Technical Data Sheet

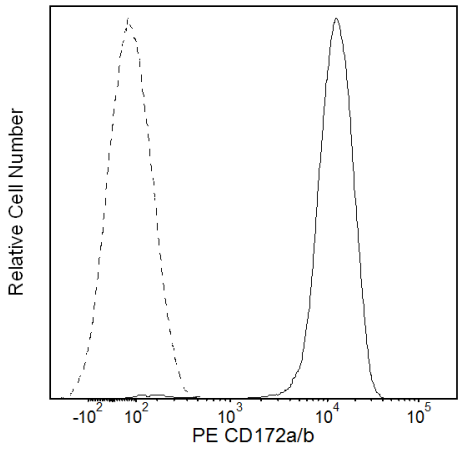
PE Mouse Anti-Human CD172a/b

Product Information

Material Number:	**563441**
Alternate Name:	SIRP alpha1/beta1; SIRPα/SIRPβ
Size:	100 tests
Vol. per Test:	5 µl
Clone:	SE5A5
Immunogen:	Human SIRP alpha extracellular domain Recombinant Protein
Isotype:	Mouse (BALB/c) IgG1, κ
Reactivity:	QC Testing: Human
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The SE5A5 monoclonal antibody specifically binds to a common epitope on CD172a/SIRPα (90 kDa) and CD172b/SIRP β (50 kDa). These transmembrane glycoproteins are members of the Signal Regulatory Protein (SIRP) family that, in turn, belongs to the Immunoglobulin superfamily. The SIRP family is comprised of two subgroups, SIRPα and SIRPβ that are distinguished by the presence (α) or absence (β) of a cytoplasmic domain containing two immunoreceptor tyrosine-based inhibition motifs (ITIM). CD172a/SIRPα is expressed on CD34+ stem/progenitor cells, cardiomyocytes, monocytes, macrophages, granulocytes, dendritic cells, and in the central nervous system. It binds to CD47 and is implicated in mediating inhibitory signals via the ITIM/SHP-2 association. SIRPβ does not possess a cytoplasmic domain but instead the transmembrane domain contains a positively-charged residue that can interact with another transmembrane protein, DAP-12/KARAP. DAP-12 has two immunoreceptor tyrosine-based activation motifs (ITAM) within its cytoplasmic domain that are thought to link SIRPβ to cellular activation signaling. SIRPβ is expressed on myeloid cells, including peripheral blood monocytes and granulocytes. It is not expressed on CD34+ cells. SIRPα and SIRPβ have complementary roles in signal regulation and may work together in tuning certain cellular responses to stimuli.



Flow cytometric analysis of CD172a/b expression on human peripheral blood monocytes. *Whole blood was stained with either PE Mouse Anti-Human CD172a/b antibody (Cat. No. 563441; solid line histogram) or PE Mouse IgG1, κ Isotype Control (Cat. No. 554680; dashed line histogram). Erythrocytes were lysed with BD FACS™ Lysing Solution (Cat. No. 349202). The fluorescence histograms were derived from gated events with the forward and side light-scatter characteristics of intact monocytes. Flow cytometric analysis was performed using a BD™ LSR II Flow Cytometer 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.

Application Notes

Application

Flow cytometry	Routinely Tested

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Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 ml	(none)
554680	PE Mouse IgG1, κ Isotype Control	0.1 mg	MOPC-21
349202	BD FACS™ Lysing Solution	100 ml	(none)
555899	Lysing Buffer	100 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. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. An isotype control should be used at the same concentration as the antibody of interest.
4. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
5. 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.
6. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.

References

Ghannadan M, Hauswirth AW, Schernthaner GH, Müller MR, Klepetko W, Schatzl G, Sperr WR, Bühring HJ, Valent P. *Int Arch Allergy Immunol.* 2002; 127(4):299-307. (Biology)

Dietrich J, Cella M, Seiffert M, Bühring HJ, Colonna M. Cutting edge: signal-regulatory protein beta 1 is a DAP12-associated activating receptor expressed in myeloid cells. *J Immunol.* 2000; 164(1):9-12. (Biology)

Dubois NC, Craft AM, Sharma P, Elliott DA, Stanley EG, Elefanty AG, Gramolini A, Keller G. SIRPA is a specific cell-surface marker for isolating cardiomyocytes derived from human pluripotent stem cells. *Nat Biotechnol.* 2011; 29:1011-1018. (Biology)

Seiffert M, Brossart P, Cant C, et al. Signal-regulatory protein alpha (SIRPalpha) but not SIRPbeta is involved in T-cell activation, binds to CD47 with high affinity, and is expressed on immature CD34(+)CD38(-) hematopoietic cells. *Blood.* 2001; 97(9):2741-2749. (Clone-specific: Immunoprecipitation, Inhibition)

Seiffert M, Cant C, Chen Z, et al. Human signal-regulatory protein is expressed on normal, but not on subsets of leukemic myeloid cells and mediates cellular adhesion involving its counterreceptor CD47. *Blood.* 1999; 94(11):3633-3643. (Immunogen: Flow cytometry, Functional assay, Immunoprecipitation, Inhibition)

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