

# Human FoxP3

## Monoclonal Antibodies

### Features

Two clones, 259D/C7 and 236A/E7, to provide more choice

Choice of BD Horizon™ V450, Alexa Fluor® 488, Alexa Fluor® 647, and PE conjugates

Easy-to-use buffer system

BD Biosciences now offers clones 236A/E7 and 259D/C7 against human FoxP3 in several key conjugates, along with an easy-to-use buffer system. This new release is part of our ongoing commitment to Regulatory T cell (Treg) research.

### Human FoxP3 antibodies, conjugates, and simple buffer system

BD Pharmingen™ FoxP3 monoclonal antibodies (259D/C7 and 236A/E7) react with the human FoxP3 transcription factor, a member of the forkhead or winged helix family of transcription factors.<sup>1</sup> Both clones react with all currently identified isoforms of human FoxP3, and clone 259D/C7 is cross-reactive with *Cynomolgus*, *Rhesus*, and *Baboon*. Both of these clones, along with other commercially available clones, are compared in Law, et al.<sup>2</sup>

Available fluorescent conjugates include BD Horizon V450, Alexa Fluor® 488, Alexa Fluor® 647, and PE formats to enable maximum flexibility for design of multicolor panels in combination with any BD FACST™ brand flow cytometer equipped with the appropriate laser and filter sets. Complementing the antibody conjugates, the buffer system fixes and permeabilizes cells in just a few simple steps. Additionally, Treg identification kits containing all necessary reagents for identification of Tregs using FoxP3 clone 259D/C7 are also available in 100-test sizes.

### Regulatory T cells

Originally discovered by Gershon in 1970, Tregs are an immunoregulatory cell type the body uses to control autoimmunity in the periphery through “dominant tolerance.” Tregs are thought to play a critical role in the control of T-cell-mediated autoimmunity by suppressing the proliferation and cytokine production of other T cells.

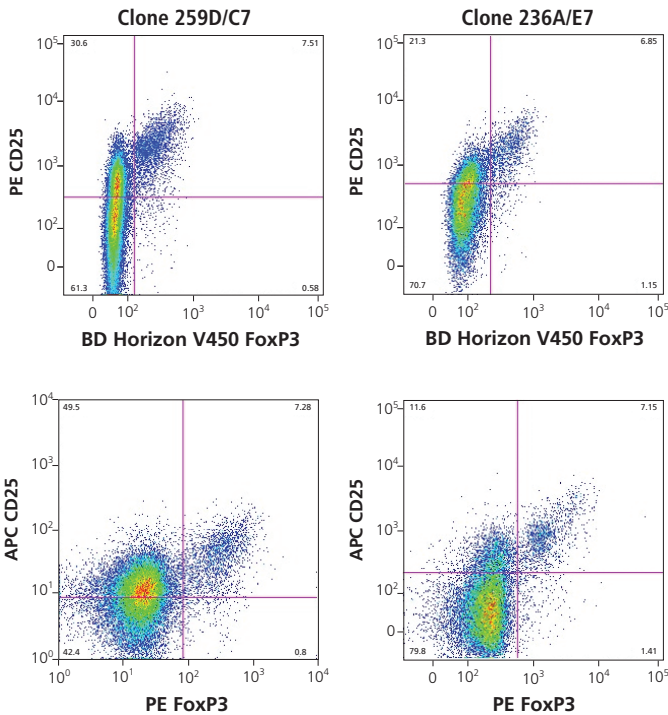
Types of Treg cells include natural CD4<sup>+</sup> Treg cells, Th3 cells, Tr1 cells, and CD8<sup>+</sup> Treg cells. Natural Treg cells are developed primarily in the thymus from positively selected thymocytes with a relatively high avidity for self-antigens. Approximately 5-10% of peripheral CD4<sup>+</sup> cells are CD4<sup>+</sup> CD25<sup>+</sup> Tregs, and can first be seen at the single-positive stage of T lymphocyte development.<sup>3</sup>

### FoxP3 as a Treg marker

The discovery of FoxP3 as a specific marker of Tregs expanded research in biological properties of these cells. FoxP3 (also known as Scurfin, IPEX, and JM2) has been found to be associated with CD4<sup>+</sup> Tregs and is mutated in the human X-linked autoimmunity-allergic dysregulation syndrome (XLAAD or IPEX) and also in scurfy (sf) mice.<sup>4</sup>

Recent research into human disease processes has shown alterations in the numbers and function of Tregs, and in particular, those that express FoxP3.

