



#02

Cell painting for neuronal toxicity assessment



EXPECTED DELIVERABLE

Indicative duration: 6 – 9 months

Development of a human model (hIPS based) for neurotoxicity assessment of therapeutic compound. Use Cell painting analysis including different marker (Nucleus, ER, Mitochondria, Golgi & plasma membrane, neuronal marker) to evaluate neurotoxicity. Markers and staining to be evaluated to fit feasibility.

Expected read out: Population-level cell analysis including measurements of cell count, Neuronal metrics like neurite length, number of branchpoints, area etc. based on neuronal staining, mitochondrial number, intensity, size and mitotracker, global analysis of proprietary test and reference molecules may include UMAPs, plus additional population and cell-level measurements as appropriate. This list is non-exhaustive and can be modulated according to capabilities.

Additional Information:

- Preference for partners with demonstrated experience in fluorescent microscopy.
- Ability to work with human neuronal cell culture (preferably with hIPS derived neurons)
- Ethical and regulatory considerations
- Partners should ensure compliance with ethical sourcing of human tissues (biobanks, patient-derived organoids, iPSC) and provide documentation when required



LONG-TERM COLLABORATION POTENTIAL

Subject to scientific and strategic alignment

This assay could be used to evaluate possible neurotoxic effect of new Ipsen compounds early in the safety risk assessment. If the model works well, it could also be interesting to develop this assay for efficacy assessment using pathologic cell model mimicking neurodegenerative diseases. IPSEN will be strongly interested in a long-term collaboration to develop such models.



CANDIDATE SELECTION

Initial eligibility check by MPR. Final selection by the challenge provider.



Completion of EDUCATE

Core Module



Company status

SME under EU criteria



Maximum number of supported companies

1 – 3



Minimum required TRL

UMAP analysis capabilities
Automatize microscopy
Culture of human neurons
(hIPS derived neurons)



Confidentiality
NDA/ CDA required

Yes

Selection by the challenge provider based on fit, relevance, readiness and innovation potential.

Additional selection criteria



Geographic area

SME from across EU are welcome.
SMEs from Interreg NEW are prioritized, particularly partner regions



APPLICATION

Application directly via the STEP4NAMs Moodle platform



<https://step4nams.moodlecloud.com/>



Scan the QR code to learn more about the STEP4NAMs training programme



SUPPORT



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