

Neurogenin 3 (C-7): sc-374442

BACKGROUND

The neurogenin family of proteins belongs to the basic helix-loop-helix (bHLH) superfamily and consists of Neurogenin 1, Neurogenin 2 and Neurogenin 3 (also designated ngn3). bHLH members are transcriptional regulators that determine cell fate. Neurogenin 3 is expressed in discrete regions of developing neurons and in the embryonic pancreatic islets of Langerhans. HNF-6 (hepatocyte nuclear factor 6) acts as a positive regulator of Neurogenin 3 by binding to and stimulating the neurogenin gene promoter. Neurogenin 3 is involved in the initial differentiation of the four islet cell types, while a network of transcription factors, including Hlxb9, Isl1, NeuroD, Nkx-2.2, Nkx-6.4, Pax-4, Pax-6, PDX-1 and Mash1, are required for final differentiation. Neurogenin 3 acts upstream of NeuroD in a bHLH cascade. Neurogenin 3 activates the expression of NeuroD at the onset of islet cell differentiation through box sequences E1 and E3 in the NeuroD promoter.

CHROMOSOMAL LOCATION

Genetic locus: Neurog3 (mouse) mapping to 10 B4.

SOURCE

Neurogenin 3 (C-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 15-49 near the N-terminus of Neurogenin 3 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Neurogenin 3 (C-7) is available conjugated to agarose (sc-374442 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374442 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374442 PE), fluorescein (sc-374442 FITC), Alexa Fluor® 488 (sc-374442 AF488), Alexa Fluor® 546 (sc-374442 AF546), Alexa Fluor® 594 (sc-374442 AF594) or Alexa Fluor® 647 (sc-374442 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374442 AF680) or Alexa Fluor® 790 (sc-374442 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374442 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Neurogenin 3 (C-7) is recommended for detection of Neurogenin 3 of mouse and rat 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 Neurogenin 3 siRNA (m): sc-42080, Neurogenin 3 shRNA Plasmid (m): sc-42080-SH and Neurogenin 3 shRNA (m) Lentiviral Particles: sc-42080-V.

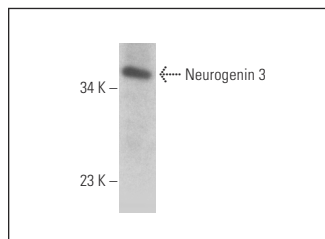
Molecular Weight of Neurogenin 3: 27 kDa.

Positive Controls: mouse liver extract: sc-2256.

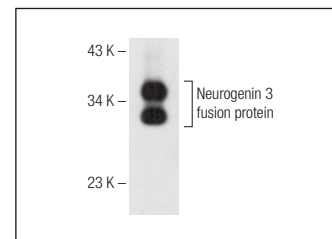
STORAGE

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

DATA



Neurogenin 3 (C-7): sc-374442. Western blot analysis of Neurogenin 3 expression in mouse liver tissue extract.



Neurogenin 3 (C-7): sc-374442. Western blot analysis of mouse recombinant Neurogenin 3 fusion protein.

SELECT PRODUCT CITATIONS

- Wei, S., et al. 2018. Intermittent administration of a fasting-mimicking diet intervenes in diabetes progression, restores β cells and reconstructs gut microbiota in mice. *Nutr. Metab.* 15: 80.
- Wei, S., et al. 2018. Intermittent administration of a leucine-deprived diet is able to intervene in type 2 diabetes in db/db mice. *Heliyon* 4: e00830.
- He, Q., et al. 2021. Mesenchymal stem cell-derived exosomal miR-146a reverses diabetic β -cell dedifferentiation. *Stem Cell Res. Ther.* 12: 449.
- Zhou, D., et al. 2021. Acarbose ameliorates spontaneous type-2 diabetes in db/db mice by inhibiting PDX-1 methylation. *Mol. Med. Rep.* 23: 72.
- Cui, X., et al. 2022. Pro- α -cell-derived β -cells contribute to β -cell neogenesis induced by antagonistic glucagon receptor antibody in type 2 diabetic mice. *iScience* 25: 104567.
- Yuan, H., et al. 2022. Crispr-Cas9 mediated complete deletion of glucagon receptor in mice display hyperglucagonemia and α -cell hyperplasia. *Biochem. Biophys. Res. Commun.* 643: 121-128.
- Kuo, T.L., et al. 2023. ARID1A loss in pancreas leads to islet developmental defect and metabolic disturbance. *iScience* 26: 105881.
- Miura, M., et al. 2023. SIRT1 controls enteroendocrine progenitor cell proliferation in high-fat diet-fed mice. *Cell. Mol. Gastroenterol. Hepatol.* 16: 1040-1057.

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.

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