

# Brn-3b (D-8): sc-514474

## BACKGROUND

The Brn family of transcription factors are found in a highly restricted subset of neurons and are critical to the early embryonic development of the central nervous system. Brn-1 and Brn-2 are class III POU (Pit-Oct-Unc) domain proteins, whereas Brn-3 is a class IV POU domain protein. Three Brn-3 proteins have been described and are designated Brn-3a, Brn-3b and Brn-3c. While Brn-3a and Brn-3c stimulate transcription, Brn-3b generally functions as a transcriptional repressor. However, Brn-3b, but not Brn-3a, has been shown to regulate the expression of the acetylcholine receptor. Interestingly, Brn-3a has two functional transactivating domains, one at the amino-terminus and one at the carboxy-terminus. Brn-2 is thought to be involved in smooth muscle cell development and differentiation.

## REFERENCES

- Collum, R.G., et al. 1992. A novel POU homeodomain gene specifically expressed in cells of the developing mammalian nervous system. *Nucleic Acids Res.* 20: 4919-4925.
- Xiang, M., et al. 1993. The gene for Brn-3b: a POU-domain protein expressed in retinal ganglion cells is assigned to the q31.2 region of chromosome 4. (Abstract) *Human Genome Mapping Workshop 93: 7.*

## CHROMOSOMAL LOCATION

Genetic locus: POU4F2 (human) mapping to 4q31.22; Pou4f2 (mouse) mapping to 8 C1.

## SOURCE

Brn-3b (D-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 227-251 within an internal region of Brn-3b of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> 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-514474 X, 200 µg/0.1 ml.

Brn-3b (D-8) is available conjugated to agarose (sc-514474 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514474 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514474 PE), fluorescein (sc-514474 FITC), Alexa Fluor® 488 (sc-514474 AF488), Alexa Fluor® 546 (sc-514474 AF546), Alexa Fluor® 594 (sc-514474 AF594) or Alexa Fluor® 647 (sc-514474 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514474 AF680) or Alexa Fluor® 790 (sc-514474 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514474 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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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

Brn-3b (D-8) is recommended for detection of Brn-3b 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).

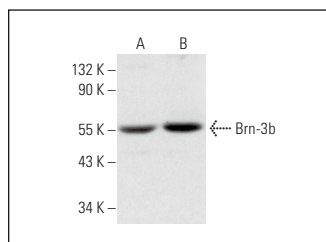
Suitable for use as control antibody for Brn-3b siRNA (h): sc-38766, Brn-3b siRNA (m): sc-38767, Brn-3b shRNA Plasmid (h): sc-38766-SH, Brn-3b shRNA Plasmid (m): sc-38767-SH, Brn-3b shRNA (h) Lentiviral Particles: sc-38766-V and Brn-3b shRNA (m) Lentiviral Particles: sc-38767-V.

Brn-3b (D-8) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

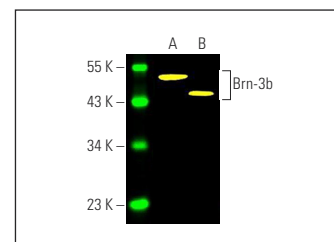
Molecular Weight of Brn-3b: 51 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, rat eye extract: sc-364805 or HeLa whole cell lysate: sc-2200.

## DATA



Brn-3b (D-8): sc-514474. Western blot analysis of Brn-3b expression in HeLa (A) and MCF7 (B) whole cell lysates.



Brn-3b (D-8) Alexa Fluor® 488: sc-514474 AF488. Direct fluorescent western blot analysis of Brn-3b expression in MCF7 whole cell lysate (A) and rat eye tissue extract (B). Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 680: sc-516730.

## SELECT PRODUCT CITATIONS

- VanderWall, K.B., et al. 2019. Astrocytes regulate the development and maturation of retinal ganglion cells derived from human pluripotent stem cells. *Stem Cell Reports* 12: 201-212.
- Gao, M.L., et al. 2020. Patient-specific retinal organoids recapitulate disease features of late-onset retinitis pigmentosa. *Front. Cell Dev. Biol.* 8: 128.
- Kim, B.J., et al. 2021. RERE deficiency causes retinal and optic nerve atrophy through degeneration of retinal cells. *Dev. Dyn.* 250: 1398-1409.
- Tsai, N.Y., et al. 2022. *Trans*-Seq maps a selective mammalian retinotectal synapse instructed by Nephronectin. *Nat. Neurosci.* 25: 659-674.

## RESEARCH USE

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