SANTA CRUZ BIOTECHNOLOGY, INC.

HoxA2 (N-20): sc-17149

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 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. Nazarali, A., et al. 2000. Temporal and spatial expression of HoxA2 during murine palatogenesis. Cell Mol. Neurobiol. 20: 269-290.
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.
6. Kim, M.H., et al. 2000. Sequence analysis and tissue specific expression of human HoxA7. Mol. Biotechnol. 14: 19-24.
7. Goodman, F.R., et al. 2001. Human Hox gene mutations. Clin. Genet. 59: 1-11.

CHROMOSOMAL LOCATION

Genetic locus: HOXA2 (human) mapping to 7p15.2; Hoxa2 (mouse) mapping to 6 B3.

SOURCE

HoxA2 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of HoxA2 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-17149 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HoxA2 (N-20) is recommended for detection of HoxA2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HoxA2 (N-20) is also recommended for detection of HoxA2 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for HoxA2 siRNA (h): sc-38673, HoxA2 siRNA (m): sc-38674, HoxA2 shRNA Plasmid (h): sc-38673-SH, HoxA2 shRNA Plasmid (m): sc-38674-SH, HoxA2 shRNA (h) Lentiviral Particles: sc-38673-V and HoxA2 shRNA (m) Lentiviral Particles: sc-38674-V.

HoxA2 (N-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of HoxA2: 43 kDa.

Positive Controls: DU 145 cell lysate: sc-2268.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Kömüves, L.G. and Largman, C. 2005. Analysis of Hox homeodomain proteins and gene transcripts in the epidermis. Methods Mol. Biol. 289: 157-170.
2. Massip, L., et al. 2007. Expression of HoxA2 in cells entering chondrogenesis impairs overall cartilage development. Differentiation 75: 256-267.
3. Lampe, X., et al. 2008. An ultraconserved Hox-Pbx responsive element resides in the coding sequence of HoxA2 and is active in rhombomere 4. Nucleic Acids Res. 36: 3214-3225.

RESEARCH USE

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