SANTA CRUZ BIOTECHNOLOGY, INC.

HoxA1 (1E10): sc-293257

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 the 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 Hoxa-1 and Hoxb-7 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 Hoxa-2 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 Hoxa-1 homeobox gene. Exp. Cell Res. 259: 274-283.
6. Nazarali, A., et al. 2000. Temporal and spatial expression of Hoxa-2 during murine palatogenesis. Cell. Mol. Neurobiol. 20: 269-290.
7. Goodman, F.R., et al. 2001. Human HOX gene mutations. Clin. Genet. 59: 1-11.

CHROMOSOMAL LOCATION

Genetic locus: HOXA1 (human) mapping to 7p15.2.

SOURCE

HoxA1 (1E10) is a mouse monoclonal antibody raised against amino acids 11-119 of HoxA1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HoxA1 (1E10) is recommended for detection of HoxA1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

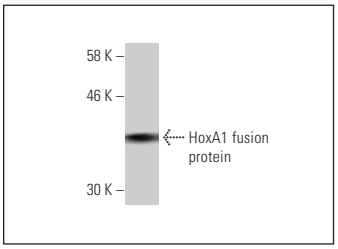
Suitable for use as control antibody for HoxA1 siRNA (h): sc-35583, HoxA1 shRNA Plasmid (h): sc-35583-SH and HoxA1 shRNA (h) Lentiviral Particles: sc-35583-V.

Molecular Weight of HoxA1: 37 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



HoxA1 (1E10): sc-293257. Western blot analysis of human recombinant HoxA1 fusion protein.

SELECT PRODUCT CITATIONS

1. Su, G., et al. 2019. A distal enhancer maintaining Hoxa1 expression orchestrates retinoic acid-induced early ESCs differentiation. Nucleic Acids Res. 47: 6737-6752.
2. Ni, Y., et al. 2021. Interruption of neutrophil extracellular traps formation dictates host defense and tubular HOXA5 stability to augment efficacy of anti-Fn14 therapy against septic AKI. Theranostics 11: 9431-9451.
3. Han, Z., et al. 2023. HOXA1 participates in VSMC-to-macrophage-like cell transformation via regulation of NFκB p65 and KLF4: a potential mechanism of atherosclerosis pathogenesis. Mol. Med. 29: 104.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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