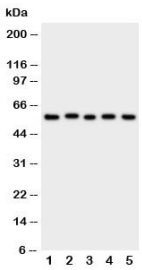
ASIC3 Antibody / Acid Sensing Ion Channel 3 / ACCN3 (R31038)

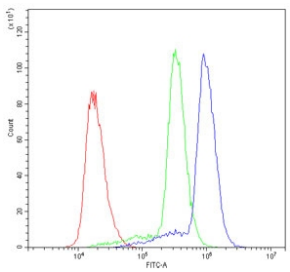
Catalog No.	Formulation	Size
R31038	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

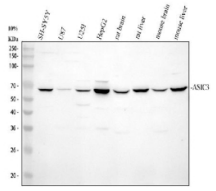
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide/thimerosal
UniProt	Q9UHC3
Applications	Western Blot : 0.5-1ug/ml Flow Cytometry : 1-3ug/10^6 cells
Limitations	This ASIC3 antibody is available for research use only.



Western blot testing of ASIC3 antibody and Lane 1: rat brain; 2: (r) testis; 3: human U87; 4: mouse Neuro-2a; 5: (h) SMMC-7721 cell lysate. Expected/observed molecular weight: ~59 kDa.



Flow cytometry testing of human U937 cells with ASIC3 antibody at 1ug/10^6 cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= ASIC3 antibody.



Western blot analysis of ASIC3 in human, rat, and mouse samples using an anti-ASIC3 antibody. Whole cell lysates were analyzed under reducing conditions. Lane 1: human SH-SY5Y whole cell lysate; Lane 2: human U87 whole cell lysate; Lane 3: human U251 whole cell lysate; Lane 4: human HepG2 whole cell lysate; Lane 5: rat brain tissue lysate; Lane 6: rat liver tissue lysate; Lane 7: mouse brain tissue lysate; Lane 8: mouse liver tissue lysate. A dominant immunoreactive band is observed at approximately 59 kDa across multiple lanes, consistent with the predicted molecular weight of ASIC3. Minor differences in band intensity likely reflect tissue- and cell type-dependent expression levels. Detection was performed using an HRP-conjugated secondary antibody and chemiluminescent substrate.

Description

ASIC3 antibody targets Acid Sensing Ion Channel 3, a proton gated sodium channel that belongs to the acid sensing ion channel family within the epithelial sodium channel and degenerin superfamily. ASIC3 is a multi-pass transmembrane protein predominantly localized to the plasma membrane of sensory neurons, where it functions as a key detector of extracellular acidification. Expression of Acid Sensing Ion Channel 3 is highest in peripheral sensory neurons, including dorsal root ganglion and trigeminal ganglion neurons, supporting its established role in nociception and mechanosensation.

Functionally, Acid Sensing Ion Channel 3 is activated by decreases in extracellular pH, leading to rapid sodium influx and membrane depolarization. A short functional summary is that ASIC3 converts acidic stimuli into electrical signals that contribute to pain perception, particularly in conditions associated with tissue acidosis such as inflammation, ischemia, and muscle fatigue. Through this mechanism, ASIC3 plays an important role in sensing metabolic stress and mediating pain signaling in peripheral tissues.

At the molecular level, ASIC3 assembles as a trimeric channel complex and contains two transmembrane domains per subunit, with a large extracellular loop that confers proton sensitivity. Channel activity can be modulated by extracellular ions, inflammatory mediators, and interacting proteins, allowing ASIC3 to integrate chemical and mechanical signals. ASIC3 antibody reagents are therefore valuable tools for studying ion channel expression, membrane localization, and regulation under physiological and pathological conditions.

From a biological and disease relevance perspective, ASIC3 has been implicated in inflammatory pain, muscle pain, arthritis, and ischemia related tissue injury. Upregulation or sensitization of Acid Sensing Ion Channel 3 has been observed in models of chronic pain and inflammation, making it a target of interest in pain research and neurobiology. ASIC3 expression has also been studied in non-neuronal tissues, including muscle and joint associated cells, where extracellular acidification can occur during metabolic stress.

Developmentally, ASIC3 expression is established early in sensory neuron differentiation and remains prominent in mature nociceptive pathways. ASIC3 antibody tools support research applications aimed at characterizing sensory neuron subpopulations, mapping ion channel distribution, and investigating mechanisms of acid induced signaling. ASIC3 antibodies from NSJ Bioreagents are supplied for research use to support studies in neuroscience, pain biology, and sensory physiology.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the ASIC3 antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

An amino acid sequence from the N-terminus of human Acid-Sensing Ion Channel 3 (FLYQVAERVRYYREFHHQ) was used as the immunogen for this ASIC3 antibody.

Storage

After reconstitution, the ASIC3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.