

HoxA3 (F-7): sc-374237

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*-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 Pax-1 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.

CHROMOSOMAL LOCATION

Genetic locus: HOXA3 (human) mapping to 7p15.2.

SOURCE

HoxA3 (F-7) is a mouse monoclonal antibody raised against amino acids 251-415 mapping near the C-terminus of HoxA3 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain 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-374237 X, 200 µg/0.1 ml.

HoxA3 (F-7) is available conjugated to agarose (sc-374237 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374237 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374237 PE), fluorescein (sc-374237 FITC), Alexa Fluor® 488 (sc-374237 AF488), Alexa Fluor® 546 (sc-374237 AF546), Alexa Fluor® 594 (sc-374237 AF594) or Alexa Fluor® 647 (sc-374237 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374237 AF680) or Alexa Fluor® 790 (sc-374237 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

HoxA3 (F-7) is recommended for detection of HoxA3 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

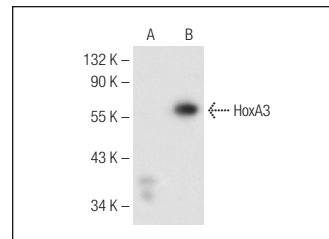
Suitable for use as control antibody for HoxA3 siRNA (h): sc-38675, HoxA3 shRNA Plasmid (h): sc-38675-SH and HoxA3 shRNA (h) Lentiviral Particles: sc-38675-V.

HoxA3 (F-7) 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, KNRK nuclear extract: sc-2141 or HoxA3 (h): 293 Lysate: sc-111371.

DATA



HoxA3 (F-7): sc-374237. Western blot analysis of HoxA3 expression in non-transfected: sc-110760 (A) and human HoxA3 transfected: sc-111371 (B) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Chojnowski, J.L., et al. 2014. Multiple roles for HoxA3 in regulating thymus and parathyroid differentiation and morphogenesis in mouse. *Development* 141: 3697-3708.
2. Lin, S., et al. 2019. LncRNA HOXA-AS3 confers cisplatin resistance by interacting with HoxA3 in non-small-cell lung carcinoma cells. *Oncogenesis* 8: 60.

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.

PROTOCOLS

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