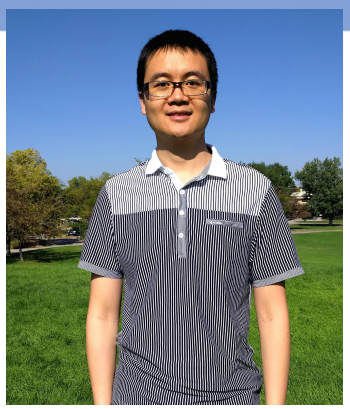
同济大学 TONGJI UNIVERSITY

Roles of fat metabolism in reproductive development and maintenance of muscle integrity



报告人：唐鸿云 博士

主持人：张超 教授

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地点：医学楼 1102 室

Research focus

Fat metabolism abnormality causes defective development and various degenerative diseases and my study are mainly focused on elucidating the related molecular mechanism underlying these processes by using *C. elegans* as a model system. My work over the past several years made a ground-breaking advancement in the field by revealing that fatty acids serve as a nutrient signal to regulate germline sex determination, and by elucidating how a novel lipid sensory mechanism (protein myristoylation) mediates this profound impact of fatty acid on germ cell fate specification. Currently, I am also investigating the important function of fatty acid in maintenance of sarcomere integrity. I found that ER stress is critically involved in the onset of sarcomere disruption caused by abnormal fatty acid metabolism. I will continue this research with aims at understanding the molecular basis underlying the impact of fat metabolism on ER stress, as well as how ER stress affects sarcomere integrity, by mainly using *C. elegans* as well as mice as model systems. My long-term goal is to elucidate the potential roles of different types of protein lipidation in muscle integrity maintenance, ER homeostasis regulation and various developmental events. In addition, I found that microbes affect ER homeostasis of host and I will thus expand my research focus to uncover the mechanism that microbes impact the onset of aging and degenerative diseases through regulating ER function. The discovery from these studies will provide valuable insights into the pathogenesis of FA metabolism-related and/or ER stress-related degenerative diseases.

Employment and education

- 2014, 06 – Present　　Postdoctoral fellow, HHMI/University of Colorado at Boulder, USA
- 2011, 08 – 2014, 02　　Visiting graduate student, HHMI/University of Colorado at Boulder, USA
- 2008, 09 – 2014, 03　　Ph.D. in Molecular biology and biochemistry, Zhejiang University, China
- 2004, 09 – 2008, 06　　B.S. in Biological Sciences, Ningbo University, China

Selected Publications

- **Hongyun Tang**, Min Han* (**2017**). Principles of Chemical Biology: From Sexy Fatty Acids and EBV probes to Anti-Acid Antibiotic via Post-Biotics and Host-Microbe Metabolic Complementarity (First section). ***Cell chemical biology***
- **Hongyun Tang** and Min Han* (**2017**). Fatty acids regulate germline sex determination through ACS-4-dependent myristoylation. ***Cell***. (Faculty 1000 Exceptional Rank).
- **Hongyun Tang**, Yong Qin, Jianyong Li, Xingguo Gong* (**2011**). The scavenging of superoxide radicals promotes apoptosis induced by a novel cell-permeable fusion protein, sTRAIL:FeSOD, in tumor necrosis factor-related apoptosis inducing ligand (TRAIL)-resistant leukemia cells. ***BMC Biology***.