Technical Data Sheet

PE Mouse anti-Islet-1

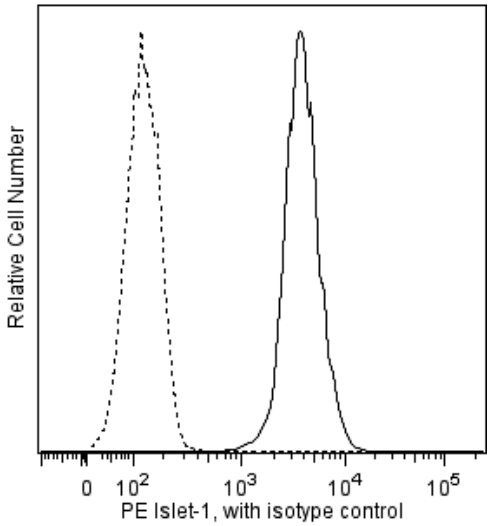
Product Information

Material Number:	**562547**
Alternate Name:	ISL-1, ISL1, Islet-2, ISL-2, ISL2
Size:	50 Tests
Vol. per Test:	5 µl
Clone:	Q11-465
Immunogen:	Human Islet-1 Recombinant Protein
Isotype:	Mouse IgG1, κ
Reactivity:	QC Testing: Mouse Tested in Development: Human
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

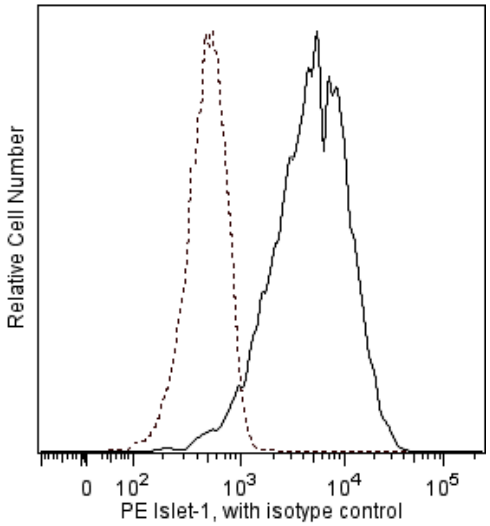
Description

Islet-1 is a LIM-homeodomain transcription factor important for motor neuron differentiation and the formation of islet cells in the pancreas. Various heart cell types, such as cardiac muscle, the conduction system and endothelial cells in multiple heart tissue compartments during cardiogenesis, have been found to originate from Islet-1-positive cardiac precursor cells. Moreover, Islet-1-positive cells from differentiated human embryonic stem cell lines were found to be capable of self-renewal and expansion and could differentiate into the three major cell types of the heart.

Western blot analyses of lysates from transfected cells demonstrate that the Q11-465 monoclonal antibody reacts with human Islet-1 (ISL-1, ISL1) and Islet-2 (ISL-2, ISL2), similar to the 4D5 clone (Tsuchida et al, 1994). Cross-reactivity with mouse Islet is also observed.



***Flow cytometric analysis of Islet-1 in mouse pancreatic tumor (insulinoma) cells**. Beta-TC-6 (ATCC CRL-11506™) cells were fixed with BD Cytofix™ fixation buffer (Cat. No. 554655) and permeabilized with BD Phosflow™ Perm buffer III (Cat. No. 558050). The cells were stained with either PE Mouse IgG1, κ isotype control (dashed line, Cat. No. 554680) or PE Mouse anti-Islet-1 monoclonal antibody (solid line) at matched concentrations. This antibody cross-reacts with Islet-2 as well. Flow cytometry was performed on a BD FACSCanto™ II flow cytometry system.*



***Flow cytometric analysis of Islet-1 in cardiomyocytes derived from human embryonic stem (ES) cells.** H7 human ES cells (WiCell, Madison, WI) were differentiated towards a cardiac lineage (Xu C. et al, 2011), fixed with BD Cytofix™ Fixation Buffer (Cat. No. 554655) and permeabilized with BD Phosflow Perm Buffer III (Cat. No.558050). The cells were stained with either PE Mouse IgG1, κ isotype control (dashed lines, Cat. No.554680) or PE Mouse Anti-Islet-1 antibody (solid line) at matched concentrations. The histograms were derived from gated events based on light scattering characteristics of H7-derived cardiomyocytes. Flow cytometry was performed on a BD LSR™ II flow cytometry system.*

Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.
The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
The antibody was conjugated with R-PE under optimum conditions, and unconjugated antibody and free PE were removed.

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Application Notes

Application

Intracellular staining (flow cytometry)	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
554655	Fixation Buffer	100 mL	(none)
558050	Perm Buffer III	125 mL	(none)
554680	PE Mouse IgG1, κ Isotype Control	0.1 mg	MOPC-21
554656	Stain Buffer (FBS)	500 mL	(none)

Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 × 10^6 cells in a 100-µl experimental sample (a test).
2. An isotype control should be used at the same concentration as the antibody of interest.
3. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
4. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
5. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
6. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

Bu L, Jiang X, Martin-Puig S, et al. Human ISL1 heart progenitors generate diverse multipotent cardiovascular cell lineages. *Nature.* 2009; 460(7251):113-117. (Biology)

Ebert AD, Yu J, Rose FF Jr, et al. Induced pluripotent stem cells from a spinal muscular atrophy patient. *Nature.* 2009; 457(7227):277-280. (Biology)

Laugwitz KL, Moretti A, Caron L, Nakano A, Chien KR. Islet1 cardiovascular progenitors: a single source for heart lineages. *Development*. 2008; 135(2):193-205. (Biology)

Osumi N, Hirota A, Ohuchi H, et al. Pax-6 is involved in the specification of hindbrain motor neuron subtype. *Development*. 1997; 124(15):2961-2972. (Biology)

Tsuchida T, Ensini M, Morton SB, et al. Topographic organization of embryonic motor neurons defined by expression of LIM homeobox genes. *Cell*. 1994; 79(6):957-970. (Biology)

Xu C, Police S, Hassanipour M, et al. Efficient generation and cryopreservation of cardiomyocytes derived from human embryonic stem cells. 2011; 6(1):53-66. (Methodology: Cell differentiation)

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