NANYANG TECHNOLOGICAL UNIVERSITY

School of Biological Sciences

Seminar Announcement

Structure-Based Drug Design for Wnt/β-catenin Signaling Diseases

Date: 17 January 2017 Tuesday

Time: 3:00pm to 4:00pm

Venue: SBS Classroom 4(SBS-01n-24)

Host: Professor Yoon Ho Sup



Speaker: Professor Weontae Lee
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Abstract

Wnt/β-catenin pathway is aberrantly activated in most human colorectal cancers (CRCs) and many proteins interact with other molecules cooperatively in tumor promotion. Destabilization of both b-catenin and Ras signaling via targeting axin is a potential therapeutic strategy for treatment of CRC and other type cancers activated Wnt/b-catenin and Ras pathways. We identified axin as a direct target through *in vitro* binding studies, and uncovered details of the interaction between a novel drug compound and regulators of the G-protein signaling (RGS) domain of axin using nuclear magnetic resonance (NMR) experiments. Other example is targeting for Dishevelled (Dvl)/CXXC5 interaction in regulation of the Wnt/β-catenin pathway in osteoblast differentiation. We previously identified that CXXC5 is a negative feedback regulator of the Wnt/b-catenin pathway via its interaction with Dvl and suggested the Dvl–CXXC5 interaction as a potential target for anabolic therapy of osteoporosis. Nuclear magnetic resonance (NMR) and X-ray crystallographic analysis confirmed interaction between Dvl PDZ domain and a representative of the screened compounds. In conclusion, small-molecule inhibitors to block regulation of Wnt/b-catenin signaling are potential candidates for the development of both cancer and anti-osteoporosis drugs.