



# Cdx4 (M-168): sc-67208

## 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

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 Xp13.2; Cdx4 (mouse) mapping to X D.

## SOURCE

Cdx4 (M-168) is a rabbit polyclonal antibody raised against amino acids 1-168 mapping at the N-terminus of Cdx4 of mouse origin.

## PRODUCT

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

## APPLICATIONS

Cdx4 (M-168) is recommended for detection of Cdx4 of mouse, rat and, to a lesser extent, human origin by Western Blotting (starting dilution 1:200, 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 Cdx4 siRNA (h): sc-72316 and Cdx4 siRNA (m): sc-72317.

Molecular Weight of Cdx4: 30 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (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](http://www.scbt.com) or our catalog for detailed protocols and support products.