

Ncyte Astrocyte Kit II

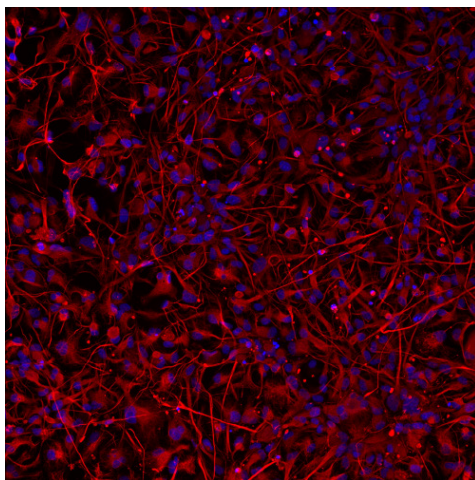
Human iPSC- derived astrocytes

Key benefits versus Ncyte Astrocyte Kit I

Increased compatibility with Ncyte cortical neurons for co-culturing

Significant better performance in neuro-inflammatory disease modeling

Identity markers remain unchanged



Product description

Recently, astrocytes have been gaining recognition as essential players for information processing in the brain as well as other various roles, including neuronal homeostasis and synaptic plasticity. Additionally, increasing data support the role of astrocytes in disease progression, including neurodegenerative diseases such as Alzheimer's disease and Parkinson's disease.

Human iPSC-derived astrocytes provide a valuable tool for drug discovery and disease modeling purposes. This 2nd generation of the Ncyte Astrocyte Kit is created to increase the astrocytes' performance in 2 key applications: co-culturing with hiPSC-derived neurons and display of neuro-inflammatory phenotypes. The astrocytes are derived from the same donor as for the Ncyte Astrocyte Kit I, plus their key identity markers remain unchanged.

Identity of key markers remain unchanged

The identity of the Ncyte Astrocyte Kit, measured using selective astrocyte protein markers GFAP and s100b, is not affected with the optimization to Ncyte Astrocyte Kit II.

	GFAP	s100b	Ki67
Batch 1			
60507 Ncyte I PLO/Lam (day 7)	96,92	37,17	12,76
60507 Ncyte II PLO/Lam (day 7)	99,86	46,99	14,79
Batch 2			
60508 Ncyte I PLO/Lam (day 7)	96,43	87,74	16,30
60508 Ncyte II PLO/Lam (day 7)	97,66	93,4	22,11
Batch 3			
60510 Ncyte I PLO/Lam (day 7)	97,57	91,4	17,05
60510 Ncyte II PLO/Lam (day 7)	98,02	86,49	26,47

Fig. 1

Ncyte Astrocyte Kit II shows comparable quantities of selective astrocyte protein markers GFAP and s100b as Kit I, as tested among 3 Ncyte Astrocyte kit batches.

Increased compatibility with Ncyte cortical neurons for co-culturing

Allowing long-term studies and physiologically relevant disease modelling. As shown in figure A, the Ncyte Astrocyte Kit II shows a superior performance in the cells' ability to take up glutamate. This demonstrates an important characteristic of mature astrocytes that enable translational studies of hiPSC-derived neurons.

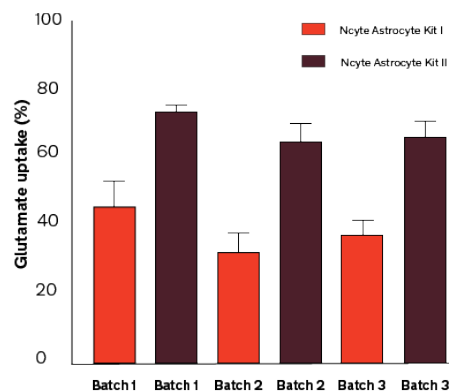


Fig. 2

3 batches of Ncyte Astrocyte Kit I and II were tested and compared. Ncyte Astrocyte Kit II shows a significantly higher glutamate uptake, compared to Ncyte Astrocyte Kit I.

Significant better performance in neuro-inflammatory disease modeling

Ncyte Astrocyte Kit II is significantly more suitable for pro-inflammatory assays, compared to Astrocyte Kit I. This is demonstrated by an induced cellular response upon treatment with a pro-inflammatory cocktail consisting of IL-1Beta and TNFalpha to test for their ability to display an A1 type phenotype.

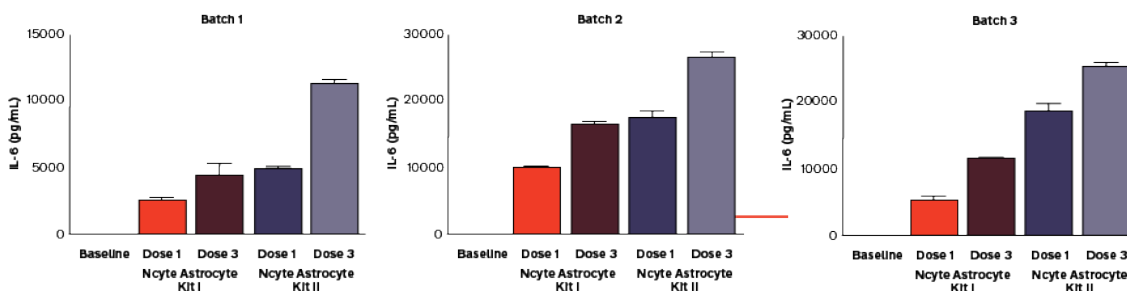


Fig. 3 3 batches of Astrocyte Kit I and II were tested and compared in their ability to display an A1 type phenotype. This phenotype was measured by quantification of IL-6 in the supernatant of the cells.

Ncyte Astrocyte Kit II – Product Specifications

Kit contents	2M cryopreserved Ncyte Astrocyte cells 250 mL Ncyte Neuronal Medium 2 vials of 1.5 mL Ncyte Astrocyte Supplement
Key biomarkers	GFAP, S100b and AQP4
Identity	≥ 70% GFAP-positive cells at Day 10
Functionality	≤ 300% proliferation at Day 10
Assay window	Day 7 to 21 post-thaw
Recommended storage	Ncyte Astrocyte cells: liquid nitrogen Ncyte Neuro Basal Medium A: 4°C Ncyte Astrocyte Supplement: -80°C Day 7 to 21 post-thaw

Validated assays and protocols

The Ncyte Astrocytes can be used for a variety of validated assays on dedicated platforms that can be implemented in drug discovery and development for safety and efficacy evaluation of novel compounds:

- General neuroscience research (e.g. CNS functionality, neurogenesis, homeostasis, metabolic studies)
- Astrocyte-mediated neurotoxicity
- Neuro-protection assays
- Inflammation assays
- Disease modeling (e.g. neurodegenerative diseases)
- Tissue modeling

Ncardia offers customized services, including electrophysiological and toxicology applications as well as disease modeling and assay development. At every stage of your drug discovery project - whether it is target identification, lead finding, or safety assessment - we work together with you to accelerate your research and successfully bring your project to the next stage.

Get in contact with us

Our experienced scientists are happy to work with you in order to understand your needs and meet your objectives. Contact us to discuss your project plans, and co-develop a solution that fits your specifications. We will contact you as soon as possible.

Contact us

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