

IMB SEMINAR

DR YE TIAN

INSTITUTE OF GENETICS AND DEVELOPMENTAL BIOLOGY,
CHINESE ACADEMY OF SCIENCES (CAS), BEIJING, CHINA

“**Integrating Mitochondrial Resilience:
From Subcellular Stress Signaling to
Systemic Aging**”

13 AUGUST 2026

12:00

The seminar will take place in IMB's Seminar Room.

All are welcome to attend.

Host: Dr Siyao Wang, IMB

For further information, please contact IMB Communications & Events Office: events@imb.de

“ **INTEGRATING MITOCHONDRIAL RESILIENCE: FROM SUBCELLULAR STRESS SIGNALING TO SYSTEMIC AGING**

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Mitochondria are not only metabolic organelles but also critical signaling hubs that sense cellular perturbations and coordinate adaptive stress responses. My laboratory investigates how mitochondrial dysfunction is detected and communicated across biological scales, from subcellular organelle remodeling to organismal physiology and aging.

In this talk, I will present our recent findings identifying mitochondrial superoxide as a retrograde signal that preserves nuclear envelope integrity through the regulation of lipid metabolism. I will then discuss how localized mitochondrial stress responses can be integrated at the organismal level to influence systemic homeostasis, stress resistance, and longevity.

By linking organelle-level signaling with whole-animal physiology, our work provides new insights into how mitochondrial resilience is established and maintained during aging, and how enhancing such resilience may help delay age-related functional decline.

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Dr. Ye Tian earned her B.S. degree in Biotechnology from Beijing Normal University in 2005, followed by a Ph.D. degree in Biochemistry and Molecular Biology from a joint program of Beijing Normal University and the National Institute of Biological Sciences, Beijing in 2010. Her academic journey continued with postdoctoral training at the Salk Institute and the University of California, Berkeley from 2010 to 2016. In 2016, she assumed the role of Principal Investigator at the Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, Beijing.



Her research focuses on the regulatory mechanisms of mitochondrial stress and aging, resulting in several achievements. These include the discovery that neuronal mitochondria can transmit "stress memory" across generations by increasing mitochondrial DNA copy numbers in germ cells, enhancing offspring stress resistance and lifespan. Additionally, her work identified various cross-tissue mitochondrial signal exchanges influencing overall metabolism and aging. Furthermore, she uncovered the role of mitochondrial metabolites in regulating aging through epigenetic factors, providing a theoretical foundation for targeting metabolites to mitigate aging.

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