SANTA CRUZ BIOTECHNOLOGY, INC.

ASIC4 (N-20): sc-22324

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Degenerin/epithelial sodium channel (DEG/ENaC) superfamily members are amiloride-sensitive sodium channels that contain intracellular N- and C-termini, two hydrophobic transmembrane regions and a cysteine-containing extracellular loop. Acid sensing ion channel ASIC1, also designated ACCN2, BNAC2 and ASIC1a, is present in brain as a 4.3-kb transcript with localization to rat dorsal root ganglia. *In situ* hybridization of rat brain suggests that ASIC1 is most abundant in the main olfactory bulb, cerebral cortex, hippocampal formation, habenula, basolateral amygdaloid nuclei and cerebellum. ASIC1 and H^+-gated currents may contribute to the development of fear and anxiety. ASIC2, also designated ACCN1 (amiloride-sensitive cation channel 1, neuronal), mammalian degenerin, BNAC1 (MDEG) and brain Na^+ channel 1, mediate the normal detection of light touch. ASIC2 mRNA is abundant in brain, specifically in neurons. ASIC2 is expressed as 2.7 and 3.7 kb transcripts in brain and spinal cord tissues. ASIC3, also designated SLNAC1 and TNaC1, mediates detection of lasting pH changes and is involved in modulating moderate- to high-intensity pain sensation. ASIC4, also designated ACCN4 and BNAC4, is abundant in pituitary gland and is also present in the inner ear.

REFERENCES

1. Garcia-Anoveros, J., et al. 1997. BNAC1 and BNAC2 constitute a new family of human neuronal sodium channels related to degenerins and epithelial sodium channels. Proc. Natl. Acad. Sci. USA 94: 1459-1464.
2. Waldmann, R., et al. 1997. A proton-gated cation channel involved in acid-sensing. Nature 386: 173-177.
3. Price, M.P., et al. 2000. The mammalian sodium channel BNC1 is required for normal touch sensation. Nature 407: 1007-1011.
4. Grunder, S., et al. 2001. Acid-sensing ion channel (ASIC) 4 gene: physical mapping, genomic organisation, and evaluation as a candidate for paroxysmal dystonia. Eur. J. Hum. Genet. 9: 672-676.
5. Chen, C.C., et al. 2002. A role for ASIC3 in the modulation of high-intensity pain stimuli. Proc. Natl. Acad. Sci. USA 99: 8992-8997.
6. Wemmie, J.A., et al. 2004. Overexpression of acid-sensing ion channel1a in transgenic mice increases acquired fear-related behavior. Proc. Natl. Acad. Sci. USA 101: 3621-3626.

CHROMOSOMAL LOCATION

Genetic locus: ACCN4 (human) mapping to 2q35; Accn4 (mouse) mapping to 1 C4.

SOURCE

ASIC4 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of ASIC4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22324 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ASIC4 (N-20) is recommended for detection of ASIC4 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

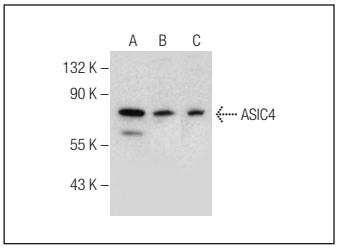
ASIC4 (N-20) is also recommended for detection of ASIC4 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for ASIC4 siRNA (h): sc-42411, ASIC4 siRNA (m): sc-42412, ASIC4 shRNA Plasmid (h): sc-42411-SH, ASIC4 shRNA Plasmid (m): sc-42412-SH, ASIC4 shRNA (h) Lentiviral Particles: sc-42411-V and ASIC4 shRNA (m) Lentiviral Particles: sc-42412-V.

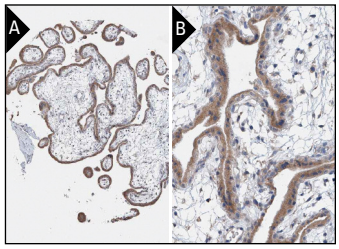
Molecular Weight of ASIC4: 67 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, A-375 cell lysate: sc-3811 or K-562 whole cell lysate: sc-2203.

DATA



ASIC4 (N-20): sc-22324. Western blot analysis of ASIC4 expression in Hep G2 (**A**), A-375 (**B**) and K-562 (**C**) whole cell lysates.



ASIC4 (N-20): sc-22324. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic staining of trophoblastic cells in low (**A**) and high (**B**) resolution. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Sun, X., et al. 2011. ASICs mediate the modulatory effect by paeoniflorin on α-synuclein autophagic degradation. Brain Res. 1396: 77-87.

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.