

HoxA3 (L-13): sc-22383

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 four linkage groups, which are dispersed over four chromosomes. HOX genes that occupy the same relative position along the 5' to 3' coordinate (*trans*-prime paralogous genes) are more similar in sequence and expression pattern than adjacent HOX genes on the same chromosome. HoxA3, in conjunction with Pax1, mediates the development of the thymus, parathyroid gland and carotid body. Its expression in the third pharyngeal arch and pouch is required for development of the third arch artery and homozygous null HoxA3 mutants lack the carotid body. HoxA3 also regulates hindbrain development by controlling the axon projection pattern of motor neurons and sensory neurons of the proximal and distal ganglia.

REFERENCES

1. Manley, N.R. et al. 1997. Hox group 3 paralogous genes act synergistically in the formation of somitic and neural crest-derived structures. *Dev. Biol.* 192: 274-288.
2. Greer, J.M., et al. 2000. Maintenance of functional equivalence during paralogous Hox gene evolution. *Nature* 403: 661-665.
3. Su, D.M. et al. 2000. HoxA3 and Pax1 transcription factors regulate the ability of fetal thymic epithelial cells to promote thymocyte development. *J. Immunol.* 164: 5753-5760.
4. Manzanares, M., et al. 2001. Independent regulation of initiation and maintenance phases of HoxA3 expression in the vertebrate hindbrain involve auto- and cross-regulatory mechanisms. *Development* 128: 3595-3607.
5. Su, D., et al. 2001. HoxA3 and Pax1 regulate epithelial cell death and proliferation during thymus and parathyroid organogenesis. *Dev. Biol.* 236: 316-329.
6. Watari, N., et al. 2001. HoxA3 regulates integration of glossopharyngeal nerve precursor cells. *Dev. Biol.* 240: 15-31.
7. Kameda, Y., et al. 2002. Homeobox gene HoxA3 is essential for the formation of the carotid body in the mouse embryos. *Dev. Biol.* 247: 197-209.

CHROMOSOMAL LOCATION

Genetic locus: HOXA3 (human) mapping to 7p15.2; Hoxa3 (mouse) mapping to 6 B3.

SOURCE

HoxA3 (L-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of HoxA3 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-22383 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-22383 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HoxA3 (L-13) is recommended for detection of HoxA3 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).

HoxA3 (L-13) is also recommended for detection of HoxA3 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for HoxA3 siRNA (h): sc-38675, HoxA3 siRNA (m): sc-38676, HoxA3 shRNA Plasmid (h): sc-38675-SH, HoxA3 shRNA Plasmid (m): sc-38676-SH, HoxA3 shRNA (h) Lentiviral Particles: sc-38675-V and HoxA3 shRNA (m) Lentiviral Particles: sc-38676-V.

HoxA3 (L-13) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of HoxA3: 50 kDa.

Positive Controls: K-562 nuclear extract: sc-2130 or KNRK nuclear extract: sc-2141.

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.

RESEARCH USE

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

PROTOCOLS

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



Try **HoxA3 (F-7): sc-374237**, our highly recommended monoclonal alternative to HoxA3 (L-13).