

# Nkx-2.5 (F-2): sc-365207

## BACKGROUND

Nkx-2.5, which is also designated cardiac specific homeobox protein (Csx), is a homeodomain-containing nuclear transcription protein of the Nkx-2 gene family. These transcriptional activators, which include thyroid transcription factor-1 (TTF-1), regulate the expression of tissue specific genes and are required for maintaining the differentiated phenotypes of various lineages. Nkx-2.5 is a homolog to the tinman protein expressed in *Drosophila*, 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. During embryonic development, Nkx-2.5 is also expressed in the foregut, thyroid, spleen and stomach, while in the adult expression is predominantly restricted to the heart. Mutations that disrupt Nkx-2.5 can result in atrial-septal defects, embryonic lethality and congenital heart disease.

## REFERENCES

1. Guazzi, S., et al. 1990. Thyroid nuclear factor 1 (TTF-1) contains a homeodomain and displays a novel DNA binding specificity. *EMBO J.* 9: 3631-3639.
2. Komuro, I., et al. 1993. Csx: a murine homeobox-containing gene specifically expressed in the developing heart. *Proc. Natl. Acad. Sci. USA* 90: 8145-8149.
3. Lints, T.J., et al. 1993. Nkx-2.5: a novel murine homeobox gene expressed in early heart progenitor cells and their myogenic descendants. *Development* 119: 419-431.
4. Turbay, D., et al. 1996. Molecular cloning, chromosomal mapping, and characterization of the human cardiac-specific homeobox gene hCsx. *Mol. Med.* 2: 86-96.
5. Schott, J.J., et al. 1998. Congenital heart disease caused by mutations in the transcription factor Nkx-2.5. *Science* 281: 108-111.

## CHROMOSOMAL LOCATION

Genetic locus: NKX2-5 (human) mapping to 5q35.1.

## SOURCE

Nkx-2.5 (F-2) is a mouse monoclonal antibody raised against amino acids 24-137 mapping near the N-terminus of Nkx-2.5 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> lambda light chain 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-365207 X, 200 µg/0.1 ml.

## STORAGE

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

## RESEARCH USE

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

## APPLICATIONS

Nkx-2.5 (F-2) is recommended for detection of Nkx-2.5 of human origin by Western Blotting (starting dilution 1:100, 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-2.5 siRNA (h): sc-36075, Nkx-2.5 shRNA Plasmid (h): sc-36075-SH and Nkx-2.5 shRNA (h) Lentiviral Particles: sc-36075-V.

Nkx-2.5 (F-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

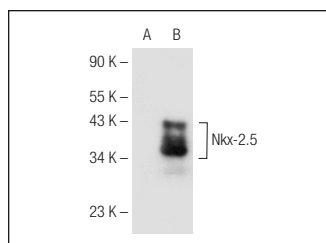
Molecular Weight of Nkx-2.5: 40 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, HeLa whole cell lysate: sc-2200 or Nkx-2.5 (h): 293T Lysate: sc-114181.

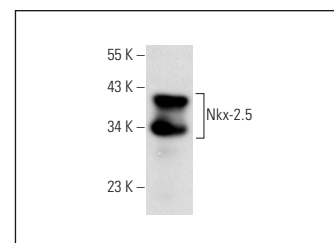
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-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). 3) Immunofluorescence: use m-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA




Nkx-2.5 (F-2): sc-365207. Western blot analysis of Nkx-2.5 expression in non-transfected: sc-117752 (A) and human Nkx-2.5 transfected: sc-114181 (B) 293T whole cell lysates.



Nkx-2.5 (F-2): sc-365207. Western blot analysis of Nkx-2.5 expression in CCRF-CEM whole cell lysate. Detection reagent used: m-IgGλ BP-HRP (Cruz Marker): sc-516132-CM.

## SELECT PRODUCT CITATIONS

1. Bouveret, R., et al. 2015. NKX2-5 mutations causative for congenital heart disease retain functionality and are directed to hundreds of targets. *Elife* 4: e06942.



See **Nkx-2.5 (A-3): sc-376565** for Nkx-2.5 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.