

Neurogenin 3 (E-8): sc-376607

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 Hlx9, 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.

REFERENCES

1. Jacquemin, P., et al. 2000. Transcription factor hepatocyte nuclear factor 6 regulates pancreatic endocrine cell differentiation and controls expression of the proendocrine gene *ngn3*. *Mol. Cell. Biol.* 20: 4445-4454.
2. Gradwohl, G., et al. 2000. Neurogenin 3 is required for the development of the four endocrine cell lineages of the pancreas. *Proc. Natl. Acad. Sci. USA* 97: 1607-1611.
3. Schwitzgebel, V.M., et al. 2000. Expression of Neurogenin 3 reveals an islet cell precursor population in the pancreas. *Development* 127: 3533-3542.
4. Jensen, J., et al. 2000. Independent development of pancreatic α - and β -cells from Neurogenin 3-expressing precursors: a role for the notch pathway in repression of premature differentiation. *Diabetes* 49: 163-176.
5. Huang, H.P., et al. 2000. Regulation of the pancreatic islet-specific gene BETA2 (*neuroD*) by Neurogenin 3. *Mol. Cell. Biol.* 20: 3292-3307.

CHROMOSOMAL LOCATION

Genetic locus: *NEUROG3* (human) mapping to 10q22.1.

SOURCE

Neurogenin 3 (E-8) is a mouse monoclonal antibody raised against amino acids 1-80 of Neurogenin 3 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Neurogenin 3 (E-8) is available conjugated to agarose (sc-376607 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376607 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376607 PE), fluorescein (sc-376607 FITC), Alexa Fluor[®] 488 (sc-376607 AF488), Alexa Fluor[®] 546 (sc-376607 AF546), Alexa Fluor[®] 594 (sc-376607 AF594) or Alexa Fluor[®] 647 (sc-376607 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-376607 AF680) or Alexa Fluor[®] 790 (sc-376607 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

Neurogenin 3 (E-8) is recommended for detection of Neurogenin 3 of 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 Neurogenin 3 siRNA (h): sc-42079, Neurogenin 3 shRNA Plasmid (h): sc-42079-SH and Neurogenin 3 shRNA (h) Lentiviral Particles: sc-42079-V.

Molecular Weight of Neurogenin 3: 27 kDa.

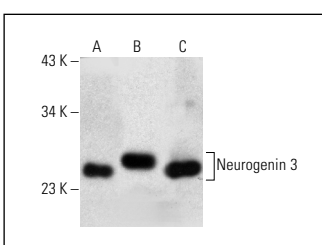
Positive Controls: MIA PaCa-2 cell lysate: sc-2285, NCI-H460 whole cell lysate: sc-364235 or human liver extract: sc-363766.

RECOMMENDED SUPPORT REAGENTS

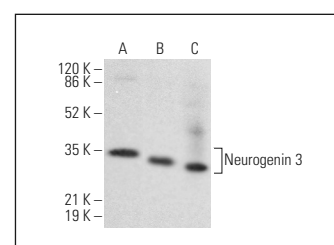
To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



Neurogenin 3 (E-8): sc-376607. Western blot analysis of Neurogenin 3 expression in human liver (A), human pancreas (B) and human testis (C) tissue extracts.



Neurogenin 3 (E-8): sc-376607. Western blot analysis of Neurogenin 3 expression in MIA PaCa-2 (A) and NCI-H460 (B) whole cell lysates and human liver tissue extract (C).

SELECT PRODUCT CITATIONS

1. Watanabe, A., et al. 2021. CD82 is a marker to isolate β cell precursors from human iPS cells and plays a role for the maturation of β cells. *Sci. Rep.* 11: 9530.

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.