SANTA CRUZ BIOTECHNOLOGY, INC.

Brn-3c (QQ8): sc-81980

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: POU4F3 (human) mapping to 5q32, Pou4f3 (mouse) mapping to 18 B3.

SOURCE

Brn-3c (QQ8) is a mouse monoclonal antibody raised against recombinant Brn-3c of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Brn-3c (QQ8) is recommended for detection of Brn-3c of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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-3c siRNA (h): sc-38768, Brn-3c siRNA (m): sc-38769, Brn-3c shRNA Plasmid (h): sc-38768-SH, Brn-3c shRNA Plasmid (m): sc-38769-SH, Brn-3c shRNA (h) Lentiviral Particles: sc-38768-V and Brn-3c shRNA (m) Lentiviral Particles: sc-38769-V.

Molecular Weight of Brn-3c: 37 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

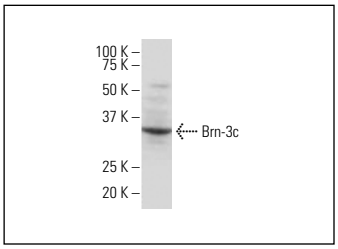
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

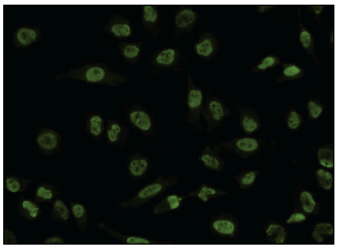
STORAGE

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

DATA



Brn-3c (QQ8): sc-81980. Western blot analysis of Brn-3c expression in HeLa nuclear extract.



Brn-3c (QQ8): sc-81980. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Nadal-Nicolás, F.M., et al. 2012. Whole number, distribution and co-expression of Brn3 transcription factors in retinal ganglion cells of adult albino and pigmented rats. PLoS ONE 7: e49830.
2. Liu, Z., et al. 2014. *In vivo* generation of immature inner hair cells in neonatal mouse cochleae by ectopic Atoh1 expression. PLoS ONE 9: e89377.
3. Cox, B.C., et al. 2014. Spontaneous hair cell regeneration in the neonatal mouse cochlea *in vivo*. Development 141: 816-829.
4. Burns, J.C., et al. 2015. Single-cell RNA-Seq resolves cellular complexity in sensory organs from the neonatal inner ear. Nat. Commun. 6: 8557.
5. Tong, L., et al. 2015. Selective deletion of cochlear hair cells causes rapid age-dependent changes in spiral ganglion and cochlear nucleus neurons. J. Neurosci. 35: 7878-7891.
6. Li, X., et al. 2016. Loss of AP-2δ reduces retinal ganglion cell numbers and axonal projections to the superior colliculus. Mol. Brain 9: 62.
7. Rohacek, A.M., et al. 2017. ESRP1 mutations cause hearing loss due to defects in alternative splicing that disrupt cochlear development. Dev. Cell 43: 318-331.
8. Bucks, S.A., et al. 2017. Supporting cells remove and replace sensory receptor hair cells in a balance organ of adult mice. Elife 6 pii: e18128.
9. Zhang, T., et al. 2017. Six1 is essential for differentiation and patterning of the mammalian auditory sensory epithelium. PLoS Genet. 13: e1006967.
10. Liu, J., et al. 2018. Tbr1 instructs laminar patterning of retinal ganglion cell dendrites. Nat. Neurosci. 21: 659-670.
11. McInturff, S., et al. 2018. Characterization of spatial and temporal development of Type I and Type II hair cells in the mouse utricle using new cell-type-specific markers. Biol. Open 7 pii: bio038083.

RESEARCH USE

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