PhD Course | Sep 22 - 26, 2025

Induced Pluripotent Stem Cell, Gene-editing and Brain Cell Models

Location: UCPH Frederiksberg Campus

This course is an opportunity for you to get hands on experience in handling induced pluripotent stem cells as well as differentiating those into neural and glial cells. Moreover, you will learn how to repair or knock in single nucleotides using CRISPR-Cas9 in practice and theory and gain experience with growing 3D retinal organoids. In addition to the practical learning experience, you will get all the theoretical background as well as invited keynote lectures by experts in the field.

SKILLS ACQUIRED AFTER THE COURSE

- Freeze and thaw human induced pluripotent stem cells
- Maintain and expand human induced pluripotent stem cells
- Generate iPSC via electroporation of episomal plasmids
- Differentiate human induced pluripotent stem cells into astrocytes, microglia and cortical neurons
- Generate 3D cultures
- Analyse induced pluripotent stem cell-derived neural cells using different molecular methodologies
- Design CRISPR guides and templates for gene-editing of pluripotent stem cells
- Perform nucleofection based CRISPR-Cas9 gene editing

4.2 ECTS CREDITS

KNOWLEDGE ACQUIRED AFTER THE COURSE

✓ Derivation of pluripotent stem cells
✓ Understanding of the states of pluripotency
✓ Understanding the early neural developmental processes
✓ Latest protocols for differentiation of iPSC into neural subtypes – astrocytes and microglia
✓ State of the art knowledge of methods for culturing and differentiating pluripotent stem cells
✓ Expertise on use and application of CRISPRS in gene-editing of pluripotent stem cells

Application Deadline Aug 25, 2025

For more information and registration scan:

Course Director

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