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Current Position:

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Education

Ph.D. in Biochemistry and Molecular Biology, Peking Union Medical College & Chinese Academy of Medical Sciences, Beijing, China

Expertise

Targeted cancer therapy, Cancer epigenetics, Post-translational modifications, Arginine methylation, Neuroblastoma

Research Interests

Our research is focused on identification and characterization of epigenetic factors for targeted cancer therapy. Of particular interest is the role of protein arginine methyltransferases and phosphatases in the normal and neoplastic neural crest, and preclinical pharmacology of targeting these proteins in neuroblastoma, a deadly childhood cancer.

Our recent findings have demonstrated an essential role of a protein arginine methyltransferase and a transcriptional coactivator/phosphatase in neuroblastoma. We have also initiated exploring the therapeutic potential of small molecule compounds that selectively disrupt the activity of this regulatory axis. We are leveraging various technologies to understand the molecular mechanisms underlying the oncogenicity of this protein complex. By utilizing multiple model systems, we propose to identify key molecular targets that are critical to a relevant biological phenotype and to develop novel strategies for effective cancer therapy.

Selected Grants:

Andrew McDonough B+ (Be Positive) Foundation's Childhood Cancer Research Award (01/01/2018-12/31/2019)
Functional inhibition of PRMT1-EYA1 axis to disrupt neuroblastoma tumor-initiating cells

Andrew McDonough B+ (Be Positive) Foundation's Childhood Cancer Research Award (01/01/2020-12/31/2021)
Arginine methylation as a potential therapeutic target in high-risk neuroblastoma

Infinite Love for Kids Fighting Cancer Independent Investigator and Bear Necessities Pediatric Cancer Foundation
Independent Investigator Award (No: 19IN31) (07/01/2019-06/30/2021)
PRMT1 as a Therapeutic Target in Neuroblastoma

The Children's Cancer Research Fund's Emerging Scientist Award (09/01/2019-08/31/2020, no cost extension to 4/30/2021)

Defining the Role and Therapeutic Implications of EYA1 in Neuroblastoma

Selected Publications

1. Hansen JN, Lotta LT, Eberhardt A, Schor NF*, **Li X***. EYA1 expression and subcellular localization in neuroblastoma and its association with prognostic markers. *J Cancer Res. & Ther.* 2016 Jun;4(2):11-18. doi: 10.14312/2052-4994.2016-3.
2. Eberhardt A, Hansen JN, Koster J, Lotta LT Jr, Wang S, Livingstone E, Qian K, Valentijn LJ, Zheng YG, Schor NF*, **Li X***. Protein arginine methyltransferase 1 is a novel regulator of MYCN in neuroblastoma. *Oncotarget.* 2016 Sep 27;7(39):63629-63639. doi: 10.18632/oncotarget.11556.
3. **Li X***, Eberhardt A, Hansen JN, Bohmann D, Li H, Schor NF*. Methylation of the phosphatase-transcription activator EYA1 by protein arginine methyltransferase 1: Mechanistic, functional, and structural studies. *FASEB J.* 2017 Jun;31(6):2327-2339. doi: 10.1096/fj.201601050RR.
4. Hansen JN, **Li X**, Zheng YG, Lotta LT, Dedhe A, Schor NF. Using Chemistry to Target Neuroblastoma. *ACS Chem Neurosci.* 2017 Oct 18;8(10):2118-2123. doi: 10.1021/acchemneuro.7b00258.
5. Liu PP, Xu YJ, Dai SK, Du HZ, Wang YY, **Li XG**, Teng ZQ, Liu CM. Polycomb Protein EED Regulates Neuronal Differentiation through Targeting SOX11 in Hippocampal Dentate Gyrus. *Stem Cell Reports.* 2019 Jul 9;13(1):115-131. doi: 10.1016/j.stemcr.2019.05.010.
6. Hua ZY, Hansen JN, He M, Dai SK, Choi Y, Fulton MD, Lloyd SM, Szemes M, Sen J, Ding HF, Angelastro JM, Fei X, Li HP, Wu CR, Yang SY, Malik K, Bao X, George Zheng Y, Liu CM, Schor NF, Li ZJ, **Li XG***. PRMT1 promotes neuroblastoma cell survival through ATF5. *Oncogenesis.* 2020 May 15;9(5):50. doi: 10.1038/s41389-020-0237-9.