

Nkx-2.2 (D-4): sc-398951

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 Nkx-2.2 have diabetes due to arrested differentiation of pancreatic β cells. *Development* 125: 2213-2221.
2. Briscoe, J., et al. 1999. Homeobox gene Nkx-2.2 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.

CHROMOSOMAL LOCATION

Genetic locus: NKX2-2 (human) mapping to 20p11.22; Nkx2-2 (mouse) mapping to 2 G2.

SOURCE

Nkx-2.2 (D-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 59-87 within an internal region of Nkx-2.2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa 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-398951 X, 200 μ g/0.1 ml.

Nkx-2.2 (D-4) is available conjugated to agarose (sc-398951 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398951 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398951 PE), fluorescein (sc-398951 FITC), Alexa Fluor® 488 (sc-398951 AF488), Alexa Fluor® 546 (sc-398951 AF546), Alexa Fluor® 594 (sc-398951 AF594) or Alexa Fluor® 647 (sc-398951 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398951 AF680) or Alexa Fluor® 790 (sc-398951 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398951 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

Nkx-2.2 (D-4) is recommended for detection of Nkx-2.2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

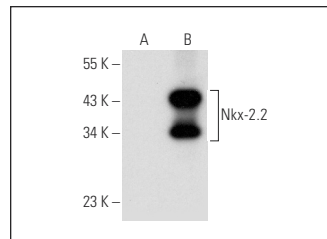
Suitable for use as control antibody for Nkx-2.2 siRNA (h): sc-38723, Nkx-2.2 siRNA (m): sc-38724, Nkx-2.2 shRNA Plasmid (h): sc-38723-SH, Nkx-2.2 shRNA Plasmid (m): sc-38724-SH, Nkx-2.2 shRNA (h) Lentiviral Particles: sc-38723-V and Nkx-2.2 shRNA (m) Lentiviral Particles: sc-38724-V.

Nkx-2.2 (D-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

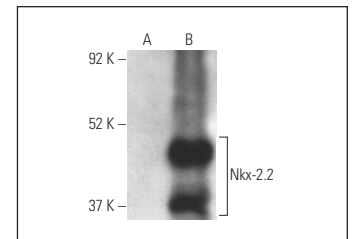
Molecular Weight of Nkx-2.2: 30 kDa.

Positive Controls: Nkx-2.2 (h): 293T Lysate: sc-369812.

DATA



Nkx-2.2 (D-4): sc-398951. Western blot analysis of Nkx-2.2 expression in non-transfected: sc-117752 (A) and human Nkx-2.2 transfected: sc-369812 (B) 293T whole cell lysates.



Nkx-2.2 (D-4) HRP: sc-398951 HRP. Direct western blot analysis of Nkx-2.2 expression in non-transfected: sc-117752 (A) and human Nkx-2.2 transfected: sc-369812 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Hung, Y.P., et al. 2021. Identification of EWSR1-NFATC2 fusion in simple bone cysts. *Histopathology* 78: 849-856.
2. Dobosz, A.M., et al. 2022. Inhibition of stearoyl-CoA desaturase 1 in the mouse impairs pancreatic islet morphogenesis and promotes loss of β -cell identity and α -cell expansion in the mature pancreas. *Mol. Metab.* 67: 101659.

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 for detailed protocols and support products.