ASHBi SEMINAR

HNF1B plays a crucial role in renal tubular cell homeostasis and CKD

Lecturer: Prof. Marco Pontoglio, Ph.D.

Director of Research, Institut Necker Enfants Malades, CNRS

Date Monday, 6 April 2026

Time 17:00 – 18:00 [JST]

Venue Conference Room / Zoom Hybrid*

B1F, Faculty of Medicine Bldg. B

Register here

Abstract

Hepatocyte Nuclear Factor 1 Beta (HNF1B) is a key transcription factor required for kidney development and epithelial differentiation. Heterozygous mutations in HNF1B cause developmental dysfunctions including CAKUT and ADTKD. However, the function played by HNF1B in the normal adult kidney is still poorly understood. Our recent studies showed that HNF1B plays an essential role in maintaining renal tubular homeostasis. Using inducible mouse models, we show that adult postnatal loss of HNF1B rapidly leads to severe chronic kidney disease. Transcriptomic analyses reveal an early transcriptional program controlled by HNF1B that precedes the appearance of histological lesions and defines a molecular signature of tubular integrity. This signature is reduced in several non-genetic models of CKD, and in a large cohort of CKD patients, suggesting that impaired HNF1B activity may represent a convergent pathway in kidney disease progression. These findings support the existence of a pathogenic vicious circle in which kidney injury leads to reduced HNF1B activity, which in turn further compromises tubular integrity and accelerates CKD progression.

Organizer : Institute for the Advanced Study of Human Biology (WPI-ASHBi), Kyoto University

Contact: Prof. Motoko Yanagita

E-mail: ashbi-event@mail2.adm.kyoto-u.ac.jp