

Nkx-2.2 (N-16): sc-15013

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. During neural development, sonic hedgehog (Shh) is known to control cell fate and mitogenesis, which is correlated with Shh dose-dependent expression of several genes, including Nkx-2.1, Nkx-2.2 and Nkx-2.9. Specifically, the Nkx-2.2 protein is responsible for directing ventral neuronal patterning in response to graded Shh signaling. In the pancreas, Nkx-2.2 is expressed in α , β and pancreatic polypeptide (PP) cells, but not in δ cells. Nkx-2.2 expression is required for differentiation of pancreatic β cells, which produce insulin. Homozygous null mutations of the Nkx-2.2 gene in mice lead to severe hyperglycemia and death shortly after birth, which suggests that Nkx-2.2 may be an important therapeutic target for pancreatic diseases, including diabetes and cancer.

REFERENCES

1. Sussel, L., et al. 1998. Mice lacking the homeodomain transcription factor Nkx2.2 have diabetes due to arrested differentiation of pancreatic β cells. *Development* 125: 2213-2221.
2. Briscoe, J., et al. 1999. Homeobox gene Nkx2.2 and specification of neuronal identity by graded Sonic hedgehog signalling. *Nature* 398: 622-627.
3. St-Onge, L., et al. 1999. Pancreas development and diabetes. *Curr. Opin. Genet. Dev.* 9: 295-300.
4. Hessabi, B., et al. 2000. The homeodomain of Nkx2.2 carries two cooperatively acting nuclear localization signals. *Biochem. Biophys. Res. Commun.* 270: 695-700.
5. Hynes, M., et al. 2000. The seven-transmembrane receptor smoothened cell-autonomously induces multiple ventral cell types. *Nat. Neurosci.* 3: 41-46.
6. 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.

CHROMOSOMAL LOCATION

Genetic locus: NKX2-2 (human) mapping to 20p11.22; Nkx2-2 (mouse) mapping to 2 H.

SOURCE

Nkx-2.2 (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Nkx-2.2 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-15013 P, (100 μ g 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-15013 X, 200 μ g/0.1 ml.

APPLICATIONS

Nkx-2.2 (N-16) is recommended for detection of Nkx-2.2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Nkx-2.2 (N-16) is also recommended for detection of Nkx-2.2 in additional species, including bovine and porcine.

Suitable for use as control antibody for Nkx-2.2 siRNA (h): sc-38723, Nkx-2.2 siRNA (m): sc-38724, Nkx-2.2 shRNA Plasmid (h): sc-38723-SH, Nkx-2.2 shRNA Plasmid (m): sc-38724-SH, Nkx-2.2 shRNA (h) Lentiviral Particles: sc-38723-V and Nkx-2.2 shRNA (m) Lentiviral Particles: sc-38724-V.

Nkx-2.2 (N-16) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Nkx-2.2: 30 kDa.

Positive Controls: Mouse brain extract: sc-2253, RAW 264.7 nuclear extract: sc-24961 or NIH/3T3 nuclear extract: sc-2138.

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) 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.

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.

PROTOCOLS

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