NEURO GLOBAL
Seminar

Date & Time

Thursday, February 12, 2026
17:00~18:30

Speaker

Professor Jin-Wu Tsai (蔡金吾)

Secretary General, National Yangming Chiaotung University
Director, Advanced Therapeutics Research Center
Distinguished Professor, Institute of Brain Science
Adjunct Professor, Department of Biological Science and Technology

Title

Transcriptional Control of Cortical Development: Lessons from FOXG1 and FOXJ3

Venue

Auditorium, School of Medicine Building 6 (Megabank) , 1 F/ Seiryo Campus
医学部６号館 (メガバンク)1階 講堂 星陵キャンパス【B08】
【MAP】 https://www.tohoku.ac.jp/map/en/?f=SR_B08

Format

On-site ONLY

Registration Please contact NGP Office (neuroglobal@grp.tohoku.ac.jp)

Related Website https://bml.lab.nycu.edu.tw/ibs/brain/TsaiLab/

●Neuro Globalプログラム生 (Neuro Global Program Students)
【脳科学セミナーシリーズEx】/【先進脳科学セミナーシリーズEx】セミナー 1ポイント
【Brain Science Seminar Series Ex】/【Advanced brain science seminar series Ex】 1 point
●医学系研究科(Graduate School of Medicine)
【医学履修課程】国際交流セミナー (アドバンスド講義科目)」 出席1回分
【Medical Science Doctoral Course】 International Interchange Seminar (Advanced Lecture course) 1 attendance
●生命科学研究科(Graduate School of Life Sciences)
【単位認定セミナー】 【イノベーションセミナー（留学生対象）】 2ポイント
【Credit-granted seminar】【Innovation seminar (For international students)】 2 points

東北大学 Neuro Global 国際共同大学院プログラム事務局
neuroglobal@grp.tohoku.ac.jp
http://www.neuroglobal.tohoku.ac.jp

NEURO GLOBAL
Tohoku University

NEURO GLOBAL
Seminar

Title

Transcriptional Control of Cortical Development: Lessons from FOXG1 and FOXJ3

Abstract

Transcriptional regulation is fundamental to cortical development, governing the balance between neural progenitor proliferation, neuronal differentiation, and circuit assembly. Disruption of these programs is a major driver of neurodevelopmental disorders, including developmental epilepsies. In this talk, I will present our recent work elucidating how epilepsy-associated variants in the transcription factors FOXG1 and FOXJ3 perturb cortical development and contribute to epileptogenesis. Through integrative analyses combining human genetics, in vivo developmental models, and functional assays, we demonstrate that pathogenic FOXG1 and FOXJ3 variants dysregulate transcriptional networks controlling progenitor cell dynamics, neuronal migration, and cortical lamination. In particular, our findings identify FOXJ3 as a key upstream regulator of PTEN-associated signaling, linking transcriptional control to PI3K-AKT/mTOR pathway activity during corticogenesis. These mechanistic insights illustrate how gene-specific transcriptional defects shape distinct developmental trajectories toward epilepsy and highlight the importance of developmental context in advancing precision diagnosis and therapeutic strategies for genetic epilepsies.

東北大学 Neuro Global 国際共同大学院プログラム事務局
neuroglobal@grp.tohoku.ac.jp
http://www.neuroglobal.tohoku.ac.jp

NEURO GLOBAL
Tohoku University