



READY-2-GO NEURITE OUTGROWTH ASSAY SERVICE

BACKGROUND

A key aspect of neuronal development is the process of neurite outgrowth. Neurites, comprised of axons and dendrites, form the functional network by which neurons connect to enable signal transduction and proper development and differentiation. The ability of neurons to grow these networks determines their overall effectiveness at carrying out their functions, so the assessment of CNS-targeting, therapeutic candidates' impacts on neurite outgrowth is important to understanding their safety and toxicity in new or developing neurons.

THE CHALLENGE

Culturing neurons can be tricky. To obtain clean neurite data, the exact culture conditions must be determined – optimal neuron health must be maintained while not allowing the neurons to be so densely packed as to create untraceable neurites. Most *in vitro* assays use easier-to-handle cell types, such as rodent neurons or immortalized cell lines, but this presents hurdles to researchers getting repeatable, reliable, clinically translatable data.

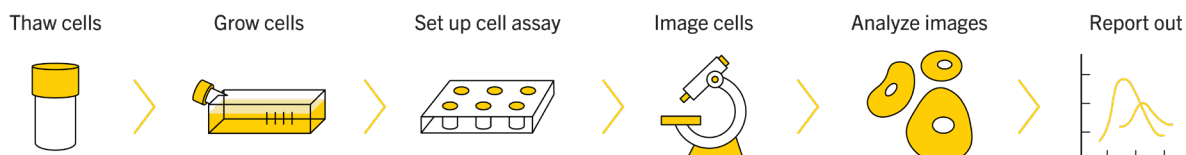
KEY FEATURES

- Uses human, iPSC-derived neurons
- Quantitative, morphological measurements of neurites and soma
- Only 4-6 weeks from assay to report
- Ability to bundle R2G assay services (*i.e.* R2G Neuronal MitoHealth, R2G Neurotoxicity Assay Services) or transition to more complex, bespoke assay services with the same service provider

THE SOLUTION

Our Ready-2-Go Neurite Outgrowth Assay Services use human, iPSC-derived, glutamatergic neurons (FUJIFILM CDI) in optimized culture conditions to assess your test articles' effects on neuronal development, as neurons are treated and neurite measurements are made shortly after cell seeding. The use of human iPSC-neurons helps bridge the gap between the bench to clinic.

PROCESS OVERVIEW

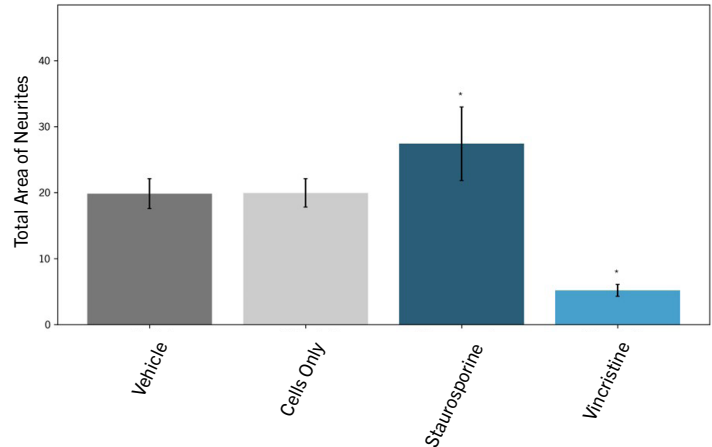
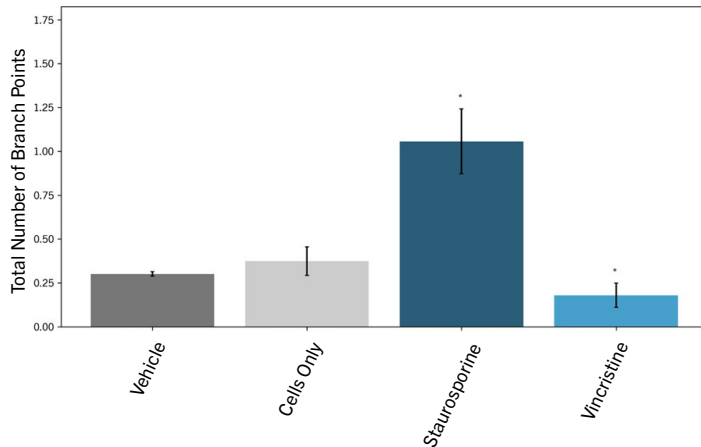
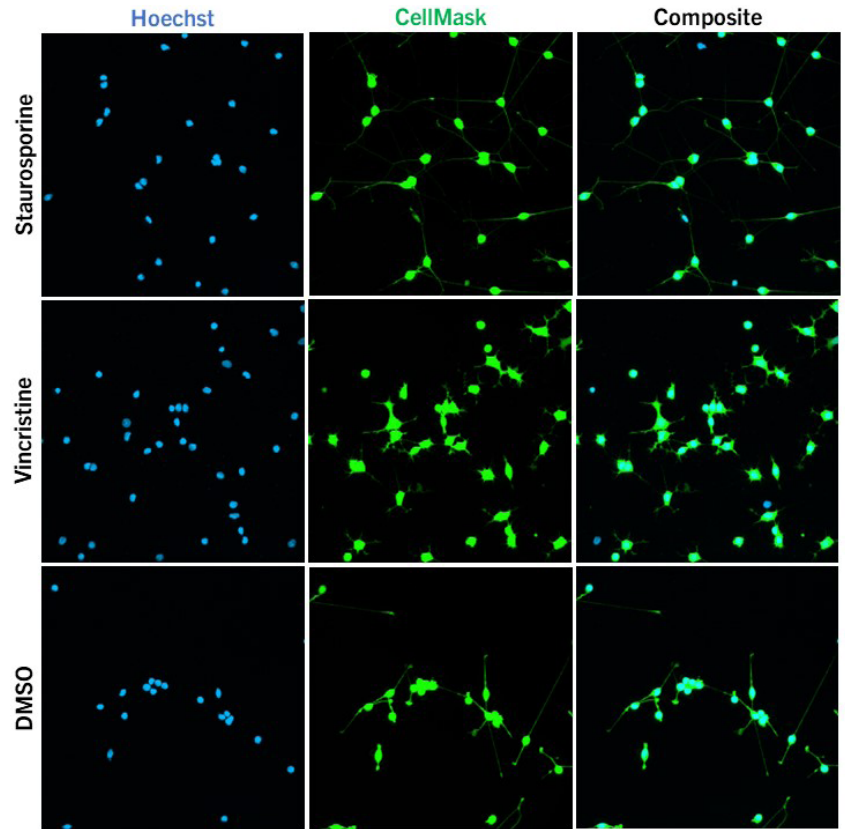


ASSAY OUTLINE

Human, iPSC-derived, glutamatergic neurons are cultured and treated with reference compounds alongside your test articles shortly after seeding. Cells are fixed and stained for imaging at various time points, and the images are analyzed and assessed for various neurite-outgrowth metrics to measure the effects of treatment with your test articles.

Representative Images: Neurons after treatment with DMSO (vehicle), vincristine, or staurosporine.

Quantitative analysis of images reveals increases in neurite outgrowth with staurosporine treatment and decreases with vincristine treatment. Statistical significance was calculated against vehicle.



Ready-2-Go Neurite Outgrowth	
Cells	Human, iPSC-derived, glutamatergic neurons
Markers	Nuclei, whole-cell staining
Dosing	6 doses of each of your test articles
Positive Controls	Vincristine (neurite-outgrowth inhibitor), staurosporine (neurite-outgrowth enhancer)
Negative Control	Vehicle(s)

