

BioSyM Seminar Series 2017

Role of Jag1 Extracellular Vesicles on Angiogenesis

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Date : 24th April 2017, Monday
Time : 12 pm to 1 pm
Venue : Perseverance Room, Level 5, Enterprise Wing



Abstract

Notch signaling is an evolutionary conserved signaling pathway that is essential in development. Jagged1(Jag1) and Delta-like 4(Dll4) are key Notch ligands which influence angiogenesis by controlling endothelial cell behavior. Dll4, was previously shown to be packaged into extracellular vesicles (EVs), whereby it could bypass its canonical, contact dependent, signaling to regulate angiogenesis by influencing Notch signaling at a distance. However, the role of EV-mediated Jag1 function have yet to be studied. In order to study the effect of Jag1 extracellular vesicles (Jag1-EVs) on angiogenesis, Jag1-EVs were isolated from Jag1-overexpressing HEK293T cells. We found that Jag1-EVs inhibited endothelial cell proliferation, migration and sprouting. Jag1-EVs were also found to inhibit Notch1 activation in ECs. Interestingly, it seems that the Jag1-EV mediated effects were independent of Jag1's N-terminal receptor binding domain, and is mediated by its C-terminal intracellular domain. These findings reveal a novel mechanism of EV mediated Notch signalling.

Short Biography

Evan is a graduate student from NUS, DBS and is supervised by Profs Harry Asada and Ge Ruowen. He obtained his B.Sc in Life Sciences from NUS in 2012.