

BDR SEMINAR (Kobe & online hybrid)

Pierre Vanderhaegen

VIB Center for Brain & Disease Research, Department of Neurosciences, KU Leuven, Belgium

Tuesday, October 25, 2022

14:00-15:00

1F Auditorium, DB Building C, Kobe / Broadcast online via Zoom

Zoom meeting URL will be announced on the event day by e-mail.

※Non-BDR members: Please register from the following link.

<https://krs1.riken.jp/m/bdrseminarregistration> (Registration deadline: Oct 23)

Timing mechanisms linking development and evolution of the human brain

Summary

Dr. Pierre Vanderhaeghen has been studying brain development and maturation, especially with a deep interest on brain evolution toward humans. He is a pioneer of *in vitro* corticogenesis from embryonic stem cells (ES cells). He demonstrated that neural stem cells derived from human ES cells have an intrinsic ability to produce diverse neurons *in vitro* in the same birth order as they are born *in vivo*, and showed these neurons were functional by grafting experiments, opening new avenues to apply ES cell technology to both basic and applied neuroscience fields (Nature 2008).

Recently, his group identified a human-specific isoform of Notch2, NOTCH2NL which may contribute to the explosive cortical expansion during the differential evolution from the ancestral species of hominins to humans and chimpanzees (Cell 2018). More recently, his group discovered that mitochondria dynamics and metabolism play critical roles in the fate decision of self-renewal vs. differentiation. This occurs during a timing that is doubled in humans, emphasizing the importance of the postmitotic period on fate plasticity and a longer period of neuronal maturation (Science 2020).

Currently, his group is extensively exploring mechanisms underlying the extension of developmental timing in human neural development, especially focusing on the impacts of mitochondria metabolism and the relevant factors.

I strongly encourage you to join his BDR seminar on site.



RIKEN Center for Biosystems Dynamics Research (BDR)

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