Technical Data Sheet

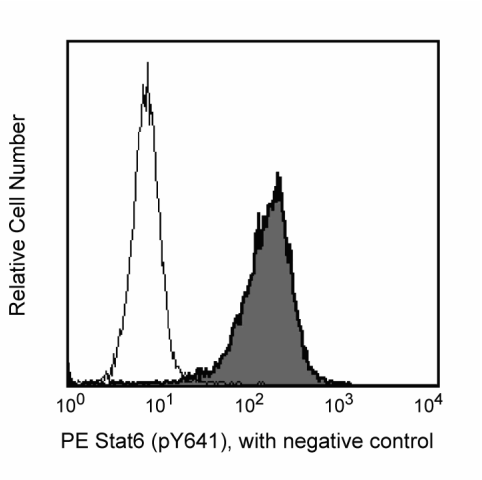
PE Mouse Anti-Stat6 (pY641)

Product Information

Material Number:	**562078**
Alternate Name:	Signal transducer and activator of transcription 6; IL-4 Stat
Size:	250 tests
Vol. per Test:	5 µl
Clone:	18/P-Stat6
Immunogen:	Phosphorylated Human Stat6 (pY641)
Isotype:	Mouse IgG2a
Reactivity:	QC Testing: Human
Target MW:	100 kDa
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

Interleukin-4 (IL-4), a major immunoregulatory cytokine, is secreted by activated T lymphocytes, basophils, and mast cells and plays an important role in modulating T helper cell lineage development. It induces specific gene expression via the tyrosine phosphorylation of Stat6 at tyrosine 641 (Y641). Stat6, a member of the **s**ignal **t**ransducers and **a**ctivators of **t**ranscription protein family, mediates signals for IL-4 and, possibly, IL-13. While Stat6 is widely expressed in human tissues, it exhibits elevated expression in peripheral blood lymphocytes, colon, intestine, ovary, prostate, thymus, spleen, kidney, liver, lung, and placenta. Following cytokine receptor ligation, Jak kinases are activated and phosphorylate the cytoplasmic tails of the oligomerized receptors. The SH3:SH2 domain of Stat6 associates with tyrosine-phosphorylated IL-4 receptor and the proximal Jak kinase phosphorylates Stat6 at Y641 on the C-terminal side of the SH2 domain. Stat6 is then released from the receptor, dimerizes, and is thought to contact the basal transcription machinery by binding to p300/CBP. Thus, Stat6 mediates the IL-4 signal and is essential for the proper development of adaptive immunity.



Flow cytometric analysis of phospho-Stat6 (Y641). *Human endothelial cells were starved overnight in DMEM containing 0.1% FBS. The following day, cells were either left unstimulated (unshaded) or stimulated (shaded) with human IL-4 recombinant protein (Cat. No. 554605) at 10 ng/ml for 60 minutes at 37°C. Cells were fixed in BD Cytofix ™ buffer (10 minutes at 37°C) and then permeabilized in BD Phosflow™ Perm Buffer III (30 minutes on ice or overnight at -20°C). Cells were then washed twice in BD Pharmingen™ Stain Buffer (Cat. No. 554656), and stained with PE Mouse anti- Stat6 (pY641) antibody.*

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

Suggested Companion Products

Catalog Number	Name	Size	Clone
554605	Recombinant Human IL-4	5 µg	(none)
554656	Stain Buffer (FBS)	500 ml	(none)
554655	Fixation Buffer	100 ml	(none)
558050	Perm Buffer III	125 ml	(none)

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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. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
3. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
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. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
6. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/colors.

References

Bromberg J, Darnell JE. The role of STATs in transcriptional control and their impact on cellular function. *Oncogene.* 2000; 19(21):2468-2473. (Biology)

Dent AL, Hu-Li J, Paul WE, Staudt LM. T helper type 2 inflammatory disease in the absence of interleukin 4 and transcription factor STAT6. *Proc Natl Acad Sci U S A.* 1998; 95(23):13823-13828. (Biology)

Heim MH. The Jak-STAT pathway: specific signal transduction from the cell membrane to the nucleus. *Eur J Clin Invest.* 1996; 26(1):1-12. (Biology)

Hou J, Schindler U, Henzel WJ, Ho TC, Brasseur M, McKnight SL. An interleukin-4-induced transcription factor: IL-4 Stat. *Science.* 1994; 265(5179):1701-1706. (Biology)

Mikita T, Campbell D, Wu P, Williamson K, Schindler U. Requirements for interleukin-4-induced gene expression and functional characterization of Stat6. *Mol Cell Biol.* 1996; 16(10):5811-5820. (Biology)

Quelle FW, Shimoda K, Thierfelder W, et al.. Cloning of murine Stat6 and human Stat6, Stat proteins that are tyrosine phosphorylated in responses to IL-4 and IL-3 but are not required for mitogenesis. *Mol Cell Biol.* 1995; 15(6):3336-3343. (Biology)