

Technical Data Sheet

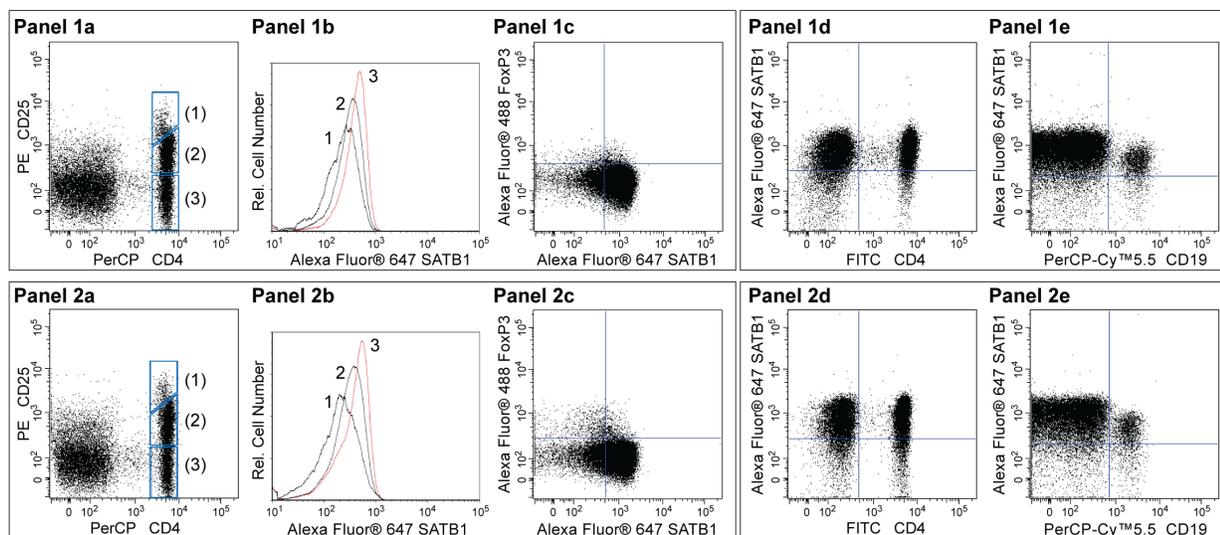
Alexa Fluor® 647 Mouse anti-SATB1

Product Information

Material Number:	562378
Alternate Name:	SATB homeobox 1; Special AT-rich sequence-binding protein 1
Size:	100 Tests
Vol. per Test:	5 µl
Clone:	14/SATB1
Immunogen:	Human SATB1 aa. 550-667
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Human Tested in Development: Mouse, Rat
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The 14/SATB1 monoclonal antibody specifically binds to the special AT-rich sequence binding protein 1 that is encoded by the *SATB1* (SATB homeobox 1) gene. Central to the formation of nucleosomes, which consist of octameric histone cores with defined segments of chromatin wound around them, are the interactions of nucleosomes with nuclear matrix components. Specific genomic DNA segments that interact with the nuclear matrix are called scaffold or matrix attachment regions (SARs or MARs). SATB1 is a homeodomain MAR binding protein. It recognizes ATC sequences that consist of stretches of A's, T's, and C's on one DNA strand. SATB1 is expressed by thymocytes (especially single positive CD4⁺ thymocytes), T and B lymphocytes, NK cells, and macrophages. SATB1 can recruit chromatin-remodeling factors and thereby regulate chromatin structure and gene expression. Recently it has been reported that repression of SATB1 was essential for the phenotype and function of mouse regulatory T cells but inhibitory for the establishment of transcriptional programs expressed by effector T cells.

