

Phox2b (B-11): sc-376997

BACKGROUND

Phox2a (also designated Arx1) and Phox2b are closely related, paired-homeodomain transcription factors that are necessary for neuronal differentiation throughout the developing sympathetic, parasympathetic and enteric ganglia. All enteric nervous system cells evolve from the neural crest, and all cells that are undifferentiated initially express Phox2b. The cells that begin to differentiate along a neuronal lineage continue to express Phox2b, and begin to express Phox2a. Phox2b is required for the differentiation of all central and nonperipheral noradrenergic centers in the brain. In contrast, Phox2a controls only the differentiation of the main noradrenergic center of the brain, the locus coeruleus. Both Phox2a and Phox2b are crucial for the regulation of endogenous tyrosine hydroxylase and dopamine- β hydroxylase, which are transiently expressed in neural crest cells. In addition, Phox2 proteins are sufficient to promote sympathetic neuron generation.

REFERENCE

1. Johnson, K.R., et al. 1996. Mapping of the ARX homeodomain gene to mouse chromosome 7 and human chromosome 11q13. *Genomics* 33: 527-531.
2. Lo, L., et al. 1999. Specification of neurotransmitter identity by Phox2 proteins in neural crest stem cells. *Neuron* 22: 693-705.
3. Pattyn, A., et al. 1999. The homeobox gene Phox2b is essential for the development of autonomic neural crest derivatives. *Nature* 399: 366-370.

CHROMOSOMAL LOCATION

Genetic locus: PHOX2B (human) mapping to 4p13; Phox2b (mouse) mapping to 5 C3.1.

SOURCE

Phox2b (B-11) is a mouse monoclonal antibody raised against amino acids 11-70 mapping near the N-terminus of Phox2b 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-376997 X, 200 μ g/0.1 ml.

Phox2b (B-11) is available conjugated to agarose (sc-376997 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376997 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376997 PE), fluorescein (sc-376997 FITC), Alexa Fluor® 488 (sc-376997 AF488), Alexa Fluor® 546 (sc-376997 AF546), Alexa Fluor® 594 (sc-376997 AF594) or Alexa Fluor® 647 (sc-376997 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376997 AF680) or Alexa Fluor® 790 (sc-376997 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

Phox2b (B-11) is recommended for detection of Phox2b 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).

Phox2b (B-11) is also recommended for detection of Phox2b in additional species, including equine, canine and bovine.

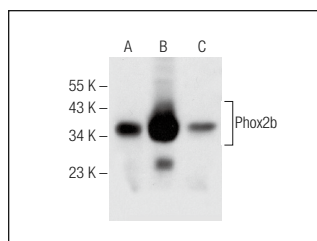
Suitable for use as control antibody for Phox2b siRNA (h): sc-38764, Phox2b siRNA (m): sc-38765, Phox2b shRNA Plasmid (h): sc-38764-SH, Phox2b shRNA Plasmid (m): sc-38765-SH, Phox2b shRNA (h) Lentiviral Particles: sc-38764-V and Phox2b shRNA (m) Lentiviral Particles: sc-38765-V.

Phox2b (B-11) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

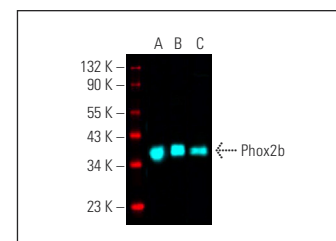
Molecular Weight of Phox2b: 32 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, IMR-32 cell lysate: sc-2409 or Neuro-2A whole cell lysate: sc-364185.

DATA



Phox2b (B-11): sc-376997. Western blot analysis of Phox2b expression in SK-N-SH (A), IMR-32 (B) and Neuro-2A (C) whole cell lysates.



Phox2b (B-11) Alexa Fluor® 647: sc-376997 AF647. Direct fluorescent western blot analysis of Phox2b expression in IMR-32 (A), SH-SY5Y (B) and SK-N-SH (C) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 790: sc-516731.

SELECT PRODUCT CITATIONS

1. Regadas, I., et al. 2013. Several *cis*-regulatory elements control mRNA stability, translation efficiency, and expression pattern of Prxl1 (paired related homeobox protein-like 1). *J. Biol. Chem.* 288: 36285-36301.
2. Decaestecker, B., et al. 2018. TBX2 is a neuroblastoma core regulatory circuitry component enhancing MYCN/FOXO1 reactivation of DREAM targets. *Nat. Commun.* 9: 4866.
3. Durand, S., et al. 2019. ALK mutation dynamics and clonal evolution in a neuroblastoma model exhibiting two ALK mutations. *Oncotarget* 10: 4937-4950.

RESEARCH USE

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