NUS National University of Singapore | Department of Biological Sciences, Faculty of Science

ON-SITE BIOLOGY COLLOQUIUM

Friday, 16 Jan 2026 | 4 pm | S3 05-02 Conference Room 1

Hosted by Prof Yu Hao

Map to Block S3

Control of plant growth by N6-methyladenosine in mRNA

By **Peter Brodersen**

University of Copenhagen, Department of Biology, Denmark

Covalent modification of RNA nucleotides is fundamental for the function of the central RNA-protein complexes operating in the processing of genetic information, such as ribosomes and spliceosomes. Recently, N6-methylation of adenosine (m6A) in mRNA has attracted substantial attention because of its essential biological functions across many eukaryotic organisms, including mammals and higher plants.

The presence of m6A in mRNA creates a binding site for proteins harbouring a so-called YT521-B Homology (YTH) domain, and YTH-domain family (YTHDF) proteins mediate many biological m6A functions. Plants encode multiple YTHDF proteins, and it is now a topic of outstanding interest in plant biology, and eukaryotic biology more broadly, to define the functions of these RNA-binding proteins, including their mechanisms of action.

I will present our progress on understanding how m6A-YTHDF controls plant growth, with a particular emphasis on the emerging importance of combinatorial control of mRNA properties via multiple mRNA-binding proteins.

About the Speaker

He established his own group in 2011 at the University of Copenhagen where he has held a full professorship in RNA biology since 2020. His research focuses on post-transcriptional gene regulation mediated by small silencing RNA and covalent RNA modifications. His group has made several contributions to define fundamental molecular properties of the central players of RNA interference (RNAi), the ARGONAUTE proteins, including how they mediate amplification of small interfering RNAs in RNAi. More recently, his group has driven progress on defining biological roles of cytoplasmic N6-methyladenosine-binding YTHDF proteins in plant growth, and on deciphering the molecular mechanisms underlying these functions.