

Nkx-6.1 (C-14): sc-15030

BACKGROUND

Members of the Nkx 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-6.1. Specifically, Nkx-6.1 is responsible for cellular differentiation in the ventral neural tube and spinal meninges in response to Shh. In the pancreas, Nkx-6.1 is exclusively expressed in the islets of Langerhans in differentiating and mature B cells, which produce Insulin. The presence of Pdx-1 is required for the expression of Nkx-6.1 as well as other pancreatic B cell specific genes, including Insulin, Glut2 and IAPP. Subsequently, Nkx-6.1 binds to the DNA consensus sequence, TTAATTAC, to direct the repression of specific genes in B cells.

REFERENCES

1. Oster, A., et al. 1998. Homeobox gene product Nkx-6.1 immunoreactivity in nuclei of endocrine cells of rat and mouse stomach. *J. Histochem. Cytochem.* 46: 717-721.
2. Briscoe, J., et al. 1999. Homeobox gene Nkx-2.2 and specification of neuronal identity by graded Sonic hedgehog signalling. *Nature* 398: 622-667.
3. Jorgensen, M.C., et al. 1999. Cloning and DNA-binding properties of the rat pancreatic β -cell-specific factor Nkx-6.1. *FEBS Lett.* 461: 287-294.
4. Cai, J., et al. 2000. Evidence for the differential regulation of Nkx-6.1 expression in the ventral spinal cord and foregut by Shh-dependent and -independent mechanisms. *Genesis* 27: 6-11.
5. 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.
6. Watada, H., et al. 2000. Transcriptional and translational regulation of β -cell differentiation factor Nkx-6.1. *J. Biol. Chem.* 275: 34224-34230.

CHROMOSOMAL LOCATION

Genetic locus: NKX6-1 (human) mapping to 4q21.23, Nkx-6.3 (human) mapping to 8p11.21; Nkx6-1 (mouse) mapping to 5 E4, Nkx6-3 (mouse) mapping to 8 A2.

SOURCE

Nkx-6.1 (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Nkx-6.1 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-15030 X, 200 μ g/0.1 ml.

Blocking peptide available for competition studies, sc-15030 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Nkx-6.1 (C-14) is recommended for detection of Nkx-6.1 and Nkx-6.3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

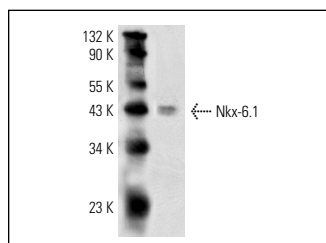
Nkx-6.1 (C-14) is also recommended for detection of Nkx-6.1 and Nkx-6.3 in additional species, including equine, canine, bovine, porcine and avian.

Nkx-6.1 (C-14) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

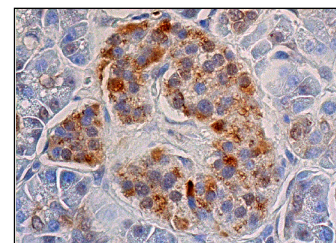
Molecular Weight of Nkx-6.1: 44/46 kDa.

Positive Controls: rat pancreas extract: sc-364806.

DATA



Nkx-6.1 (C-14): sc-15030. Western blot analysis of Nkx-6.1 expression in rat pancreas tissue extract.



Nkx-6.1 (C-14): sc-15030. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing nuclear and cytoplasmic staining of Islet of Langerhans and subsets of glandular cells.

SELECT PRODUCT CITATIONS

1. Won, J.G., et al. 2006. Clinical features and morphological characterization of 10 patients with noninsulinoma pancreatogenous hypoglycaemia syndrome (NIPHS). *Clin. Endocrinol.* 65: 566-578
2. Baek, H., et al. 2012. Autonomous isolation, long-term culture and differentiation potential of adult salivary gland-derived stem/progenitor cells. *J. Tissue Eng. Regen. Med.* E-published.

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.



Try **Nkx-6.1 (5B8): sc-130385**, our highly recommended monoclonal alternative to Nkx-6.1 (C-14).