Technical Data Sheet

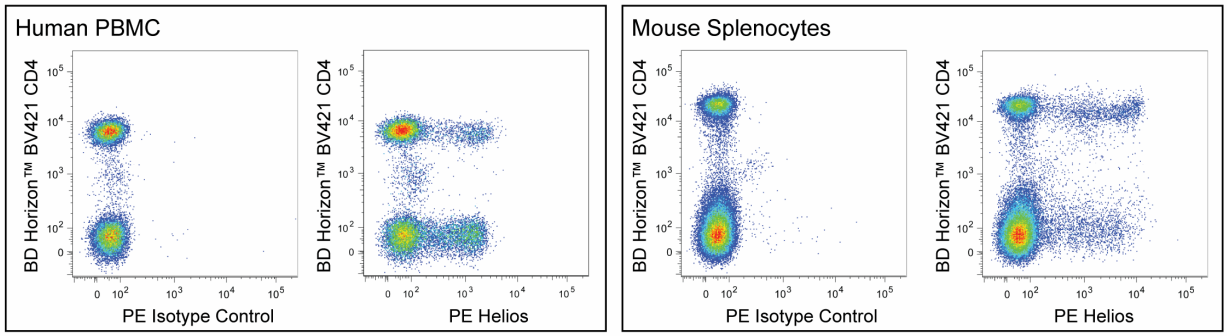
PE Armenian Hamster Anti-Helios

Product Information

Material Number:	**563801**
Alternate Name:	IKAROS family zinc finger protein 2; ANF1A2; HELIOS; ZNF1A2; ZNFN1A2
Size:	50 µg
Concentration:	0.2 mg/ml
Clone:	22F6
Immunogen:	Mouse Helios Peptide
Isotype:	Armenian Hamster IgG
Reactivity:	QC Testing: Human Tested in Development: Mouse
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The 22F6 monoclonal antibody specifically binds to mouse and human Helios. Helios is a member of the Ikaros family of zinc-finger transcription factors, which play important roles in hematopoietic cell development and tumor suppression. Helios expression is restricted to the earliest stages of embryonic hematopoiesis, a variety of epithelial tissues and is notably increased in thymic-derived regulatory CD4+Foxp3+ T (Treg) cells. Its high expression levels in Treg cells are independent from Foxp3 and are believed to contribute, along with other transcription factors, to the phenotypic stability of natural regulatory T cells. Accordingly, it has been demonstrated that Helios directly stimulates Foxp3 transcription while it inhibits *Il2* gene expression, contributing for the maintenance of cellular anergy. Helios is also differentially expressed during negative and positive selection in the thymus, marking CD4+ autoreactive cells for deletion. Helios may possibly play roles in T cell activation, since it is upregulated in Th2 and Tfh cells. Despite these roles in T cell development and function, Helios genetic ablation in mice revealed no significant abnormalities in Treg or other T cell subsets. This finding suggests that other Ikaros family members may play redundant roles.



Two-color flow cytometric analysis of Helios expression

Left Panel: *Human peripheral blood mononuclear cells were stained with BD Horizon™ BV421 Mouse Anti-Human CD4 antibody (Cat No. 562424/562425) and fixed and permeabilized with the BD Pharmingen™ Transcription Factor Buffer Set (Cat. No. 562574/562725). The cells were then stained with either PE Hamster IgG2, κ Isotype Control (Cat No. 550085, Left Plot) or PE Armenian Hamster Anti-Helios antibody (Cat. No. 563801; Right Plot).*

Right Panel: *Mouse splenic leucocytes were stained with BD Horizon™ BV421 Rat Anti-Mouse CD4 antibody (Cat No. 562891) and fixed and permeabilized with the BD Transcription Factor Buffer Set. The cells were then stained with either PE Hamster IgG2, κ Isotype Control (Left Plot) or PE Armenian Hamster Anti-Helios antibody (Right Plot).*

The two-color flow cytometric dot plots show the correlated expression patterns of Helios (or Ig Isotype control staining) versus CD4 for gated events with the forward and side light-scatter characteristics of intact human peripheral blood lymphocytes or splenic leucocytes. Flow cytometric analysis was performed using a BD FACSCanto™ 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

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)
550085	PE Hamster IgG2, κ Isotype Control	0.1 mg	B81-3
562574	Transcription Factor Buffer Set	100 tests	(none)
562725	Transcription Factor Buffer Set	25 tests	(none)
562424	BV421 Mouse Anti-Human CD4	100 tests	RPA-T4
562425	BV421 Mouse Anti-Human CD4	25 tests	RPA-T4
562891	BV421 Rat Anti-Mouse CD4	50 µg	GK1.5
555899	Lysing Buffer	100 ml	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. An isotype control should be used at the same concentration as the antibody of interest.
3. 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.
4. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
5. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

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Thornton AM, Korty PE, Tran DQ, Wohlfert EA, Murray PE, Belkaid Y, Shevach EM. Expression of Helios, an Ikaros transcription factor family member, differentiates thymic-derived from peripherally induced Foxp3+ T regulatory cells. *J Immunol.* 2010; 184(7):3433-3441. (Immunogen: ELISA, Flow cytometry, Western blot)

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