SANTA CRUZ BIOTECHNOLOGY, INC.

HoxD3 (4AY): sc-130378

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Hox (homeobox) genes play an important role in the development and design of anterior-posterior body axes in animals. Although Hox proteins can bind to DNA as monomers, dimerization with PBX homeoproteins can significantly increase the DNA binding activity of these transcription factors. HoxD3, a homeobox transcription factor that promotes angiogenesis and collagen synthesis, is upregulated during normal wound repair and may provide a means to directly improve collagen deposition, angiogenesis and closure in poorly healing wounds in diabetics. One study found that six of seven observed melanoma cell lines expressed the HoxD3 gene, whereas normal melanocytes did not. When overexpressed, HoxD3 upregulates Integrin β3 expression in human erythroleukemia HEL cells and lung cancer A549 cells and enhances their motility and invasiveness. HoxD3 may also enhance the invasive and metastatic potential of cancer cells through TGFβ-dependent and independent pathways.

REFERENCES

1. Phelan, M.L. and Featherstone, M.S. 1997. Distinct HOX N-terminal arm residues are responsible for specificity of DNA recognition by HOX monomers and HOX.PBX heterodimers. J. Biol. Chem. 272: 8635-8643.
2. Gellon, G. and McGinnis, W. 1998. Shaping animal body plans in development and evolution by modulation of Hox expression patterns. Bioessays 20: 116-125.
3. Okubo, Y., et al. 2002. Transduction of HoxD3-antisense into human melanoma cells results in decreased invasive and motile activities. Clin. Exp. Metastasis 19: 503-511.
4. Miyazaki, Y.J., et al. 2002. HoxD3 enhances motility and invasiveness through the TGFβ-dependent and -independent pathways in A549 ells. Oncogene 21: 798-808.
5. Hansen, S.L., et al. 2003. HoxD3 accelerates wound healing in diabetic mice. Am. J. Pathol. 163: 2421-2431.

CHROMOSOMAL LOCATION

Genetic locus: HOXD3 (human) mapping to 2q31.1; Hoxd3 (mouse) mapping to 2 C3.

SOURCE

HoxD3 (4AY) is a mouse monoclonal antibody raised against recombinant HoxD3 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

HoxD3 (4AY) is recommended for detection of HoxD3 of mouse, rat and 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 HoxD3 siRNA (h): sc-38698, HoxD3 siRNA (m): sc-38699, HoxD3 shRNA Plasmid (h): sc-38698-SH, HoxD3 shRNA Plasmid (m): sc-38699-SH, HoxD3 shRNA (h) Lentiviral Particles: sc-38698-V and HoxD3 shRNA (m) Lentiviral Particles: sc-38699-V.

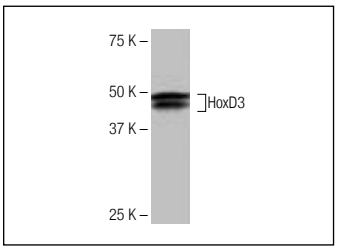
Molecular Weight of HoxD3: 44 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or HeLa nuclear extract: sc-2120.

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



HoxD3 (4AY): sc-130378. Western blot analysis of HoxD3 expression in HeLa nuclear extract.

SELECT PRODUCT CITATIONS

1. Wang, L., et al. 2023. A pan-cancer analysis of the role of HoxD1, HoxD3, and HoxD4 and validation in renal cell carcinoma. Aging 15: 10746-10766.

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.