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The Hippo pathway and its regulatory mechanisms

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Abstract

We identified WWTR1/TAZ as a novel oncoprotein in 2008 and have been working on its underlying mechanism of action in cancer development. As TAZ and YAP are transcriptional coactivators regulated by the Hippo tumor suppressor pathway, we have been investigating the role of YAP and TAZ in the context of the Hippo pathway. We demonstrated that the oncogenesis mediated by TAZ is dependent on its interaction with TEAD transcriptional factors. We also identified Wbp2 as a positive regulator of TAZ/YAP whereas Amot proteins are negative regulators of TAZ/YAP. Interestingly, Amot proteins are also regulated by the Hippo pathway. Structural studies revealed that Vgll proteins can compete with TAZ/YAP for TEADs to regulate the outputs of TEADs. Recent studies revealed that USP9X acts on the Hippo pathway to enforce its regulation on TAZ/YAP. Targeting TAZ/YAP-TEAD complex represents an unique opportunity for cancer treatment or regenerative medicine.

About the Speaker

Prof Wanjin HONG graduated from Xiamen University in 1982 and was one of a few hundred Chinese students chosen for further graduate training in the United States via the CUSBEA (China-United States Biochemistry Examination and Application) program. He received his PhD from the State University of New York (SUNY Buffalo), and was a postdoctoral fellow there before he joined the Institute of Molecular and Cell Biology (IMCB) in Singapore as a PI in 1989. Prof Hong became the Executive Director of IMCB at A*STAR (Agency for Science, Technology and Research) in 2011. He was the recipient of Singapore's National Science Award (now President's Science Award) in 1999. He also received Singapore's government Public Administration Medal (Silver) in 2014. He serves as the Editor-in-Chief of *Bioscience Reports*, Associate Editor of *Cell & Bioscience*, and is on the editorial board of *Traffic*.