

Histone methyltransferase regulators PRMT5 and EZH2 in leukemia stem cells

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Dr. Pan's major research interests are on drug resistance and relapse of cancer cells. Resistance to Gleevec develops over time which is an emerging problem for patients with chronic myelogenous leukemia (CML). Dr. Pan's group discovered several compounds (e.g., GZD824, S116836 and 126332) which are effective against Gleevec-resistant tumor cells.

Cancer stem cells are believed to confer drug-resistance and relapse. Little is known about the stemness of regulatory network of cancer stem cells. Dr. Pan's group aimed at dissecting such mechanism and validating novel therapeutic targets to kill cancer stem cells. They identified that arginin methyltransferase PRMT5 (Jin Y et al. J Clin Invest 2016) and EZH2, tyrosine kinas AXL and its ligand GAS6 (Jin Y et al. Clin Can Res 2016), p65-FOXM1 (Jin B et al. Clin Can Res 2016), and γ -catenin are critical for CML CSCs.