Docket #: S01-245E

# Anti-Pbx3b monoclonal antibody

Researchers in the laboratory of Dr. Michael Cleary at Stanford University have developed anti-Pbx3b monoclonal antibodies to study transcriptional regulation and embryonic development. Pbx proteins comprise a set of four TALE (three amino acid loop extension) class homeodomain transcription factors that are implicated in developmental gene expression. They form hetero-oligomeric DNA-binding complexes and function as transcriptional regulators in cells of different developmental lineages.

*Pbx3* is expressed in high levels predominantly in the developing central nervous system, including a region of the medulla oblongata that is implicated in the control of respiration. *Pbx3*-deficient mice die within a few hours of birth from central respiratory failure and provide a model for congential central hypoventiliation syndrome. *Pbx3* encodes the alternatively spliced Pbx3a and Pbx3b isoform proteins. Pbx3b is the low molecular-weight protein form. It has been localized to various tissues of the central and peripheral nervous systems during mouse embryogenesis (to a lesser extent than Pbx3a). The anti-Pbx3b antibodies could be used in research related to central nervous system and respiratory development.

### **Applications**

- Research related to:
  - embryonic development (particularly in the central nervous system and respiratory system)
  - transcriptional regulation

### **Publications**

• Rhee JW, Arata A, Selleri L, Jacobs Y, Arata S, Onimaru H, Cleary ML. <u>"Pbx3</u> <u>deficiency results in central hypoventilation.</u> *Am J Pathol.* 2004 Oct;165(4):1343-50.

#### Innovators

- Michael Cleary
- Yakop Jacobs

## **Licensing Contact**

#### **Brenda Martino**

**Biological Materials Specialist** 

<u>Email</u>