abcam

ab281839

Anti-Scn1a antibody [EPR22326-112] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR22326-112
Purification technique	Affinity purification Protein A
Concentration	0.984 - 1.036 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Mouse
Dilution info	-

Notes	-

Not recommended

Species	Rat, Human
Dilution info	-
Notes	-

IP

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

WB

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Rat, Human
Dilution info	-
Notes	-

IHC-Fr

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Rat, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Rat, Human
Dilution info	-
Notes	-

Target data

See full target information Scn1a

Function

Pore-forming subunit of Nav1.1, a voltage-gated sodium (Nav) channel that directly mediates the depolarizing phase of action potentials in excitable membranes. Navs, also called VGSCs (voltage-gated sodium channels) or VDSCs (voltage-dependent sodium channels), operate by switching between closed and open conformations depending on the voltage difference across the membrane. In the open conformation they allow Na(+) ions to selectively pass through the pore, along their electrochemical gradient. The influx of Na(+) ions provokes membrane

depolarization, initiating the propagation of electrical signals throughout cells and tissues (PubMed:16921370, PubMed:17928448, PubMed:27281198). By regulating the excitability of neurons, ensures that they respond appropriately to synaptic inputs, maintaining the balance between excitation and inhibition in brain neural circuits (PubMed:16921370, PubMed:22914087). Nav1.1 plays a role in controlling the excitability and action potential propagation from somatosensory neurons, thereby contributing to the sensory perception of mechanically-induced pain (PubMed:27281198).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

ab281839 is the carrier-free version of ab222091.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The Scn1a gene encodes the Nav1.1 protein a voltage-gated sodium channel alpha subunit. This protein plays an important role in the initiation and propagation of action potentials in neurons. Nav1.1 has an approximate mass of 260 kDa and is primarily expressed in the central nervous system especially in interneurons. These channels are pivotal for maintaining normal neuronal excitability and their regulation underpins nerve impulse transmission.
Biological function summary	Nav1.1 function influences the balance of excitatory and inhibitory signals in the brain. It forms part of the sodium channel complex working alongside beta subunits to modulate gating properties and channel stability. Dysfunction in Nav1.1 affects neuronal excitability leading to altered synaptic transmission which can impact various neural processes and result in neurophysiological abnormalities.
Pathways	Nav1.1 has an integral role in excitatory signal pathways and is key to the propagation of action potentials in neurons. It interacts closely with proteins like Nav1.2 and Nav1.6 which are also sodium channels contributing to electric signal transmission in the nervous system. Nav1.1 participates in neuronal communication pathways which impact processes like synaptic plasticity and overall brain function.
Associated diseases and disorders	Alterations in Nav1.1 activity are strongly associated with epilepsy specifically Dravet syndrome. Mutations in SCN1A can lead to defective sodium channel function increasing susceptibility to seizures. Nav1.1 is also linked to other proteins like GABA receptors as impaired inhibitory signaling is involved in the pathology of epilepsy. Furthermore potential associations exist with migraine disorders given the protein's influence on neuronal excitability and signal transmission.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

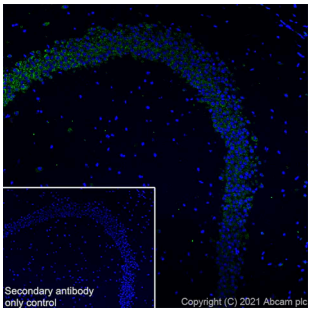
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

6 product images

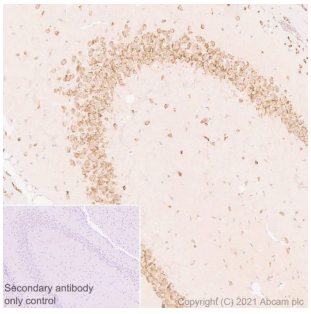


Immunohistochemistry (Frozen sections) - Anti-Scn1a antibody [EPR22326-112] - BSA and Azide free (ab281839)

Scn1a Immunohistochemistry (Frozen sections) staining using rabbit Anti-Scn1a antibody

This data was developed using ab222091, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of 4% PFA-fixed, 0.2% Triton X-100 permeabilized frozen Mouse hippocampus (fresh) tissue labeling Scn1a with ab222091 at 1/100 dilution (5.4 ug/ml) followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution (Green). Cytoplasmic staining on mouse hippocampus is observed. The nuclear counterstain was DAPI (Blue).

