

Cdx4 (C-18): sc-54164

BACKGROUND

Cdx1, Cdx2 and Cdx4 are members of the caudal-type homeobox family of genes, which are homologs of the *Drosophila* "caudal" gene required for anterior-posterior regional identity. The proteins encoded by these genes are transcription factors which play an important role in development by regulating the expression of Hox genes. 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. Cdx4 is a major positive regulator of the expression of all Hox family members. Due to its critical role as a regulator, Cdx4 is a direct target of the canonical Wnt pathway. The loss of Cdx4 can result in the development of an expanded hindbrain, while the overexpression of Cdx4 may cause the hindbrain to lose its distinct segmental features and resemble the spinal cord.

REFERENCES

1. Gamer, L.W. and Wright, C.V. 1994. Murine Cdx4 bears striking similarities to the *Drosophila* caudal gene in its homeodomain sequence and early expression pattern. *Mech. Dev.* 43: 71-81.
2. Horn, J.M. and Ashworth, A. 1995. A member of the caudal family of homeobox genes maps to the X-inactivation centre region of the mouse and human X chromosomes. *Hum. Mol. Genet.* 4: 1041-1047.
3. Bonner, C.A., Loftus, S.K. and Wasmuth, J.J. 1996. Isolation, characterization, and precise physical localization of human CDX1, a caudal-type homeobox gene. *Genomics* 28: 206-211.
4. Tabariès, S., Lapointe, J., Besch, T., Carter, M., Woollard, J., Tuggle, C.K. and Jeannotte, L. 2005. Cdx protein interaction with HoxA5 regulatory sequences contributes to HoxA5 regional expression along the axial skeleton. *Mol. Cell. Biol.* 25: 1389-1401.
5. Gaunt, S.J., Drage, D. and Trubshaw, R.C. 2005. Cdx4/LacZ and Cdx2/LacZ protein gradients formed by decay during gastrulation in the mouse. *Int. J. Dev. Biol.* 49: 901-908.
6. Pilon, N., Oh, K., Sylvestre, J.R., Bouchard, N., Savory, J. and Lohnes, D. 2005. Cdx4 is a direct target of the canonical Wnt pathway. *Dev. Biol.* 289: 55-63.
7. Bansal, D., Scholl, C., Fröhling, S., McDowell, E., Lee, B.H., Döhner, K., Ernst, P., Davidson, A.J., Daley, G.Q., Zon, L.I., Gilliland, D.G. and Huntly, B.J. 2006. Cdx4 dysregulates Hox gene expression and generates acute myeloid leukemia alone and in cooperation with Meis1a in a murine model. *Proc. Natl. Acad. Sci. USA* 103: 16924-16929.
8. Guo, X.T., Shi, M., Shu, M.G., Xue, Y., Li, L.W. and Liu, W.C. 2007. *Ex vivo* expanding hematopoietic stem cells by intracellular delivery of Cdx4 fusion proteins. *Med. Hypotheses* 68: 1389-1391.
9. Skromne, I., Thorsen, D., Hale, M., Prince, V.E. and Ho, R.K. 2007. Repression of the hindbrain developmental program by Cdx factors is required for the specification of the vertebrate spinal cord. *Development* 134: 2147-2158.

RESEARCH USE

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

CHROMOSOMAL LOCATION

Genetic locus: CDX4 (human) mapping to Xq13.2; Cdx4 (mouse) mapping to X D.

SOURCE

Cdx4 (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Cdx4 of human origin.

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-54164 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Cdx4 (C-18) is recommended for detection of Cdx4 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).

Cdx4 (C-18) is also recommended for detection of Cdx4 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for Cdx4 siRNA (h): sc-72316, Cdx4 siRNA (m): sc-72317, Cdx4 shRNA Plasmid (h): sc-72316-SH, Cdx4 shRNA Plasmid (m): sc-72317-SH, Cdx4 shRNA (h) Lentiviral Particles: sc-72316-V and Cdx4 shRNA (m) Lentiviral Particles: sc-72317-V.

Molecular Weight of Cdx4: 30 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

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.

STORAGE

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

PROTOCOLS

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