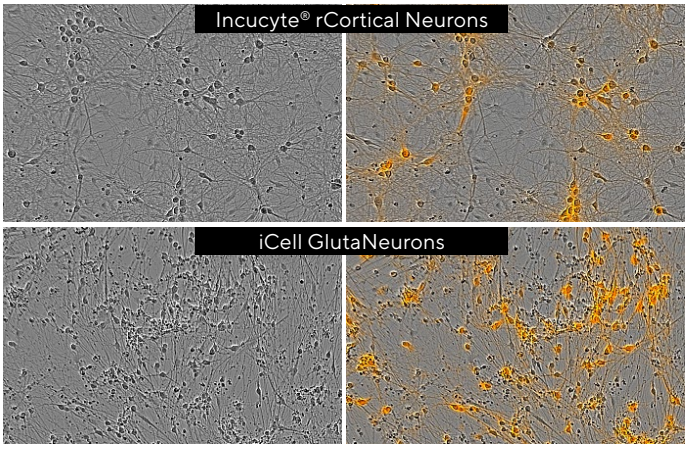
Neurite Dynamics and Neuronal Activity

Incucyte® novel, live-cell labeling reagents and purpose-built software quantify long-term changes in neurite dynamics and neuronal activity that enable continuous analysis of sensitive neuronal cell models.

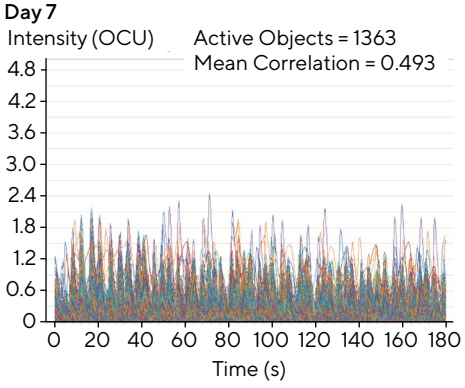
- Conduct long-term studies of neuronal function with novel, non-perturbing fluorescent reagents
- Capture transient events in your choice of cell model with non-invasive, repeated measurements of the same neuronal culture in physiologically relevant conditions
- Analyze relevant morphological and functional metrics using intuitive, purpose-built Incucyte® software

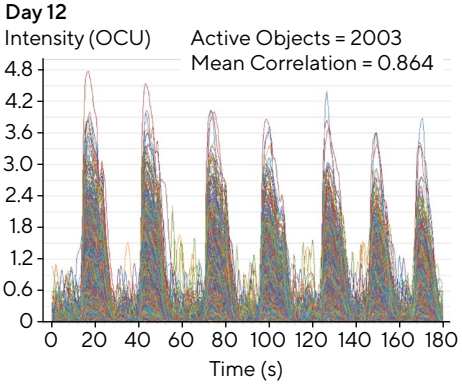
Application Spotlight: Neuronal Activity Assay

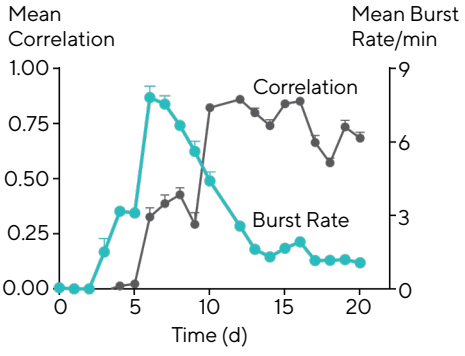
Access complex, neuronal activity and connectivity measurements from thousands of cells chronically to gain unprecedented functional insight into neuronal cell models using our novel Incucyte® Neuroburst Orange Lentivirus and Incucyte® Neuronal Activity Analysis Software Module.

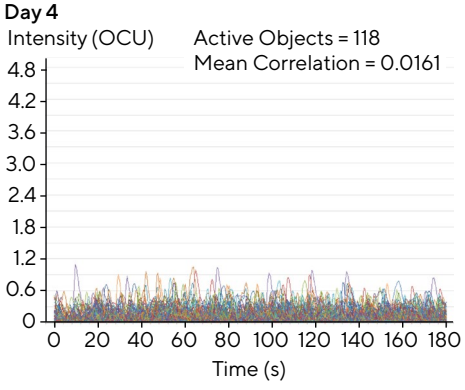


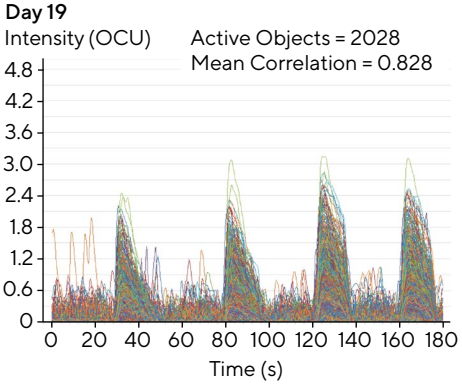
Incucyte® rCortical Neurons and iCell GlutaNeurons (Cellular Dynamics International) express the Incucyte® Neuroburst Orange Lentivirus, without perturbing the health and morphology of the cells.







