FEB 14th 2023 | 4:00PM CET VIRTUAL

iPSZÜRICH

A Lecture Series Focused on Induced Pluripotent Stem Cells

Universiteit Leiden

Prof. Micha Drukker, PhD

Leiden Academic Center for Drug Research (LACDR)

Leiden University, Netherlands

PERSPECTIVES ON THE IMMUNOLOGICAL ASSESSMENT OF AUTOLOGOUS, HOMOZYGOUS, AND HYPOIMMUNOGENIC iPSCs

The question of immune tolerance or immunosuppression for management of tissue rejection in stem cell medicine has a significant impact on safety and efficacy in the long run. “Off-the-shelf” induced/embryonic pluripotent stem cell (i/ePSCs) derived grafts such as islet-like beta cells is a pragmatic solution for manufacturing reasonably priced ATMPs (advanced therapy medicinal products) and making them readily available. Different approaches have been purposed to reduce the inherent tissue antigen incompatibility of such ATMPs, including immunological tweaking by genetic engineering, and production of so called i/ePSCs haplobanks. However, immunological stealthing is not without a risk, and is not applicable for cell types where histocompatibility antigens are functionally important. Also, realistically, haplobanks are a partial solution, and will warrant some degree of tissue rejection management 1,2. The lecture will discuss these topics in the context of emerging safety assessment strategies for i/ePSC therapies, and prospects for autologous iPSC treatments upon advancement of manufacturing technologies.

University of Zurich[UZH] | UNIVERSITÄTS-KINDERSPITAL ZÜRICH | ETH zürich | Institute for Regenerative Medicine • IREM