SANTA CRUZ BIOTECHNOLOGY, INC.

HoxB7 (747C4a): sc-81292



BACKGROUND

The Hox proteins 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. The mammalian HOX gene complex consists of 39 genes that are located on 4 linkage groups, which are dispersed over 4 chromosomes. A segment of the HoxB7 proximal promoter drives renal expression of reporter genes specifically in the ureteric bud and collecting ducts. Expression levels of HoxB7 are lower in lymph node metastasis-positive cancer tissues than negative cancer tissues. These results suggest that aberrant expression of Hox genes is related to the development of breast cancer and malignant behavior of cancer cells.

REFERENCES

- 1. Felicetti, F., et al. 2004. Role of PLZF in melanoma progression. Oncogene 23: 4567-4576.
- 2. Oxburgh, L., et al. 2004. TGF_β superfamily signals are required for morphogenesis of the kidney mesenchyme progenitor population. Development 131: 4593-4605.
- 3. Watanabe, T., et al. 2004. Real-time analysis of ureteric bud branching morphogenesis in vitro. Dev. Biol. 271: 98-108.
- 4. Yu, O.H., et al. 2004. Overexpression of Ret leads to vesicoureteric reflux in mice. Am. J. Physiol. Renal Physiol. 287: F1123-F1130.
- 5. Makiyama, K., et al. 2005. Aberrant expression of HOX genes in human invasive breast carcinoma. Oncol. Rep. 13: 673-679.
- 6. Plaisier, E., et al. 2005. Identification of two candidate collecting duct cell-specific cis-acting elements in the HoxB7 promoter region. Biochim. Biophys. Acta 1727: 106-115.
- 7. SWISS-PROT/TrEMBL (P09629). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: HOXB7 (human) mapping to 17q21.32.

SOURCE

HoxB7 (747C4a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to the N-terminal region of HoxB7 of human origin.

PRODUCT

Each vial contains 100 μ g lgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

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.

APPLICATIONS

HoxB7 (747C4a) is recommended for detection of HoxB7 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 HoxB7 siRNA (h): sc-45835, HoxB7 shRNA Plasmid (h): sc-45835-SH and HoxB7 shRNA (h) Lentiviral Particles: sc-45835-V.

Molecular Weight of HoxB7: 24 kDa.

DATA



human recombinant HoxB7 fusion protein

SELECT PRODUCT CITATIONS

- 1. Jin, K., et al. 2012. The HoxB7 protein renders breast cancer cells resistant to tamoxifen through activation of the EGFR pathway. Proc. Natl. Acad. Sci. USA 109: 2736-2741.
- 2. Steens, J., et al. 2017. In vitro generation of vascular wall-resident multipotent stem cells of mesenchymal nature from murine induced pluripotent stem cells. Stem Cell Rep. 8: 919-932.
- 3. Wang, W.M., et al. 2017. HoxB7 promotes tumor progression via bFGFinduced activation of MAPK/ERK pathway and indicated poor prognosis in hepatocellular carcinoma. Oncotarget 8: 47121-47135.
- 4. Zhou, T., et al. 2020. HoxB7 mediates cisplatin resistance in esophageal squamous cell carcinoma through involvement of DNA damage repair. Thorac. Cancer 11: 3071-3085.
- 5. Cai, L., et al. 2020. The let-7c/HoxB7 axis regulates the cell proliferation, migration and apoptosis in hepatocellular carcinoma. Anticancer Drugs 31: 6-18.
- 6. Cao, C., et al. 2022. Propofol prevents the aggressive progression of oral squamous cell carcinoma via regulating circ_0005623/miR-195-5p/HoxB7 axis. Biotechnol. Appl. Biochem. 69: 1015-1028.
- 7. Zhu, M., et al. 2024. MIR143HG promotes methylation of transcription factor HoxB7 promoter by recruiting methyltransferase DNMT1 to prevent the progression of colon cancer. FASEB J. 38: e23378.

RESEARCH USE

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