

# 6<sup>th</sup> Asia-Pacific Pharma Congress

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### Targeted inhibition of transcription factor STAT3 for the prevention and treatment of cancer

STATs comprise a family of cytoplasmic transcription factors that transmit signals, mediate intracellular signaling usually generated at cell surface receptors and transmitted to the nucleus. Numerous studies have demonstrated constitutive activation of STAT3 in a wide variety of human tumors, including blood malignancies (leukemias, lymphomas, and multiple myeloma) as well as solid tissues (such as head and neck, breast, lung, gastric, hepatocellular and prostate cancers). There is a strong evidence to suggest that aberrant STAT3 signaling promotes development and progression of human cancers by either inhibiting apoptosis or inducing cell proliferation, angiogenesis, invasion, and metastasis. However, the development of novel drugs for the targeting STAT3 that is both safe and efficacious remains an important scientific and clinical challenge. We will present the data that shows that novel small molecule inhibitors of STAT3/JAK2 pathway can suppress the expression of genes involved in cancer initiation, and promotion both *in vitro* and *in vivo*.

### Biography

After completion of his postdoctoral training at University of Texas MD Anderson Cancer Center, Prof. Gautam Sethi joined Department of Pharmacology, Yong Loo Lin School of Medicine, National University of Singapore in 2008 as an Assistant Professor and was promoted to Associate Professor in 2015. The focus of his research over the past few years has been to elucidate the mechanism (s) of activation of oncogenic transcription factors such as NF- $\kappa$ B/STAT3 by carcinogens and inflammatory agents and the identification of novel inhibitors of these proteins for prevention of and therapy for cancer. From traditional Chinese and Indian medicinal plants, his group has identified numerous small molecules that can suppress various pro-tumorigenic signaling cascades involved in cancer initiation and promotion. The novel findings of his research work have so far resulted in more than one fifty scientific publications in high impact factor peer reviewed journals and several international awards. He currently serves as an Academic Editor for prestigious PLOS One journal and ad-hoc reviewer for several other international journals.

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