Cortical GABAergic Neurons	>90%	>70%	7-14 days	+/-	BX-0400
Mixed Cortical Neurons <sup>2</sup>	90%	80%/20%	7-14 days	+/-	BX-0500
Medium Spiny GABAergic Neurons	>90%	>70%	7-14 days	+/-	BX-0700
PV-Enriched GABAergic Neurons <sup>3</sup>	>90%	70%/15%	7-14 days	+/-	BX-0450
Layer V Glutamatergic Neurons	>90%	>70%	7-14 days	+/-	BX-0350
Spinal Astrocytes	-	>90%	-	-	BX-0650
Cortical Astrocytes	-	>90%	-	-	BX-0600

1. Each neuron subtype is available with or without a constitutive GFP reporter.
2. Cortical neurons are a mixture of 80% glutamatergic and 20% GABAergic neurons (other % possible).
3. PV-Enriched GABAergic Neurons are >70% GABAergic neurons and >15% of all cells are PV+.

## RAPID MATURATION

All neurons are supplied with proprietary, multi-component maturation supplements that allow most experiments to begin within one week.

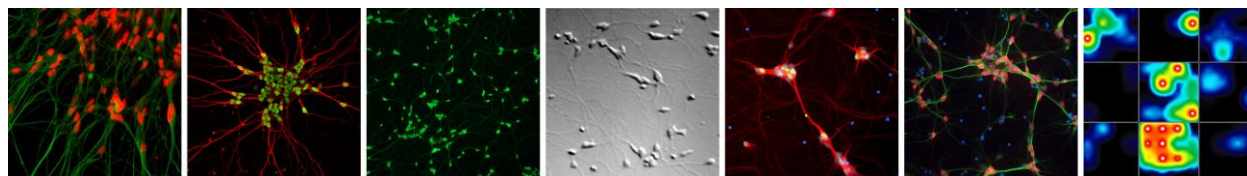
## CONTACT

To request a sample or inquire about a custom project, please email Product Manager Kurt Laha at [klaha@brainxell.com](mailto:klaha@brainxell.com).

## CUSTOM PROJECTS

A variety of custom projects are available using customer-supplied or biorepository-sourced iPSCs. For example, previous projects include:

- Batch of 400 million motor neurons produced from customer iPSC line with an ALS mutation
- Small batches of 25 million neurons from 10 different iPSC lines for line-to-line comparison
- Layer-specific cortical neurons



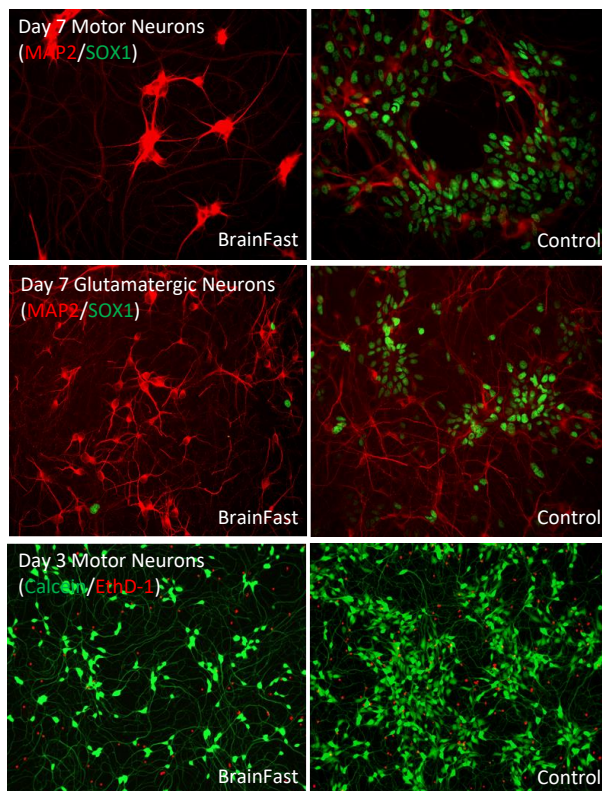
# BRAINFAST NEURONAL MATURATION SUPPLEMENT



BrainXell recently developed BrainFast, a medium supplement designed to accelerate neuronal maturation. This supplement ensures any late stage progenitors quickly become post-mitotic neurons and that these neurons rapidly mature.

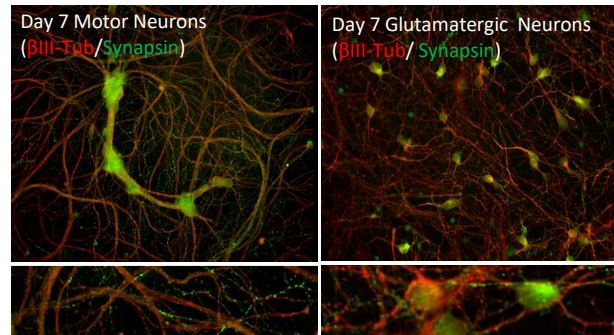
## EFFICIENT DIFFERENTIATION

Neuronal progenitors quickly and efficiently become neurons with use of BrainFast. As can be seen in the example below, virtually no SOX1+ progenitors remain after seven days whereas abundant MAP2+ neurons are present. The left column shows cells treated with BrainFast, and the right shows control cells.



## RAPID NEURONAL MATURATION

Neurons rapidly express mature markers within the first week and begin to display functional activity within ten days. As can be seen below, both spinal motor and cortical glutamatergic neurons express the pan-neuronal marker  $\beta$ -III-tubulin and the presynaptic marker synapsin.



## EASE OF USE

BrainFast can be used with early neurons derived from iPSCs or ESCs as well primary rodent neurons. The supplement is supplied at 1000X for easy addition to existing media recipes. Supplement is only needed on the seeding day and four days later. BrainFast is packaged as two 250  $\mu$ L vials, which is sufficient to treat at least 15 multi-well plates.

## CONTACT

To order or request additional information, please contact Kurt Laha at [klaha@brainxell.com](mailto:klaha@brainxell.com).

