abcam

ab216657

Anti-Islet 1 antibody [EP4182] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EP4182
Purification technique	Affinity purification Protein A
Specificity	86% identities with Islet 2
Concentration	0.986 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	-

Notes	-

Expected

Species	Mouse, Chicken
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse, Chicken, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Chicken
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-

Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Chicken
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information ISL1

Function	DNA-binding transcriptional activator. Recognizes and binds to the consensus octamer binding site 5'-ATAATTAA-3' in promoter of target genes. Plays a fundamental role in the gene regulatory network essential for retinal ganglion cell (RGC) differentiation. Cooperates with the transcription factor POU4F2 to achieve maximal levels of expression of RGC target genes and RGC fate specification in the developing retina. Involved in the specification of motor neurons in cooperation with LHX3 and LDB1 (By similarity). Binds to insulin gene enhancer sequences (By similarity). Essential for heart development. Marker of one progenitor cell population that give rise to the outflow tract, right ventricle, a subset of left ventricular cells, and a large number of atrial cells as well, its function is required for these progenitors to contribute to the heart. Controls the expression of FGF and BMP growth factors in this cell population and is required for proliferation and survival of cells within pharyngeal foregut endoderm and adjacent splanchnic mesoderm as well as for migration of cardiac progenitors into the heart (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab216657 is the carrier-free version of ab109517.

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.

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

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	Islet 1 also known as ISL1 is a LIM-homeodomain transcription factor with a molecular mass of approximately 38 kDa. It plays an important role in regulating gene expression during the development of the nervous system and pancreas. You can find Islet 1 predominantly in motor neurons pancreatic beta cells and cardiac muscle cells. Its expression is important during embryonic stages for cell differentiation and maturation. Researchers use "Isl 1 neuronal marker" antibodies to identify this protein's presence in tissue.
Biological function summary	Islet 1 is involved in the differentiation and survival of various cell types. As part of a transcription complex it regulates downstream target genes essential for the development of motor neurons and cardiac muscle. It also contributes significantly to the developmental pathways of insulin-producing beta cells in the pancreas. The ISL1 marker is therefore an important tool for studying cell lineage and fate in developmental biology.
Pathways	Islet 1 is involved in key developmental signaling pathways including the Notch signaling and Wnt signaling pathways. In these pathways Islet 1 collaborates with other proteins like Lhx3 and Ngn2 to ensure proper gene activation for neuronal

and cardiac development. Wnt signaling affects the expression of isl 1 marker genes contributing to precise spatial and temporal regulation during embryogenesis.

Associated diseases and disorders

Islet 1 has links to congenital heart defects and type 2 diabetes. Mutations or altered expression of this protein can disrupt pancreatic beta cell function and motor neuron development. In congenital heart disease the interaction of Islet 1 with proteins like Nkx2.5 is critical. Its role in type 2 diabetes ties with the functioning of other proteins involved in insulin secretion making it a potential target for therapeutic intervention in these conditions.

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

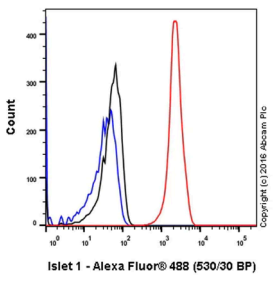
We do not recommend this combination. It is not covered by our product promise.

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

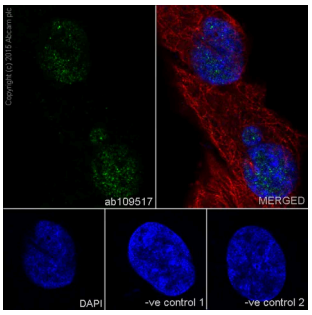


Flow Cytometry (Intracellular) - Anti-Islet 1 antibody [EP4182] - BSA and Azide free (ab216657)

Islet 1 Flow Cytometry (Intracellular) staining using rabbit Anti-Islet 1 antibody

Intracellular Flow Cytometry analysis of SH-SY5Y (human neuroblastoma) cells labeling Islet 1 with purified ab109517 at 1/50 dilution (10 µg/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilized with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (1/2000) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells

without incubation with primary antibody and secondary antibody (Blue) was used as the unlabeled control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab109517).



