241st WPI-IIIS Seminar

New Insights on the Origin and Mechanism of Eukaryotic Clocks

All living things keep time through internal “circadian clocks” that align biological activity with the day–night cycle. Our recent study identifies a long-missing common link in these clocks: a slow-acting enzyme called RUVBL2. Found in organisms from fungi to humans, RUVBL2 uses ATP at an extremely low rate to help set the body’s 24-hour rhythm. Mutations in RUVBL2 alter biological timing across species, revealing that a shared, energy-efficient molecular mechanism underlies circadian rhythms throughout eukaryotic life. Thus, a “slow ATPase plus conventional transcriptional feedback loop” model may be a common logic for the circadian rhythms in both prokaryotes and eukaryotes.

Dr. Eric Erquan Zhang

National Institute of Biological Sciences, Beijing

Date: **Tuesday, November 25, 2025**
Time: **11:30 – 12:30**
Venue: **1F Auditorium, IIIS Building**

*On-site participation only

IIIS
INTERNATIONAL INSTITUTE FOR INTEGRATIVE SLEEP MEDICINE

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MOONSHOT RESEARCH & DEVELOPMENT PROGRAM

Contact: International Institute for Integrative Sleep Medicine, University of Tsukuba
029-853-5857 (ext.5857) | wpi-iiis-alliance@ml.cc.tsukuba.ac.jp