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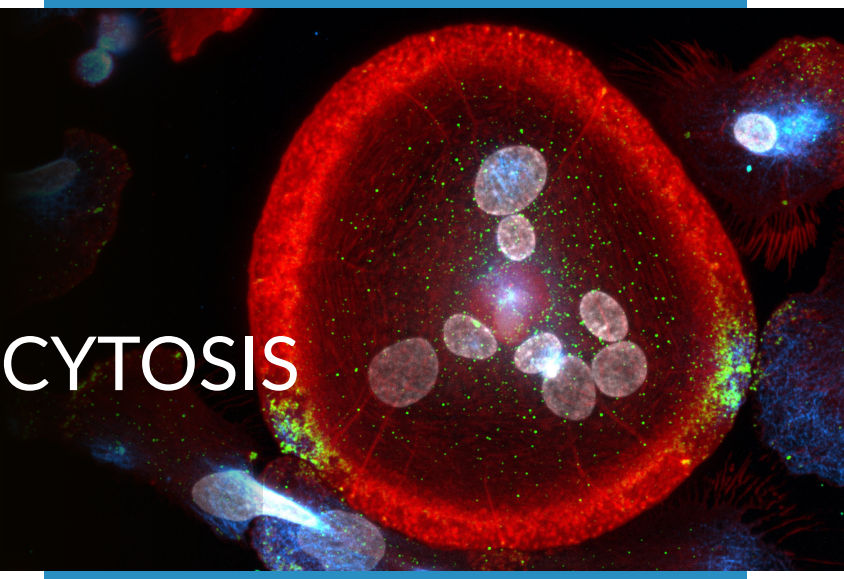


READY-2-GO MICROGLIA PHAGOCYTOSIS ASSAY SERVICE

BACKGROUND

Microglia are the immune-effector cells in the CNS that are activated in response to injury, neurodegeneration, and infection. One major function of these cells is phagocytosis of potential threats, such as pathogens. The implication of the varied and numerous roles of microglia are becoming clearer in neurodegenerative diseases, such as Alzheimer's disease, in which prolonged activation of microglia leads to neuronal death.

KEY FEATURES

- Uses wild-type or TREM2-mutant, human, iPSC-derived microglia
- Quantitative, live-cell and endpoint measurements of phagocytosis
- Only 4-6 weeks from assay to report
- Ability to bundle R2G assay services or transition to more complex, bespoke assay services with the same service provider

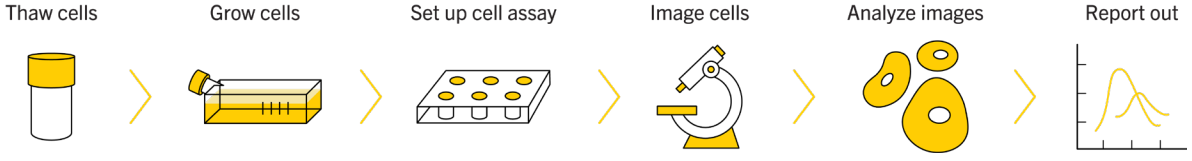
THE CHALLENGE

Identifying therapeutics that can modulate microglial activity remains a promising avenue for drug development, but these efforts are stymied by the unavailability of scalable, reliable, *in vitro* models with which to screen candidates. Most assays use rodent-derived or immortalized microglial models that do not mirror human biology. Some assays use primary microglia, but sufficient cells are difficult to isolate and, when isolated, are largely already activated.

THE SOLUTION

Our Ready-2-Go Microglia Phagocytosis Assay Service measures the uptake of bacterial bioparticles by human, iPSC-derived microglia (FUJIFILM CDI). These iPSC-microglia afford reproducible results and can be scaled up to medium- or high-throughput formats for screening compounds. To incorporate further Alzheimer's disease relevance into this assay offering, you can choose between wild-type, TREM2-homozygous, or TREM2-heterozygous cells.

