

HoxB5 (133C3a): sc-81099

BACKGROUND

The Hox proteins are a family of transcription factors that play a role in development and cellular differentiation by regulating downstream target genes. Specifically, the Hox proteins direct DNA-protein and protein-protein interactions that assist in determining the morphologic features associated with the anterior-posterior body axis. Hox proteins are involved in controlling axial patterning, leukemias and hereditary malformations. HoxB5 (homeobox protein Hox-B5), also known as HOX2, HU-1, HOX2A, Hox2.1 or HHO.C10, is a member of the Antp homeobox (Hox) family. It is a 269 amino acid long nuclear protein expressed in the central nervous system. HoxB5 contains one homeobox DNA-binding domain and plays a role in the regulation of lung and gut development, providing cells with positional identities on the anterior-posterior body axis.

REFERENCES

1. Sakach, M. and Safaei, R. 1997. Localization of the HoxB5 protein in the developing CNS of late gestational mouse embryos. *Int. J. Dev. Neurosci.* 14: 567-573.
2. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 142960. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Fu, M., et al. 2003. HoxB5 expression is spatially and temporarily regulated in human embryonic gut during neural crest cell colonization and differentiation of enteric neuroblasts. *Dev. Dyn.* 228: 1-10.
4. Wu, Y., et al. 2003. HoxB5 is an upstream transcriptional switch for differentiation of the vascular endothelium from precursor cells. *Mol. Cell. Biol.* 23: 5680-5691.
5. Chen, L.Y., et al. 2003. Influence of human cytomegalovirus infection on the expressions of HOXB1, HoxB5, HOXB6, and HOXB9 genes in human embryo lung cells. *Hunan Yi Ke Da Xue Xue Bao* 26: 189-191.
6. Korshunov, A., et al. 2003. Gene expression patterns in ependymomas correlate with tumor location, grade, and patient age. *Am. J. Pathol.* 163: 1721-1727.
7. Neben, K., et al. 2005. Distinct gene expression patterns associated with FLT3- and NRAS-activating mutations in acute myeloid leukemia with normal karyotype. *Oncogene* 24: 1580-1588.
8. Lind, G.E., et al. 2006. Novel epigenetically deregulated genes in testicular cancer include homeobox genes and SCGB3A1 (HIN-1). *J. Pathol.* 210: 441-449.

CHROMOSOMAL LOCATION

Genetic locus: HOXB5 (human) mapping to 17q21.32.

SOURCE

HoxB5 (133C3a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to an internal region of HoxB5 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

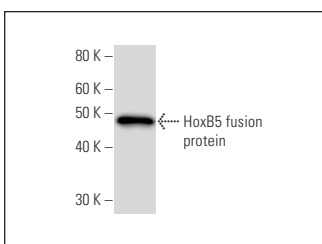
APPLICATIONS

HoxB5 (133C3a) is recommended for detection of HoxB5 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for HoxB5 siRNA (h): sc-75279, HoxB5 shRNA Plasmid (h): sc-75279-SH and HoxB5 shRNA (h) Lentiviral Particles: sc-75279-V.

Molecular Weight of HoxB5: 29 kDa.

DATA



HoxB5 (133C3a): sc-81099. Western Blot analysis of human recombinant HoxB5 fusion protein.

SELECT PRODUCT CITATIONS

1. Zhu, J., et al. 2011. HoxB5 cooperates with NKX2-1 in the transcription of human RET. *PLoS ONE* 6: e20815.
2. Kam, M.K., et al. 2014. Homeobox b5 (HoxB5) regulates the expression of forkhead box D3 gene (Foxd3) in neural crest. *Int. J. Biochem. Cell Biol.* 55: 144-152.
3. Lee, J.Y., et al. 2018. Transcriptional activation of EGFR by HoxB5 and its role in breast cancer cell invasion. *Biochem. Biophys. Res. Commun.* 503: 2924-2930.
4. Gao, X., et al. 2018. miR-455-3p serves as prognostic factor and regulates the proliferation and migration of non-small cell lung cancer through targeting HoxB5. *Biochem. Biophys. Res. Commun.* 495: 1074-1080.
5. Tan, X., et al. 2019. MicroRNA-625 inhibits the progression of non-small cell lung cancer by directly targeting HoxB5 and deactivating the Wnt/β-catenin pathway. *Int. J. Mol. Med.* 44: 346-356.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

For research use only, not for use in diagnostic procedures.