



京都大学
KYOTO UNIVERSITY

SEMINAR

March 12th, 2025

10:00 – 11:00 @ Seminar Room a5 (a1S02) & Zoom

Retinal Organoid Research: Disease Modeling and Steps Toward Vascularized *In Vitro* Retinas

Dr. Rosalia Tsikandelova

Postdoctoral Research Associate

Newcastle University, UK

<http://www.retinalstemcellresearch.co.uk/>

Abstract:

This talk will showcase recent advancements in retinal organoid research from the Lako lab, emphasizing their role as a powerful tool for disease modeling. It will highlight previous work on *DRAM2*-associated cone-rod dystrophy, detailing how patient-derived retinal organoids have been instrumental in uncovering disease mechanisms. Additionally, the presentation will discuss the lab's ongoing efforts in pioneering the generation of vascularized in vitro retinas, marking a crucial step toward enhancing the physiological relevance of retinal organoid models for translational applications.

Biosketch:

Dr. Rosalia Tsikandelova is a postdoctoral research associate at Newcastle University. With over four years in stem cell research and genetic engineering, her journey at the Lako lab began by unravelling the disease mechanisms of a rare form of cone-rod dystrophy (CORD21) caused by mutations in the *DRAM2* gene using patient-specific iPSC retinal models. Her extensive expertise with CRISPR-Cas9 enabled her to contribute to the generation of immune-evasive embryonic stem cells to be used as a transplantable source for the restoration of eyesight in an ongoing proof-of-concept study. She is currently exploring different approaches for the generation of vascularized retinal organoids which more closely recapitulate the complexity of native retinal biology.

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