

## Technical Data Sheet

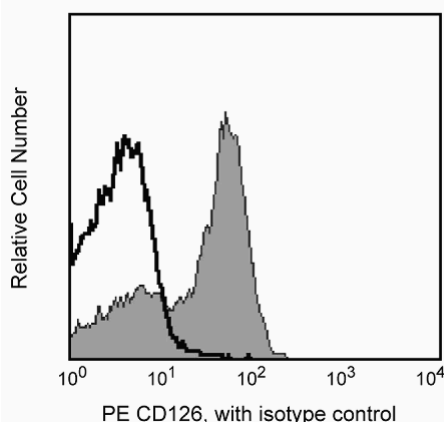
## PE Mouse Anti-Human CD126

## Product Information

Material Number:	551850
Alternate Name:	IL-6 Receptor $\alpha$ -chain
Size:	100 tests
Vol. per Test:	20 $\mu$ l
Clone:	M5
Immunogen:	Mixture of U266, XG-1, and BWD41 cells
Isotype:	Mouse IgG1, $\kappa$
Reactivity:	QC Testing: Human
Storage Buffer:	Aqueous buffered solution containing BSA and $\leq 0.09\%$ sodium azide.

## Description

The M5 antibody reacts with human CD126 which is also known as the  $\alpha$  subunit of the human IL-6 Receptor (IL-6R $\alpha$ ). The human IL-6R $\alpha$  is an 80 kDa type I transmembrane glycoprotein, also known as B cell stimulatory factor-2 (BSF-2) receptor and IL-6 receptor. The IL-6R $\alpha$  subunit associates with the 130-160 kDa gp130 subunit (IL-6 receptor  $\beta$  chain, CD130), that is shared with the receptors for Leukemia Inhibitory Factor (LIF), Ciliary Neurotropic Factor (CNTF), Oncostatin M (OSM), IL-11, Cardiotropin 1 (CT-1) and possibly Neurotrophin-1/B Cell-Stimulating Factor 3 (NNT-1/BSF-3). The IL-6R $\alpha$  chain binds IL-6 with low affinity, however the association with CD130 stabilizes the IL-6/IL-6R $\alpha$  complex resulting in the formation of a high affinity complex. The IL-6R  $\beta$  chain mediates signal transduction. IL-6R $\alpha$ 's are expressed at high levels by activated and EBV-transformed B cells, plasma cells and myeloma cells and at lower levels by most leucocytes, epithelial cells, fibroblasts, hepatocytes and neural cells. IL-6R $\alpha$  exists in soluble form in human serum. The serum levels of soluble IL-6R $\alpha$  appear to elevate in pathological situations such as multiple myeloma, Grave's disease, juvenile chronic arthritis and HIV. The immunogen used to generate the M5 hybridoma was a mixture of U266, XG-1 (human myeloma cell line expressing membrane IL-6R) and BWD41 cells (murine thymoma cell line transfected with cDNA encoding the extracellular part of IL-6R $\alpha$ ).

**Expression of cell surface IL-6R by human PBMC.**

Human PBMC isolated by density centrifugation (Ficoll-Paque™) were blocked with normal polyclonal human IgG and stained with R-PE-conjugated M5 (20  $\mu$ g/106 cells, Cat No. 551850). Staining with the M5 antibody (filled histograms) is compared to staining obtained using the isotype control antibody (open histograms). Histograms in the figure were gated on the CD19-negative lymphocytes. Note: Certain human cell lines or cell types (e.g., neutrophils, monocytes) can first be treated with reagents that block receptors for the Fc regions of immunoglobulin to avoid nonspecific immunofluorescent staining mediated by Fc receptors.

## Preparation and Storage

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. Store undiluted at 4° C and protected from prolonged exposure to light. Do not freeze.

## Application Notes

## Application

Flow cytometry	Routinely Tested
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## Recommended Assay Procedure:

**Immunofluorescent Staining and Flow Cytometric Analysis:** The R-PE conjugated M5 (Cat. No. 551850) antibody can be used for the

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immunofluorescent staining (20 µg/10e6 cells) and flow cytometric analysis of human nucleated cells to measure their expressed levels of surface IL-6Ra.15 An appropriate purified immunoglobulin isotype control is clone MOPC-21 (Cat. No. 555749).

**ELISA:** The purified M5 antibody (Cat. No. 551462) is useful as a capture for a sandwich ELISA that measures soluble human IL-6Ra protein levels. The M5 antibody can be paired with the M182 antibody and recombinant soluble human IL-6Ra as a standard.

