SANTA CRUZ BIOTECHNOLOGY, INC.

HoxA7 (743C1a): sc-81290

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

HOX genes play a fundamental role in the development of the vertebrate central nervous system, heart, axial skeleton, limbs, gut, urogenital tract and external genitalia. The homeobox gene HoxA1 is transcriptionally regulated by retinoic acid (RA) and encodes a transcription factor, which has been shown to play important roles in cell differentiation and embryogenesis. HoxA1 is also expressed in cancers, such as mammary tumors, though it is not expressed in normal gland or in precancerous mammary tissues. At embryonic stages, HoxA2 is expressed in the mesenchyme and epithelial cells of palate, however its expression is restricted to the tips of the growing palatal shelves. HoxA2 protein is predominantly expressed in the nuclei of cells in the ventral mantle region of the developing embryo. In the developing and adult mouse spinal cord, HoxA2 protein may contribute to dorsal-ventral patterning and/or to the specification of neuronal phenotype. HoxA7 functions as a potent transcriptional repressor and its action as such requires several domains, including both activator and repressor regions. HoxA7 is expressed in the fetal liver, lung, skeletal muscle, kidney, pancreas and placenta.

REFERENCES

1. Schnabel, C.A., et al. 1996. Repression by HoxA7 is mediated by the homeodomain and the modulatory action of its N-terminal-arm residues. Mol. Cell. Biol. 16: 2678-2688.
2. Srebrow, A., et al. 1998. Expression of HoxA1 and HoxB7 is regulated by extracellular matrix-dependent signals in mammary epithelial cells. J. Cell Biol. 69: 377-391.
3. Hao, Z., et al. 1999. Differential expression of HoxA2 protein along the dorsal-ventral axis of the developing and adult mouse spinal cord. Dev. Dyn. 216: 201-217.
4. Kim, M.H., et al. 2000. Sequence analysis and tissue specific expression of human HoxA7. Mol. Biotechnol. 14: 19-24.
5. Shen, J., et al. 2000. Molecular cloning and analysis of a group of genes differentially expressed in cells which overexpress the HoxA1 homeobox gene. Exp. Cell Res. 259: 274-283.

CHROMOSOMAL LOCATION

Genetic locus: HOXA7 (human) mapping to 7p15.2.

SOURCE

HoxA7 (743C1a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to the N-terminal region of HoxA7 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 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

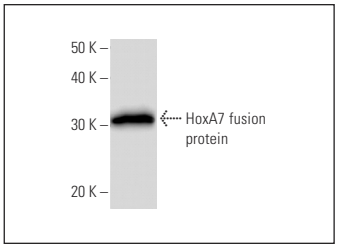
HoxA7 (743C1a) is recommended for detection of HoxA7 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for HoxA7 siRNA (h): sc-38680, HoxA7 shRNA Plasmid (h): sc-38680-SH and HoxA7 shRNA (h) Lentiviral Particles: sc-38680-V.

Molecular Weight of HoxA7: 35 kDa.

Positive Controls: TF-1 cell lysate: sc-2412, HeLa nuclear extract: sc-2120 or K-562 nuclear extract: sc-2130.

DATA



HoxA7 (743C1a): sc-81290. Western Blot analysis of human recombinant HoxA7 fusion protein.

SELECT PRODUCT CITATIONS

1. Li, Y., et al. 2010. Ratio of miR-196s to HoxC8 messenger RNA correlates with breast cancer cell migration and metastasis. Cancer Res. 70: 7894-7904.
2. Jo, S., et al. 2011. Inhibition of PCGF2 enhances granulocytic differentiation of acute promyelocytic leukemia cell line HL-60 via induction of HoxA7. Biochem. Biophys. Res. Commun. 416: 86-91.
3. Jorgensen, M.M., et al. 2015. Potentials and capabilities of the extracellular vesicle (EV) array. J. Extracell. Vesicles 4: 26048.
4. Jung, A.L., et al. 2020. Surface proteome of plasma extracellular vesicles as biomarkers for pneumonia and acute exacerbation of chronic obstructive pulmonary disease. J. Infect. Dis. 221: 325-335.
5. Feng, A., et al. 2023. Homeobox A7 promotes esophageal squamous cell carcinoma progression through C-C motif chemokine ligand 2-mediated tumor-associated macrophage recruitment. Cancer Sci. 114: 3270-3286.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.