

# Nkx-2.6 (E-17): sc-15017

## BACKGROUND

Members of the NK-2 family of homeodomain proteins are key regulators of growth and development in several tissues, including brain, heart and pancreas. Nkx-2.5, also designated cardiac specific homeobox protein (Csx), is a homolog of the *Drosophila* tinman protein and is essential for normal cardiovascular development. Expression of Nkx-2.5 during cardiomyogenesis is required for cardiac septation, in which a single atrium and ventricle are separated into four chambers. Nkx-2.5 binds to DNA as a monomer, a homodimer or as a heterodimer with Nkx-2.3 or Nkx-2.6, which suggests that the specific protein-protein interactions of Nkx-2.5 are involved in its transcriptional regulatory function. Nkx-2.6, also a homolog of the *Drosophila* tinman protein, is expressed in the caudal pharyngeal pouches, the caudal heart progenitors, the sinus venosus, the outflow tract of the heart and in a short segment of the gut between stages E8.5 and E10.5 of embryogenesis. Expression of Nkx-2.6 overlaps with that of Nkx-2.5 in the pharynx and heart. However, Nkx-2.6 mutant mice are viable and fertile, which suggests that Nkx-2.6 plays a compensatory function to Nkx-2.5.

## REFERENCES

1. Nikolova, M., et al. 1997. Nkx-2.6 expression is transiently and specifically restricted to the branchial region of pharyngeal-stage mouse embryos. *Mech. Dev.* 69: 215-228.
2. Biben, C., et al. 1998. Expression of NK-2 class homeobox gene Nkx2-6 in foregut endoderm and heart. *Mech. Dev.* 73: 125-127.
3. Schwartz, R.J. et al. 1999. Building the heart piece by piece: modularity of cis-elements regulating Nkx-2.5 transcription. *Development* 126: 4187-4192.
4. Tanaka, M., et al. 1999. The cardiac homeobox gene Csx/Nkx-2.5 lies genetically upstream of multiple genes essential for heart development. *Development* 126: 1269-1280.
5. Hesabi, B., et al. 2000. The homeodomain of Nkx-2.2 carries two cooperatively acting nuclear localization signals. *Biochem. Biophys. Res. Commun.* 270: 695-700.
6. Kasahara, H., et al. 2000. Characterization of homo- and heterodimerization of cardiac Csx/Nkx-2.5 homeoprotein. *J. Biol. Chem.* 276: 4570-4580.
7. Pabst, O., et al. 2000. NKX2 gene expression in neuroectoderm but not in mesodermally derived structures depends on sonic hedgehog in mouse embryos. *Dev. Genes Evol.* 210: 47-50.
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## CHROMOSOMAL LOCATION

Genetic locus: Nkx2-6 (mouse) mapping to 14 D1.

## SOURCE

Nkx-2.6 (E-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Nkx-2.6 of mouse origin.

## RESEARCH USE

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

## 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-15017 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-15017 X, 200 µg/0.1 ml.

## APPLICATIONS

Nkx-2.6 (E-17) is recommended for detection of Nkx-2.6 of mouse and rat 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-2.6 siRNA (h): sc-38727, Nkx-2.6 siRNA (m): sc-38728, Nkx-2.6 shRNA Plasmid (h): sc-38727-SH, Nkx-2.6 shRNA Plasmid (m): sc-38728-SH, Nkx-2.6 shRNA (h) Lentiviral Particles: sc-38727-V and Nkx-2.6 shRNA (m) Lentiviral Particles: sc-38728-V.

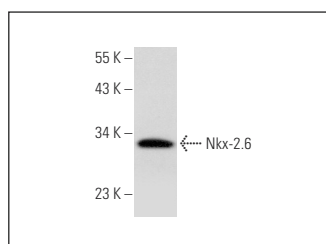
Nkx-2.6 (E-17) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



Nkx-2.6 (E-17): sc-15017. Western blot analysis of Nkx-2.6 expression in NIH/3T3 whole cell lysate.

## STORAGE

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