

## PRODUCT DESCRIPTION

This kit contains three conjugated antibodies (and a rabbit IgG-PE isotype control) that can be used for the single-step staining of human regulatory T cells (1-9).

## MATERIALS PROVIDED & STORAGE

Store the unopened kit at 2-8 °C **in the dark**. Refer to the kit label for date of expiration.

	PART	PART #	DESCRIPTION
Positive Markers	Human/Mouse FoxP3-PE Rabbit IgG; Clone 1054C	968114	250 µL of a phycoerythrin-conjugated antibody specific for human/mouse FoxP3.
	Human CD4-FITC Mouse IgG <sub>2A</sub> ; Clone 11830	968116	250 µL of a fluorescein-conjugated antibody specific for human CD4.
	Human IL-2 Ra/CD25-APC Mouse IgG <sub>2A</sub> ; Clone 24212	968115	250 µL of an allophycocyanin-conjugated antibody specific for human IL-2 Ra/CD25.
Isotype Control	Rabbit IgG Control-PE	968117	250 µL of a phycoerythrin-conjugated control specific for rabbit IgG.
Staining Buffers	FoxP3/Transcription Factor Fixation Concentrate (4X)	894065	8 mL of a formaldehyde solution.
	FoxP3/Transcription Factor Fixation Diluent	894068	25 mL of a buffered detergent.
	FoxP3/Transcription Factor Permeabilization & Wash Buffer (10X)	894356	25 mL of a buffered protein base with detergent and preservatives. <b>Note:</b> <i>May contain a precipitate but will not affect product performance.</i>
	Staining Buffer (1X)	895068	50 mL of a 1X Staining Buffer

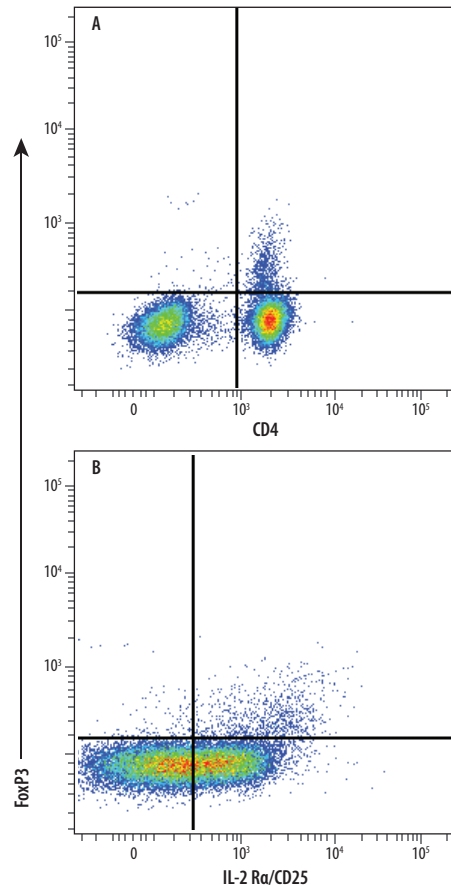
## INTENDED USE

This product is designed for the flow cytometric analysis of human regulatory T cells using three fluorochrome-conjugated antibodies.

## STAINING PROTOCOL

1. Wash human PBMCs (1 x 10<sup>6</sup> cells per sample) with 2.0 mL of Flow Cytometry Staining Buffer (R&D Systems®, Catalog # FC001) or other BSA-containing buffer, by spinning at 300 x g for 5 minutes, using 5.0 mL flow cytometry tubes.
2. Fc-block cells with blocking IgG (1.0 µg IgG/10<sup>6</sup> cells) for 10 minutes at 2-8 °C.
3. Add 10 µL of CD4-FITC and 10 µL of CD25-APC antibodies or isotype controls (R&D Systems®, Catalog # IC003F and IC003A).
4. Incubate the mixture for 30-45 minutes at 2-8 °C **in the dark**.
5. Wash the cells two times with cold 1X PBS. During the washes, make up fresh 1X FoxP3/Transcription Factor Fixation Buffer by diluting FoxP3/Transcription Factor Fixation Concentrate (4X) with FoxP3/Transcription Factor Fixation Diluent (*i.e.* 100 µL FoxP3/Transcription Factor Fixation Concentrate (4x) + 300 µL FoxP3/Transcription Factor Fixation Diluent).
6. Resuspend the cells in fresh 1X FoxP3/Transcription Factor Fixation Buffer using 0.5 mL/tube. Incubate at 2-8 °C for 30 minutes. During this incubation, make up 1X FoxP3/Transcription Factor Permeabilization and Wash Buffer by diluting FoxP3/Transcription Factor Permeabilization and Wash Buffer (10X) with distilled water (*i.e.* 100 µL FoxP3/Transcription Factor Permeabilization and Wash Buffer (10X) + 900 µL diH<sub>2</sub>O) and keep at 2-8 °C.
7. Wash two times with fresh, cold, 1X FoxP3 Permeabilization and Wash Buffer.
8. Add 10 µL of FoxP3 antibody or the rabbit IgG-PE isotype control included in this kit to the cells and incubate for 30 minutes at 2-8 °C.
9. Wash the cells one time with cold 1X FoxP3 Permeabilization and Wash Buffer.
10. Resuspend the cells in Flow Cytometry Staining Buffer and run on a flow cytometer.

## DATA EXAMPLES



**Figure 1: Detection of FoxP3 in Human PBMC Natural Tregs by Flow Cytometry.** Human peripheral blood mononuclear cell (PBMC) natural regulatory T cells (Tregs) were surface stained with **(A)** Mouse Anti-Human CD4 Fluorescein-conjugated Monoclonal Antibody and **(B)** Mouse Anti-Human IL-2 R $\alpha$ /CD25 APC-conjugated Monoclonal Antibody, followed by intracellular staining using Rabbit Anti-Human/Mouse FoxP3 PE-conjugated Antigen Affinity-purified Monoclonal Antibody. To facilitate intracellular staining, cells were fixed and permeabilized with FoxP3 Fixation & Permeabilization buffers. Cells were gated on lymphocytes.

## PRECAUTIONS

Some components in this kit contain formaldehyde which is a suspected carcinogen. Avoid contact with skin, eyes, and mucous membranes, and avoid inhaling fumes. In case of contact, wash immediately with water and seek medical advice.

The Staining Buffers in this kit contain sodium azide which may react with lead and copper plumbing to form explosive metallic azides. Flush with large volumes of water during disposal.

## REFERENCES

1. Tang, Q. and J.A. Bluestone (2008) *Nature Immunol.* **9**:239.
2. Zheng, Y. and A.Y. Rudensky (2007) *Nature Immunol.* **8**:457.
3. Hori, S. *et al.* (2003) *Science* **299**:1057.
4. Kim, J.M. and A.Y. Rudensky (2006) *Immunol. Rev.* **212**:86.
5. Fontenot, J.D. *et al.* (2003) *Nat. Immunol.* **4**:330.
6. Khatri, R. *et al.* (2003) *Nat. Immunol.* **4**:337.
7. Bluestone, J.A. and A.K. Abbas (2003) *Nat. Rev. Immunol.* **3**:253.
8. Sakaguchi, S. (2004) *Ann. Rev. Immunol.* **22**:531.
9. Josefowicz, S.Z. and A.Y. Rudensky (2009) *Immunity* **30**:616.