

Nkx-2.3 (H-54): sc-292289

BACKGROUND

Nkx homeodomain proteins are members of a large family of vertebrate transcription factors that have a strong homology to the NK genes in *Drosophila*. Nkx proteins are involved in several aspects of cell type specification and maintenance of differentiated tissue functions. Nkx-2.3 contains a homeobox, a conserved NK2 domain, a C-terminal GIRAW motif and an N-terminal homology domain that is conserved among all NK2 genes. Expression of Nkx-2.3 is activated later in differentiated myocardial cells, and the protein is primarily detected in gut mesoderm, distinct regions of the brachial arches, the tongue epithelium and some domains in the developing jaws. Nkx-2.3 is necessary to function as a transcriptional activator during the earliest stages of heart formation. Overexpression of Nkx-2.3 leads to an enlarged heart due to a thickening of the myocardium caused by an increase in the overall number of myocardial cells.

REFERENCES

1. Harvey, R.P. 1996. NK2 homeobox genes and heart development. *Dev. Biol.* 178: 203-216.
2. Ray, M.K., Chen, C.Y., Schwartz, R.J. and DeMayo, F.J. 1996. Transcriptional regulation of a mouse Clara cell-specific protein (mCC10) gene by the Nkx transcription factor family members thyroid transcription factor 1 and cardiac muscle-specific homeobox protein (CSX). *Mol. Cell. Biol.* 16: 2056-2064.
3. Buchberger, A., Pabst, O., Brand, T., Seidl, K. and Arnold, H.H. 1997. Chick Nkx-2.3 represents a novel family member of vertebrate homologues to the *Drosophila* homeobox gene tinman: differential expression of cNKx-2.3 and cNKx-2.5 during heart and gut development. *Mech. Dev.* 56: 151-163.
4. Cleaver, O.B., Patterson, K.D. and Krieg, P.A. 1997. Overexpression of the tinman-related genes xNkx-2.5 and xNkx-2.3 in *Xenopus* embryos results in myocardial hyperplasia. *Development* 122: 3549-3556.
5. Pabst, O., Zweigerdt, R. and Arnold, H.H. 1999. Targeted disruption of the homeobox transcription factor Nkx-2.3 in mice results in postnatal lethality and abnormal development of small intestine and spleen. *Development* 126: 2215-2225.
6. Fu, Y., Yan, W., Mohun, T.J. and Evans, S.M. 1999. Vertebrate tinman homologues xNkx2-3 and xNkx2-5 are required for heart formation in a functionally redundant manner. *Development* 125: 4439-4449.
7. Pabst, O., Förster, R., Lipp, M., Engel, H. and Arnold, H.H. 2000. Nkx-2.3 is required for MAdCAM-1 expression and homing of lymphocytes in spleen and mucosa-associated lymphoid tissue. *EMBO J.* 19: 2015-2023.
8. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606727. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: NKX2-3 (human) mapping to 10q24.2; Nkx2-3 (mouse) mapping to 19 C3.

RESEARCH USE

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

SOURCE

Nkx-2.3 (H-54) is a rabbit polyclonal antibody raised against amino acids 307-360 mapping near the C-terminus of Nkx-2.3 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-292289 X, 200 µg/0.1 ml.

APPLICATIONS

Nkx-2.3 (H-54) is recommended for detection of Nkx-2.3 of mouse, rat and 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 Nkx-2.3 siRNA (h): sc-38725, Nkx-2.3 siRNA (m): sc-38726, Nkx-2.3 shRNA Plasmid (h): sc-38725-SH, Nkx-2.3 shRNA Plasmid (m): sc-38726-SH, Nkx-2.3 shRNA (h) Lentiviral Particles: sc-38725-V and Nkx-2.3 shRNA (m) Lentiviral Particles: sc-38726-V.

Nkx-2.3 (H-54) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Nkx-2.3: 38 kDa.

Positive Controls: NCI-H226 whole cell lysate.

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.



Try **Nkx-2.3 (4F4): sc-517182**, our highly recommended monoclonal alternative to Nkx-2.3 (H-54).