

**Docket #:** S01-245D

# Anti-Pbx3a Monoclonal Antibody

Researchers in the laboratory of Dr. Michael Cleary at Stanford University have developed anti-Pbx3a 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 congenital central hypoventilation syndrome. *Pbx3* encodes the alternatively spliced Pbx3a and Pbx3b isoform proteins. Pbx3a is the high molecular-weight protein form. In mouse embryogenesis, it has been localized to various tissues of the central and peripheral nervous systems as well as in chondrocytes through the skeleton. The anti-Pbx3a antibodies could be used in research related to central nervous system, respiratory, and skeletal development.

## Applications

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

## Publications

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

## **Innovators**

- Michael Cleary
- Joon Rhee

## **Licensing Contact**

### **Brenda Martino**

Biological Materials Specialist

[Email](#)