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Optimization of embryonic kidney organotypic renal organoid culture to study nepron development from individual cells to functional unit

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Mammalian embryonic kidneys and renal organoids can be cultured *ex vivo* to study different aspects of early nephrogenesis and applied as a model to analyse the origin of different congenital diseases (CACUT for example). In our laboratory we have earlier developed an experimental system where embryonic kidney cells can be dissociated, sorted (to exclude or add specific cell populations), genetically modified and reaggregated to form renal organoids. We will present our recent data concerning re-vascularisation of renal explants and organoids, optimization of imaging methods and comparison of several methods of genetical transformation of primary embryonic kidney cells to analyse the process of nephrogenesis and establishing of functional renal unit *in vitro*.

Biography

Ilya Skovorodkin has completed his PhD from Institute of Cytology, Academy of Sciences of Russia in St.-Petresburg. After Post-doctoral studies from Tuebingen University (Germany) he is working as Senior Research Fellow in Laboratory of Developmental Biology, Oulu Center for Cell-Matrix Research, University of Oulu (Finland) under supervision of Professor Seppo Vainio. He has published 36 papers in reputed journals.

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