SYSY Antibodies

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Islet-1

Cat.No. 406 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For **reconstitution** add 50 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	**WB**: not tested yet **IP**: not tested yet **ICC**: not tested yet **IHC**: 1 : 100 **IHC-P**: 1 : 200 up to 1 : 1000
Immunogen	Synthetic peptide corresponding to AA 333 to 349 from mouse Islet1 (UniProt Id: P61372)
Reactivity	Reacts with: mouse (P61372), rat (P61374). Other species not tested yet.
Specificity	The antibody may crossreact with Islet-2 due to sequence homology.
Remarks	**IHC**: For optimal results in retina tissue, follow the retina protocol according to Gierke et al. 2023.

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Background

Islet-1 (**Isl1**) is a member of the LIM/homeodomain family of transcription factors. It binds and regulates the promoters of the insulin, glucagon and somatostatin genes, and may play an important role in regulating insulin gene expression. It is central to the embryogenesis of pancreatic islets of Langerhans and is involved in the specification of motor neurons. It is expressed in subsets of neurons of the adrenal medulla and dorsal root ganglion, and in inner nuclear and ganglion cell layers in the retina.
Isl1 is essential for heart development, as its expression defines cardiac progenitor cell populations and is required for normal cardiac development and asymmetry.
Mutations in this gene have been associated with maturity-onset diabetes of the young.

Selected References for 406 003

Selected Ionotropic Receptors and Voltage-Gated Ion Channels: More Functional Competence for Human Induced Pluripotent Stem Cell (iPSC)-Derived Nociceptors.
Schoepf CL, Zeidler M, Spiecker L, Kern G, Lechner J, Kummer KK, Kress M
Brain sciences (2020) 106: . . **ICC; tested species: human,mouse**

Selected General References

Distinction between two populations of islet-1-positive cells in hearts of different murine strains.
Khattar P et al. Stem Cells Dev. (2011) PubMed:20942609

Human ISL1 heart progenitors generate diverse multipotent cardiovascular cell lineages.
Bu L et al. Nature (2009) PubMed:19571884

Expression of the LIM-homeodomain protein Isl1 in the developing and mature mouse retina.
Elshatory Y et al. J. Comp. Neurol. (2007) PubMed:17480014

Islet-1 controls the differentiation of retinal bipolar and cholinergic amacrine cells.
Elshatory Y et al. J. Neurosci. (2007) PubMed:18003851

Multipotent embryonic isl1+ progenitor cells lead to cardiac, smooth muscle, and endothelial cell diversification.
Moretti A et al. Cell (2006) PubMed:17123592

Characterization of the LIM/homeodomain gene islet-1 and single nucleotide screening in NIDDM.
Riggs AC et al. Diabetes (1995) PubMed:7789634

Access the online factsheet including applicable protocols at https://sysy.com/product/406003 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera**: With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies**: Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein.
  For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.