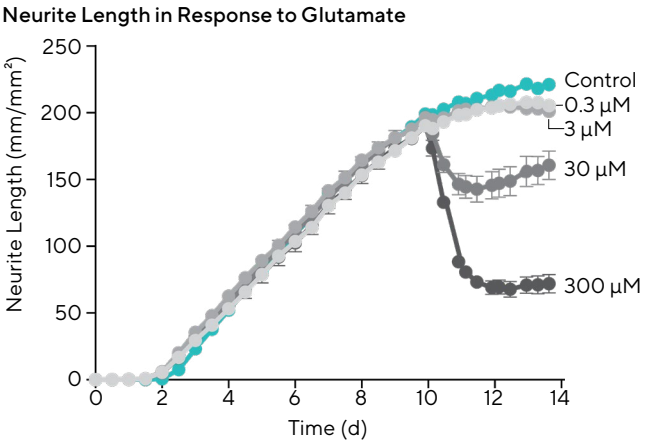




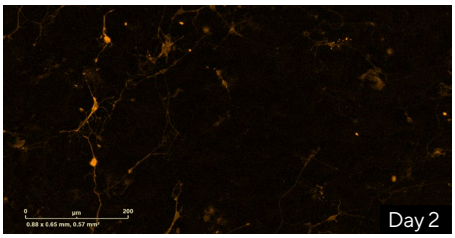
Kinetic quantification (graph above) of longitudinal, dynamic changes in neuronal activity (mean burst rate and mean correlation) of iCellGluta Neurons expressing Neuroburst Orange Lentivirus, showing changes over time during neuronal network maturation. Active object traces (corner traces) provide detailed insight into the dynamic changes in neuronal activity and connectivity for every acquired time point.

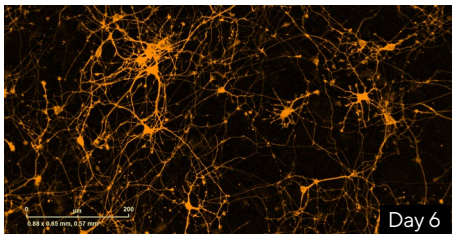
Application Spotlight: Neurite Dynamics Assay

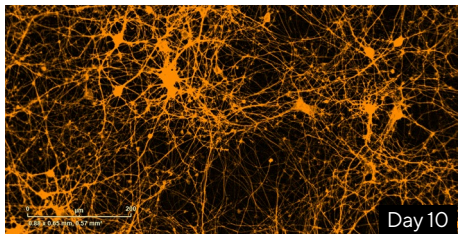
Generate kinetic, image-based and automated measurements using Incucyte® Neurotrack Analysis Software Module for continuous analysis of neurite outgrowth and stability—inside your incubator.



Incucyte® rCortical Neurons transduced with Incucyte® Neurolight Orange Lentivirus labeled cells cultured in the presence of Incucyte® rAstrocytes were treated with glutamate at Day 10. Time course analysis of orange fluorescence neurite length reveals concentration-dependent treatment effects.







Ordering Information

	Product	Description	Cat. No.	Instrument Compatibility
Neuronal Activity	Record activity from over a thousand cells to study changes in neuronal network activity and connectivity.			
Software	Purpose-built acquisition and analysis software for the detection of calcium oscillations in 96-well plates.			
	Incucyte® Neuronal Activity Analysis Software Module	1 module	9600-0032	SX5
Neuronal Activity Reagents	Fluorescently detect changes in activity using a novel genetically-encoded fluorescent calcium indicator.			
	Incucyte® Neuroburst Orange Lentivirus	One vial: 2 mL	4736	SX5
	Incucyte® Neuroactive Orange Kit	One kit	4761	SX5
Neurite Dynamics	Characterize neurite dynamics over time in mono- or co-culture models while assessing cell viability (refer to page 7, Annexin V Reagents)			
Software	Enables label-free or fluorescent analysis of neurite outgrowth, maturation and disruption in each well of a 96- or 384-well plate.			
	Incucyte® Neurotrack Analysis Software Module	1 module	9600-0010	SX5, S3, SX1
Neurite Labeling Reagents	Lentivirus reagents driven off a synapsin promoter provide homogenous expression of a fluorescent protein in target cells without altering cell function for live-cell quantification of neurite outgrowth.			
	Incucyte® Neurolight Orange Lentivirus	Two vials: 0.45 mL each	4808	SX5
	Incucyte® Neurolight Red Lentivirus	Two vials: 0.45 mL each	4807	SX5 (configured with Green/Red Optical Module), S3, SX1
	Incucyte® Neuroprime Orange Kit	One kit	4760	SX5
	Incucyte® Neuroprime Red Kit	One kit	4585	SX5 (configured with Green/Red Optical Module), S3, SX1
Neuronal Cells	Ready-to-use cryopreserved cells from the cortex of Sprague Dawley rats at Day 18 of gestation.			
	Incucyte® rCortical Neurons	One vial: 2 x 10^6 cells	4753	Assay dependent
	Incucyte® rAstrocytes	One vial: 2 x 10^6 cells	4586	Assay dependent