**Multicolor flow cytometric analysis of SATB1 expressed in human peripheral blood lymphocytes.**

Panels 1a-c and 2a-c. Human peripheral blood mononuclear cells (PBMC) were surface stained with PE Mouse Anti-Human CD25 (Cat. No. 555432) and PerCP Mouse Anti-Human CD4 (Cat. No. 347324) antibodies followed by treatment with either the BD Cytotfix/Cytoperm™ Fixation/Permeabilization Kit (Cat. No. 554714, Panels 1a-c) or the Human FoxP3 Buffer Set (Cat. No. 560098, Panels 2a-c) as per the recommended protocols. The cells were then stained with Alexa Fluor® 647 Mouse Anti-Human SATB1 (Cat. No. 562378) and Alexa Fluor® 488 Mouse Anti-Human FoxP3 (Cat. No. 561181) antibodies. Events with the forward and side-light scatter characteristics of intact lymphocytes were reanalyzed for CD4 versus CD25 expression (Panels 1a and 2a) to gate for (1) CD25^{hi}CD4⁺ (Treg), (2) CD25^{int}CD4⁺, and (3) CD25^{neg}CD4⁺ T cell subsets as indicated. Panels 1b and 2b show overlaid SATB1 fluorescence histograms for the three gated CD4⁺ T cell subsets [i.e., CD4 and CD25 gated subsets in Panels 1a and 2a (labeled 1-3) corresponding to histograms 1-3] using either the Cytotfix/Cytoperm Buffer or FoxP3 Buffer, respectively. Panels 1c and 2c show the expression of SATB1 versus Foxp3 expression for the CD4⁺ T cell populations treated with Cytotfix/Cytoperm Buffer or Foxp3 Buffer, respectively.

Panels 1d,e and 2d,e. Human PBMC were surface stained with FITC Mouse Anti-Human CD4 (Cat. No. 555346) and PerCP-Cy™5.5 Mouse Anti-Human CD19 (Cat. No. 561295) antibodies followed by treatment with either Cytotfix/Cytoperm Buffer (Cat. No. 554714, Panels 1d,e) or Human FoxP3 Buffer Set (Cat. No. 560098, Panels 2d,e) as per the recommended protocol. Cells were stained with Alexa Fluor® 647 Mouse Anti-Human SATB1. Panels 1d,e and 2d,e show the expression of SATB1 in CD4⁺ T cell and CD19⁺ B cell populations. Flow cytometry was performed using a BD LSR™ II Flow Cytometer System.

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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 to Alexa Fluor® 647 under optimum conditions, and unreacted Alexa Fluor® 647 was removed.

Application Notes

Application

Intracellular staining (flow cytometry)	Routinely Tested
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Suggested Companion Products

Catalog Number	Name	Size	Clone
554656	Stain Buffer (FBS)	500 mL	(none)
554714	BD Cytotfix/Cytoperm™ Fixation/Permeabilization Kit	250 Tests	(none)
560098	Human FoxP3 Buffer Set	100 Tests	(none)
555432	PE Mouse Anti-Human CD25	100 Tests	M-A251
561181	Alexa Fluor® 488 Mouse anti-Human FoxP3	100 Tests	236A/E7
555346	FITC Mouse Anti-Human CD4	100 Tests	RPA-T4
561295	PerCP-Cy™5.5 Mouse Anti-Human CD19	50 Tests	HIB19
554657	Stain Buffer (BSA)	500 mL	(none)
565571	Alexa Fluor® 647 Mouse IgG1 κ Isotype Control	50 µg	MOPC-21

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. Alexa Fluor® 647 fluorochrome emission is collected at the same instrument settings as for allophycocyanin (APC).
6. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
7. The Alexa Fluor®, Pacific Blue™, and Cascade Blue® dye antibody conjugates in this product are sold under license from Molecular Probes, Inc. for research use only, excluding use in combination with microarrays, or as analyte specific reagents. The Alexa Fluor® dyes (except for Alexa Fluor® 430), Pacific Blue™ dye, and Cascade Blue® dye are covered by pending and issued patents.
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10. Please refer to <http://regdocs.bd.com> to access safety data sheets (SDS).
11. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

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