## Suggested Companion Products

Catalog Number	Name	Size	Clone
555749	PE Mouse IgG1, κ Isotype Control	100 tests	MOPC-21

## Product Notices

1. This reagent has been pre-diluted for use at the recommended Volume per Test. We typically use 1 X 10e6 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/pharming/en/protocols](http://www.bdbiosciences.com/pharming/en/protocols) for technical protocols.
4. Ficoll-Paque is a trademark of Amersham Biosciences Limited.
5. 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.
6. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

## References

Browning JL, Douglas I, Ngam-ek A, et al. Characterization of surface lymphotoxin forms. Use of specific monoclonal antibodies and soluble receptors. *J Immunol.* 1995; 154(1):33-46.(Biology)

Gaillard JP, Bataille R, Brailly H, Zuber C, Yasukawa K, Attal M, Maruo N, Taga T, Kishimoto T, Klein B. Increased and highly stable levels of functional soluble interleukin-6 receptor in sera of patients with monoclonal gammopathy. *Eur J Immunol.* 1993 April; 23(4):820-824.(Biology)

Gaillard JP, Mani JC, Liautard J, Klein B, Brochier J. Interleukin-6 receptor signaling. I. gp80 and gp130 receptor interaction in the absence of interleukin-6. *Eur Cytokine Netw.* 1999 March; 10(1):43-48.(Biology)

Hibi M, Murakami M, Saito M, Hirano T, Taga T, Kishimoto T. Molecular cloning and expression of an IL-6 signal transducer, gp130. *Cell.* 1990; 63(6):1149-1157.(Biology)

Hirano T, Nakajima K, Hibi M. Signaling mechanisms through gp130: a model of the cytokine system. *Cytokine Growth Factor Rev.* 1997 December; 8(4):241-252.(Biology)

Honda M, Yamamoto S, Cheng M, Yasukawa K, Suzuki H, Saito T, Osugi Y, Tokunaga T, Kishimoto T. Human soluble IL-6 receptor: its detection and enhanced release by HIV infection. *J Immunol.* 1992 April; 148(7):2175-2180.(Biology)

Keul R, Heinrich PC, Müller-newen G, Muller K, Woo P. A possible role for soluble IL-6 receptor in the pathogenesis of systemic onset juvenile chronic arthritis. *Cytokine.* 1998 September; 10(9):729-734.(Biology)

Liautard J, Gaillard JP, Mani JC, Montero-Julian F, Duperray C, Lu ZY, Jourdan M, Klein B, Brailly H, Brochier J. Epitope analysis of human IL-6 receptor gp80 molecule with monoclonal antibodies.. *Eur Cytokine Netw.* 1994 May-June; 5(3):293-300.(Biology)

Müller-Newen G, Köhne C, Keul R, Hemmann U, Müller-Esterl W, Wijdenes J, Brakenhoff JP, Hart MH, Heinrich PC. Purification and characterization of the soluble interleukin-6 receptor from human plasma and identification of an isoform generated through alternative splicing. *Eur J Biochem.* 1996 March; 236(3):837-842.(Biology)

Salvi M, Girasole G, Pedrazzoni M, Passeri M, Giuliani N, Minelli R, Braverman LE, Roti E. Increased serum concentrations of interleukin-6 (IL-6) and soluble IL-6 receptor in patients with Graves' disease. *J Clin Immunol.* 1996 August; 81(8):2976-2979.(Biology)

Senaldi G, Varnum BC, Sarmiento U, et al. Novel neurotrophin-1/B cell-stimulating factor-3: a cytokine of the IL-6 family. *Proc Natl Acad Sci U S A.* 1999 September; 96(20):11458-11463.(Biology)

Taga T, Hibi M, Hirata Y, Yamasaki K, Yasukawa K, Matsuda T, Hirano T, Kishimoto T. Interleukin-6 triggers the association of its receptor with a possible signal transducer, gp130. *Cell.* 1989 August; 58(3):573-581.(Biology)

Taga T, Kawanishi Y, Hardy RR, Hirano T, Kishimoto T. Receptors for B cell stimulatory factor 2. Quantitation, specificity, distribution, and regulation of their expression. *J Exp Med.* 1987 October; 166(4):967-981.(Biology)

Van Snick J. Interleukin-6: an overview. *Annu Rev Immunol.* 1990; 8:253-278.(Biology)

Yamasaki K, Taga T, Hirata Y, Yawata H, Kawanishi Y, Seed B, Taniguchi T, Hirano T, Kishimoto T. Cloning and expression of the human interleukin-6 (BSF-2/IFN beta 2) receptor. *Science.* 1988 August; 241(4867):825-828.(Biology)

Zola H. Detection of receptors for cytokines and growth factors. *Immunologist.* 1994; 2:47-50.(Clone-specific: Flow cytometry)