SANTA CRUZ BIOTECHNOLOGY, INC.

Nkx-2.5 (N-19): sc-8697

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: NKX2-5 (human) mapping to 5q35.1, NKX2-3 (human) mapping to 10q24.2; Nkx2-5 (mouse) mapping to 17 A3.3, Nkx2-3 (mouse) mapping to 19 C3.

SOURCE

Nkx-2.5 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Nkx-2.5 of human origin.

PRODUCT

Each vial contains 100 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-8697 X, 100 µg/0.1 ml.

Blocking peptide available for competition studies, sc-8697 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Nkx-2.5 (N-19) is recommended for detection of Nkx-2.5 and, to a lesser extent, 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).

Nkx-2.5 (N-19) is also recommended for detection of Nkx-2.5 and, to a lesser extent, Nkx-2.3 in additional species, including canine, bovine and porcine.

Nkx-2.5 (N-19) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Nkx-2.5: 40 kDa.

Positive Controls: Nkx-2.5 (h2): 293T Lysate: sc-159566, A549 cell lysate: sc-2413 or HeLa whole cell lysate: sc-2200.

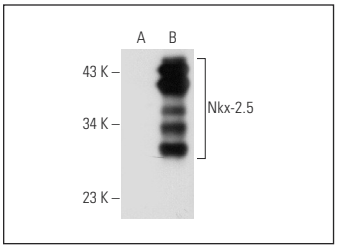
RESEARCH USE

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

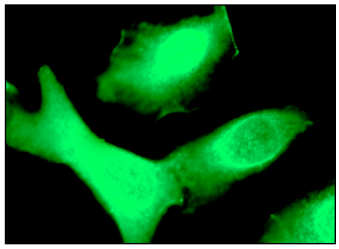
STORAGE

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

DATA



Nkx-2.5 (N-19): sc-8697. Western blot analysis of Nkx-2.5 expression in non-transfected: sc-117752 (**A**) and human Nkx-2.5 transfected: sc-159566 (**B**) 293T whole cell lysates.



Nkx-2.5 (N-19): sc-8697. Immunofluorescence staining of methanol-fixed A549 cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Pikkarainen, S., et al. 2003. GATA-4 is a nuclear mediator of mechanical stretch-activated hypertrophic program. J. Biol. Chem. 278: 23807-23816.
2. Pikkarainen, S., et al. 2003. Endothelin-1-specific activation of B-type natriuretic peptide gene via p38 mitogen-activated protein kinase and nuclear ETS factors. J. Biol. Chem. 278: 3969-3975.
3. Dentice, M., et al. 2003. The different cardiac expression of the type 2 iodothyronine deiodinase gene between human and rat is related to the differential response of the Dio2 genes to Nkx-2.5 and GATA-4 transcription factors. Mol. Endocrinol. 17: 1508-1521.
4. Hahurij, N.D., et al. 2011. Accessory atrioventricular myocardial pathways in mouse heart development; substrate for supraventricular tachycardias. Pediatr. Res. 70: 37-43.
5. Franklin, S., et al. 2011. Specialized compartments of cardiac nuclei exhibit distinct proteomic anatomy. Mol. Cell. Proteomics 10: M110.
6. Hahurij, N.D., et al. 2011. Accessory atrioventricular myocardial pathways in mouse heart development; substrate for supraventricular tachycardias. Pediatr. Res. 70: 37-43.
7. van den Boogaard, M., et al. 2012. Genetic variation in T-box binding element functionally affects SCN5A/SCN10A enhancer. J. Clin. Invest. 122: 2519-2530.

PROTOCOLS

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