GDCB SEMINAR

4:10 p.m. • Tuesday, Feb. 1, 2022 • 1414 Molecular Biology Building

'Klotho-Sirt1 signaling regulates cardiomyocyte cell cycles and cardiac dysfunction in aging'

Abstract: HKlotho is an anti-aging hormone predominantly secreted by the kidney tubules. Mice homozygous for a hypomorphic αKlotho allele (kl/kl) manifest multiple "accelerated" aging phenotypes, including pathological cardiac hypertrophy and heart failure, while klotho overexpression in mice extends lifespan. Decline in circulating klotho has been documented in the elderly populations. Downstream of klotho, Sirt1 is known to regulate acetylation and transcriptions of several critical cardiac proteins, which contribute to the phenotypes of cardiac aging. The second part will focus on cardiomyocytes proliferation and turnover. Mammalian heart is classically considered as "postmitotic", although recent studies have shown in mouse hearts that neonatal cardiomyocytes actively proliferate during the first week of birth, then they quickly enter cell cycle arrest, with low rate of cardiomyocytes turnover in adult. The mechanisms underlying klotho-sirt1 regulations of cardiac dysfunction and cardiomyocytes cell cycle regulations in aging will be discussed.

Host: Hua Bai, genetics, development and cell biology assistant professor

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