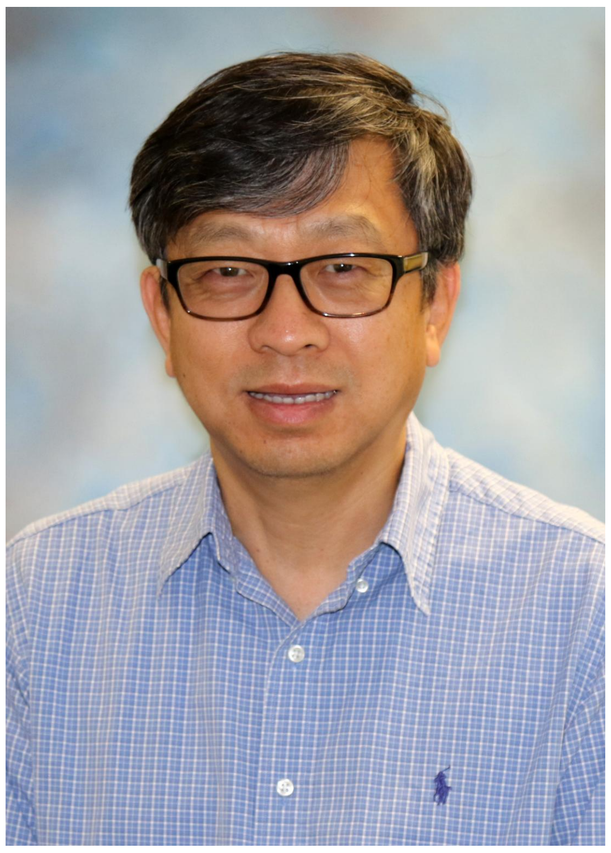
南方科技大学
SOUTHERN UNIVERSITY OF SCIENCE AND TECHNOLOGY

医学院大讲堂 SCHOOL OF MEDICINE



【 Biography 】

Education

1998，Hokkaido University, Sapporo, Japan，Ph.D. Medical Sciences
1988，Jilin University, Changchun, China，B.S. Biochemistry

Positions

2016-present，Professor, Department of Microbiology and Molecular Genetics，Michigan State University

Professional Activities

2010-present Review Editor, Virology, Frontiers in Microbiology
2009-present Editorial Board Member, Viruses

SERINC5 and Nef arms race in HIV-1 infection

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【 Abstract 】

SERINC5 is a novel restriction factor that strongly blocks HIV-1 entry. It belongs to the serine incorporator (SERINC) family that has five members (1 to 5). SERINC5 was initially identified as the counteractive target of HIV-1 Nef that increases viral infectivity. Our goal is to investigate the molecular mechanisms of how SERINC5 inhibits HIV-1 replication and conversely, how SERINC5 is counteracted by Nef. We investigated the Env-dependent SERINC5 antiviral mechanism by comparing Tier 1 NL Env with Tier 3 AD8 Env proteins. We found that when NL and AD8 viruses were inoculated into CD4+ T cells and human peripheral blood mononuclear cells (PBMCs), the propagation of both viruses was restricted to a similar level when Nef was not expressed. Using a bimolecular fluorescence complementation (BiFC) assay, we detected Env-Env association and Env-SERINC5 interaction. In addition, SERINC5 dissociated the NL Env trimeric complex more effectively than the AD8 Env trimeric complex, when CD4 was not expressed. Because Tier 1 and Tier 2/3 Env trimers have an open versus closed conformation, respectively, and CD4 opens the closed conformation, we conclude that SERINC5 selectively dissociates Env trimers with an open conformation to restrict HIV-1 replication.

时间 TIME
7月23日14：30-16：00

地点 VENUE
B栋518

主持人HOST
杨亮教授