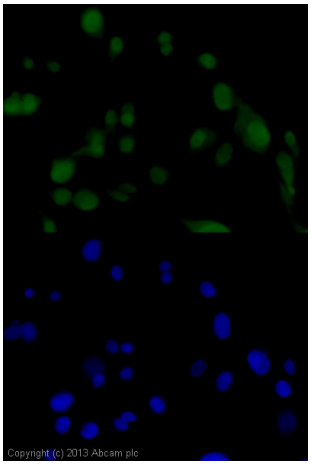
Immunocytochemistry/ Immunofluorescence - Anti-Islet 1 antibody [EP4182] - BSA and Azide free (ab216657)

Islet 1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Islet 1 antibody

Immunocytochemistry/Immunofluorescence analysis of SH-SY-5Y (human neuroblastoma) cells labelling Islet 1 with purified ab109517 at 1/250. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500) was used as the secondary antibody. DAPI (blue) was used as the nuclear counterstain. ab7291, a mouse anti-tubulin (1/1000) and ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/1000) were also used.
Control 1: primary antibody (1/100) and secondary antibody, ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/500).

Control 2: ab7291 (1/1000) and secondary antibody, ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/500).

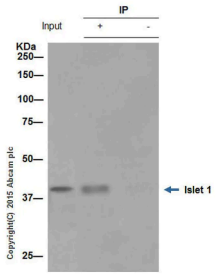
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab109517).



Immunocytochemistry/ Immunofluorescence - Anti-Islet 1 antibody [EP4182] - BSA and Azide free (ab216657)

Islet 1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Islet 1 antibody

Immunocytochemistry/Immunofluorescence analysis of U-87 MG (Human glioblastoma-astrocytoma epithelial cell line) cells labeling Islet 1 with unpurified ab109517.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab109517).



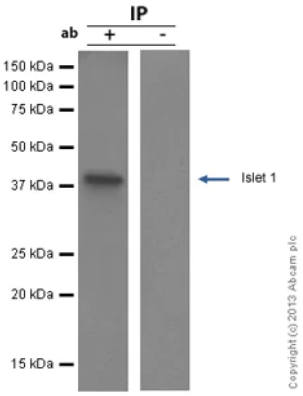
Immunoprecipitation - Anti-Islet 1 antibody [EP4182] - BSA and Azide free (ab216657)

ab109517 (purified) at 1/30 immunoprecipitating Islet 1 in Jurkat (Human T cell leukemia cell line from peripheral blood) whole cell lysate. 10 µg of cell lysate was present in the input. For western blotting, a HRP-conjugated Veriblot for IP Detection Reagent (ab131366) was used for detection at 1:1500 dilution. A rabbit monoclonal IgG (ab172730) was used intead of ab128913 as a negative control (Lane 3).
Blocking/Dilution buffer and concentration: 5% NFDM/TBST.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab109517).

All lanes:
Immunoprecipitation - Anti-Islet 1 antibody [EP4182] - Neural Stem Cell Marker (ab109517)

Predicted band size: 39 kDa



Immunoprecipitation - Anti-Islet 1 antibody [EP4182] - BSA and Azide free (ab216657)

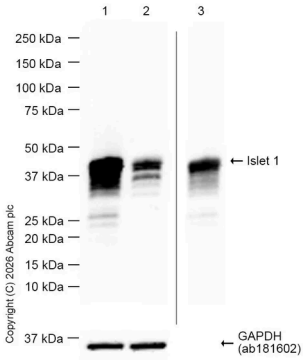
ab109517 (unpurified) immunoprecipitating Islet 1 in Jurkat (Human T cell leukemia cell line from peripheral blood) whole cell lysate.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab109517).

All lanes:
Immunoprecipitation - Anti-Islet 1 antibody [EP4182] - Neural Stem Cell Marker (ab109517)

Predicted band size: 39 kDa

Observed band size: 39 kDa

Exposure time: 30s



Western blot - Anti-Islet 1 antibody [EP4182] - BSA and Azide free (ab216657)

Islet 1 Western blot staining using rabbit Anti-Islet 1 antibody

This data was developed using ab109517, the same antibody clone in a different buffer formulation.

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Lane 1, 2: 10 seconds Lane 3: 3 seconds

All lanes:
Western blot - Anti-Islet 1 antibody [EP4182] - Neural Stem Cell Marker (ab109517) at 1/1000 dilution

Lanes 1 - 3:
SH-SY5Y (human neuroblastoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
Neuro-2a (mouse neuroblastoma neuroblast) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 40 kDa, 36 kDa

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