SANTA CRUZ BIOTECHNOLOGY, INC.

Nkx-2.2 (F-2): sc-514161

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.
4. Hessabi, B., et al. 2000. The homeodomain of Nkx-2.2 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.

CHROMOSOMAL LOCATION

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

SOURCE

Nkx-2.2 (F-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 61-87 within an internal region of Nkx-2.2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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-514161 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-514161 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

Nkx-2.2 (F-2) 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 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-2.2 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 (F-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

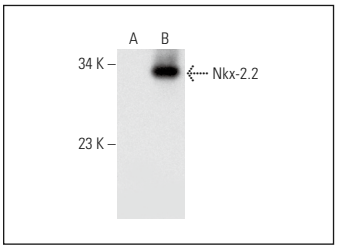
Molecular Weight of Nkx-2.2: 30 kDa.

Positive Controls: C6 whole cell lysate: sc-364373 or Nkx-2.2 (h): 293T Lysate: sc-369812.

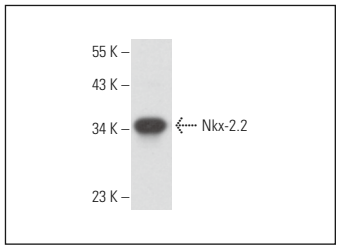
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Nkx-2.2 (F-2): sc-514161. 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 (F-2): sc-514161. Western blot analysis of Nkx-2.2 expression in C6 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Markey, F.B., et al. 2021. Identification of a new transcriptional co-regulator of STEAP1 in Ewing's sarcoma. Cells 10: 1300.

STORAGE

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