PROCESS OVERVIEW



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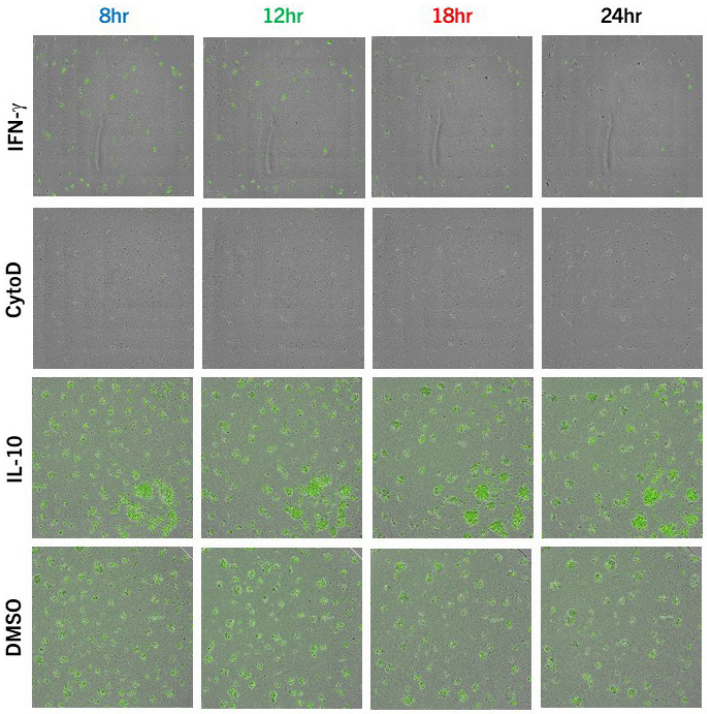
ASSAY OUTLINE

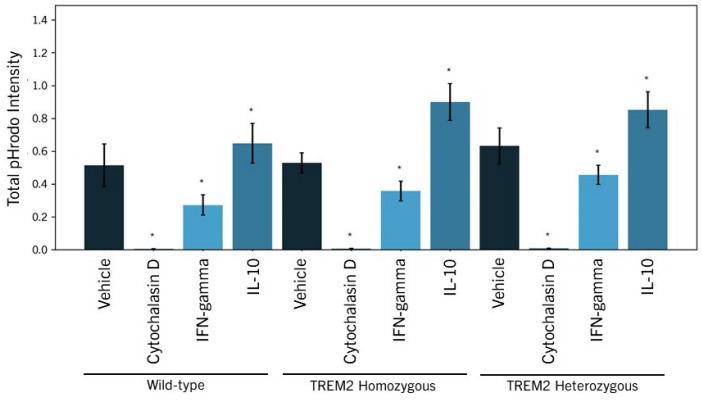
Human, iPSC-derived microglia are seeded and treated with reference compounds that promote or inhibit activation of phagocytosis alongside your test articles. Bacterial bioparticles that fluoresce upon cellular uptake are added to the culture, and fluorescence is measured every hour for 24 hours. Cells are also fixed and imaged at 24hrs to provide you both time-lapsed and endpoint assessments of your compounds' effects on microglial phagocytosis.

Representative Images: Phagocytosis of fluorescent bacterial particles by iPSC-microglia after treatment with DMSO (vehicle), IL-10, cytochalasin D, or IFN-γ.

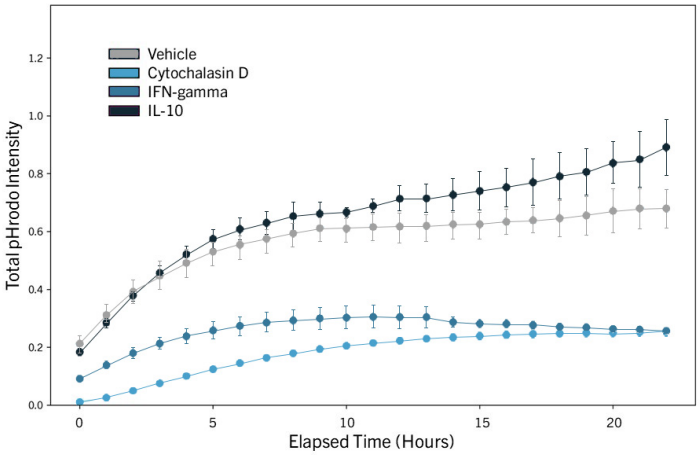
Quantitative analysis reveals increased phagocytosis with IL-10 treatment and decreased phagocytosis with cytochalasin D or IFN-γ treatment. Statistical significance was calculated against vehicle.

Wild-type Human, iPSC-derived Microglia:





Wild-type Microglia:



	Ready-2-Go Microglia Phagocytosis
Cells	Choice of wild-type, TREM2-homozygous, or TREM2-heterozygous, human, iPSC-derived microglia
Markers	Uptake of fluorescent bacterial bioparticles
Dosing	6 doses of each of your test articles
Positive Controls	Cytochalasin D (inhibitor), IFN-γ (inhibitor), IL-10 (enhancer)
Negative Control	Vehicle(s)