Visit [bdbiosciences.com/treg](http://bdbiosciences.com/treg) for more information.



### Detection of CD4<sup>+</sup> and CD25<sup>+</sup> FoxP3<sup>+</sup> Treg cells in peripheral blood lymphocytes

Fresh human PBMCs were surface stained with CD4 (FITC or PE) clone RPA-T4 (Cat. Nos. 555346, 555347) and CD25 (PE or APC) clone M-A251 or 2A3 (Cat. Nos. 555432, 340939) antibodies. Cells were then fixed for 10 minutes and permeabilized for 30 minutes using the BD Pharmingen™ Human FoxP3 Buffer Set (Cat. No. 560098), then stained with 20 µL/test or 5 µL/test of conjugated human FoxP3 (clone 259D/C7) antibody (Cat. No. 560046 or 560460) or 5 µL/test of conjugated FoxP3 (clone 236A/E7) (Cat. No. 560852 or 561182). The data shown are derived from an acquisition of 50,000 events in a lymphocyte gate, followed by CD4<sup>+</sup> gating by fluorescence. A compound gating strategy by morphology, then side scatter vs. fluorescence, was used to identify FoxP3<sup>+</sup> Treg cells shown in a final plot representing CD25 vs. FoxP3.

## Human FoxP3 Monoclonal Antibodies

### FoxP3 transcription factor

Today the FoxP3 transcription factor is among the most definitive markers associated with Tregs.<sup>5-7</sup> BD Pharmingen human FoxP3 antibodies and buffer kits provide a high performance reagent system for the detection of FoxP3 positive Tregs.

### Our commitment to Treg research

BD Biosciences commitment to Treg research started with support of the ground-breaking discovery of the use of CD127 to enrich for live Treg fractions. This method allows viable cells to be isolated through cell sorting for use in culture and in other in vitro assays.

This sorting method also allows for a two to four-fold increase in the recovery of the sorted Tregs over previous methods. These FoxP3 clones can be used to confirm the purity and yield of the isolated Tregs.<sup>8,9</sup>

### References

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- Liu W, Putnam AL, Xu-yu Z, et al. CD127 expression inversely correlates with FoxP3 and suppressive function of human CD4<sup>+</sup> Tregs. *J. Exp. Med.* 2006;203:1701-1711.

### Ordering Information

#### Human FoxP3 Monoclonal Antibodies

Description	Clone	Isotype	Format	Size	Cat.No.
Human FoxP3	259D/C7	Ms IgG <sub>1</sub>	Purified	0.1 mg	560044
			PE	25 tests	560082
			PE	100 tests	560046
			Alexa Fluor® 488	100 tests	560047
			Alexa Fluor® 647	100 tests	560045
			BD Horizon V450	30 tests	560460
	BD Horizon V450	120 tests	560459		
	236A/E7	Ms IgG <sub>1</sub> , κ	Alexa Fluor® 488	100 tests	561181
			Alexa Fluor® 647	100 tests	561184
			BD Horizon V450	100 tests	561182
PE			100 tests	560852	
Human FoxP3 Stain Kit-PE (contains FoxP3, CD4, CD25, and buffer set)	259D/C7; RPA-T4; M-A251		PE, APC, FITC	100 tests	560133
Human FoxP3 Stain Kit-Alexa Fluor® 488 (contains FoxP3, CD4, CD25, and buffer set)	259D/C7; RPA-T4; M-A251		Alexa Fluor® 488, APC, PE	100 tests	560131
Human FoxP3 Stain Kit-Alexa Fluor® 647 (contains FoxP3, CD4, CD25, and buffer set)	259D/C7; RPA-T4; M-A251		Alexa Fluor® 647, FITC, PE	100 tests	560132
Human FoxP3 Buffer Set				100 tests	560098



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23-10556-01