Docket #: S01-245B

Anti-Pbx1b monoclonal antibody

Researchers in the laboratory of Dr. Michael Cleary at Stanford University have developed anti-Pbx1b monoclonal antibodies to study transcriptional regulation, embryonic development, and tissue homeostasis. Mammalian *Pbx* genes encode a family of TALE (three amino acid loop extension) homeodomain proteins that function as transcriptional regulators in numerous cell types.

Pbx1 was originally identified in human pre-B acute lymphoblastic leukemias. Lack of *Pbx1* results in embryonic lethality and is associated with multiple patterning malformations, hypoplasia or aplasia of most internal organs, organ malfunctions, and severe fetal anemia. *Pbx1* is the prototypic *Pbx* family member and encodes the alternatively spliced Pbx1a and Pbx1b isoforms that exhibit characteristic biochemical properties. Pbx1b is the low molecular-weight protein form. *Pbx* utilizes the alternative portions of itself to interact with Meis versus Hox proteins. The Pbx1b isoform mediates elastase enhancer activity in pancreatic acinar cells as part of a trimeric complex. The anti-Pbx1b antibodies could be used in research related to leukemia, embryonic development, and tissue homeostasis.

Applications

- **Research** related to:
  - leukemia
  - embryonic development
  - tissue homeostasis

Publications

- Jacobs Y, Schnabel CA, Cleary ML., "Trimeric association of Hox and TALE homeodomain proteins mediates Hoxb2 hindbrain enhancer activity." *Mol Cell Biol.* 1999 Jul;19(7):5134-42.

- Chang CP, Jacobs Y, Nakamura T, Jenkins NA, Copeland NG, Cleary ML., "Meis proteins are major in vivo DNA binding partners for wild-type but not chimeric Pbx proteins." *Mol Cell Biol.* 1997 Oct;17(10):5679-87.

Innovators

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