Secondary antibody control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488)at 1/1000 dilution.



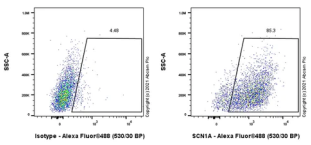
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Scn1a antibody [EPR22326-112] - BSA and Azide free (ab281839)

Scn1a Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Scn1a antibody

This data was developed using ab222091, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Mouse hippocampus tissue labelling Scn1a with ab222091 at 1/1000 dilution (0.54 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Cytoplasmic staining on mouse hippocampus. The section was incubated with ab222091 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

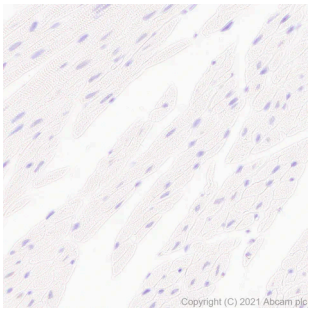
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



Flow Cytometry (Intracellular) - Anti-Scn1a antibody [EPR22326-112] - BSA and Azide free (ab281839)

Scn1a Flow Cytometry (Intracellular) staining using rabbit Anti-Scn1a antibody

This data was developed using ab222091, the same antibody clone in a different buffer formulation.
Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Mouse primary neuron cells labelling Scn1a with ab222091 at 1/50 dilution (1ug)/ Right compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.



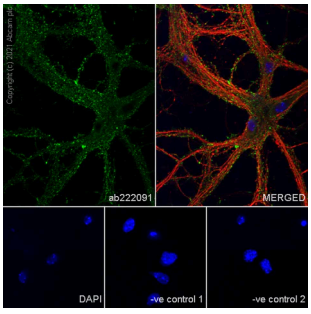
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Scn1a antibody [EPR22326-112] - BSA and Azide free (ab281839)

Scn1a Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Scn1a antibody

This data was developed using ab222091, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Mouse cardiac muscle tissue labelling Scn1a with ab222091 at 1/500 dilution (0.54 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). **Negative control**: No staining on mouse cardiac muscle. The section was incubated with ab222091 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.



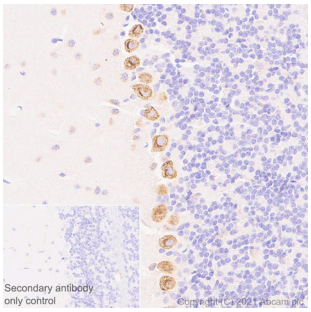
Immunocytochemistry/ Immunofluorescence - Anti-Scn1a antibody [EPR22326-112] - BSA and Azide free (ab281839)

Scn1a Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Scn1a antibody

This data was developed using ab222091, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized mouse primary neuron cells labelling Scn1a with ab222091 at 1/50 dilution (10.8 ug/ml), followed by ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). Confocal image showing cytoplasmic staining in mouse primary neuron. ab11267 Anti-MAP2 mouse monoclonal antibody was used to counterstain tubulin at 1/500 dilution (Red). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150077 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/1000 dilution.

Confocal scanning Z step was set as 0.3 µm followed by image processing with maximum Z projection.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Scn1a antibody [EPR22326-112] - BSA and Azide free (ab281839)

Scn1a Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Scn1a antibody

This data was developed using ab222091, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Mouse cerebellum tissue labelling Scn1a with ab222091 at 1/1000 dilution (0.54 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Cytoplasmic staining on mouse cerebellum. The section was incubated with ab222091 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.