SANTA CRUZ BIOTECHNOLOGY, INC.

ASIC1 (S-20): sc-13905

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 amiloride-sensitive cation channel 1, neuronal (ACCN1), mammalian degenerin, BNAC1 (MDEG) and brain Na^+ channel 1, mediates 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.

CHROMOSOMAL LOCATION

Genetic locus: ACCN2 (human) mapping to 12q13.12; Accn2 (mouse) mapping to 15 F1.

SOURCE

ASIC1 (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of ASIC1 of rat 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-13905 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ASIC1 (S-20) is recommended for detection of ASIC1 of human origin and ASIC1 isoforms α and β of mouse and rat 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).

ASIC1 (S-20) is also recommended for detection of ASIC1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for ASIC1 siRNA (h): sc-42407, ASIC1 siRNA (m): sc-42408, ASIC1 shRNA Plasmid (h): sc-42407-SH, ASIC1 shRNA Plasmid (m): sc-42408-SH, ASIC1 shRNA (h) Lentiviral Particles: sc-42407-V and ASIC1 shRNA (m) Lentiviral Particles: sc-42408-V.

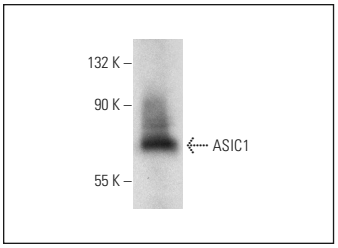
Molecular Weight of ASIC1: 60 kDa.

Positive Controls: mouse brain extract: sc-2253.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



ASIC1 (S-20): sc-13905. Western blot analysis of ASIC1 expression in mouse brain tissue extract.

SELECT PRODUCT CITATIONS

1. Zha, X.M., et al. 2009. ASIC2 subunits target acid-sensing ion channels to the synapse via an association with PSD-95. J. Neurosci. 29: 8438-8446.
2. Zha, X.M., et al. 2009. Oxidant regulated inter-subunit disulfide bond formation between ASIC1a subunits. Proc. Natl. Acad. Sci. USA 106: 3573-3578.
3. Lu, Y., et al. 2009. The ion channel ASIC2 is required for baroreceptor and autonomic control of the circulation. Neuron 64: 885-897.
4. Jing, L., et al. 2013. Three distinct motifs within the C-terminus of acid-sensing ion channel 1a regulate its surface trafficking. Neuroscience 247: 321-327.
5. Liu, S., et al. 2014. Expression and functions of ASIC1 in the zebrafish retina. Biochem. Biophys. Res. Commun. 455: 353-357.
6. Price, M.P., et al. 2014. Localization and behaviors in null mice suggest that ASIC1 and ASIC2 modulate responses to aversive stimuli. Genes Brain Behav. 13: 179-194.
7. Wu, H., et al. 2015. Altered expression pattern of acid-sensing Ion channel isoforms in piriform cortex after seizures. Mol. Neurobiol. E-published.

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.