Technical Data Sheet

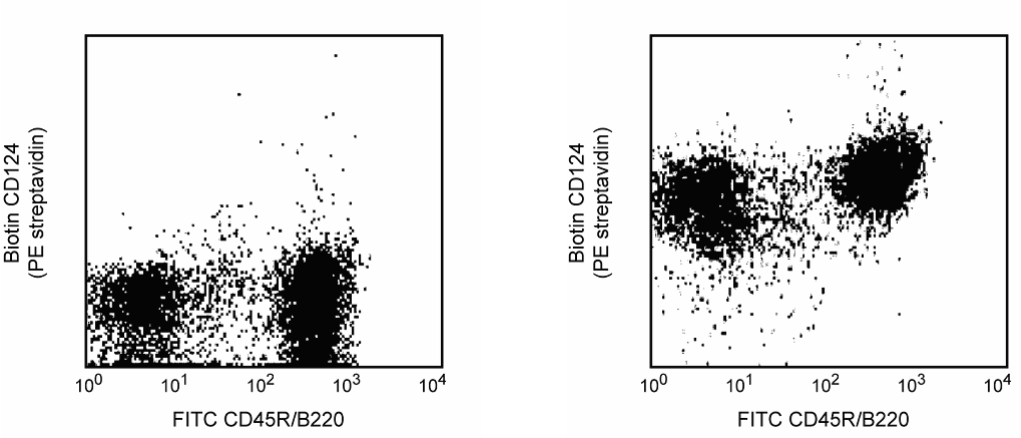
Biotin Rat Anti-Mouse CD124

Product Information

Material Number:	**552508**
Alternate Name:	IL-4 Receptor α chain
Size:	0.1 mg
Concentration:	0.5 mg/ml
Clone:	mIL4R-M1
Isotype:	Rat IgG2a, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

The mIL4R-M1 monoclonal antibody specifically binds to CD124 which is also known as the α subunit of the mouse Interleukin-4 Receptor (IL-4Rα). The mouse IL-4Rα is a 140 kDa transmembrane glycoprotein that is expressed by B and T lymphocytes and a variety of other hematopoietic and nonhematopoietic cells and cell lines. The cell surface IL-4Rα chain binds IL-4 with high affinity and associates with either the common γ chain (IL-4Rα/γc; aka, type I IL-4R) or the IL-13 receptor alpha subunit (IL-4Rα/IL-13Rα; aka, type II IL-4R complex) to form two distinct types of signal-transducing IL-4R complexes. The type I IL-4 receptor complex specifically binds IL-4 whereas the type II IL-4R binds and transduces signals from either IL-4 or IL-13. The mIL4R-M1 antibody blocks IL-4 binding to cells and is reported to be a potent inhibitor of IL-4's biological activities. The mIL4R-M1 antibody also recognizes naturally-occurring, soluble truncated forms of IL-4Rα (sIL-4R) that result either from enzymatic cleavage of the cell surface extracellular IL-4Rα domain or from differential mRNAsplicing and secretion by cells. These sIL-4R retain their high-affinity ligand binding domain and appear to either enhance or inhibit IL-4-mediated functions depending on the relative local levels of IL-4 and sIL-4R.



Expression of cell surface CD124 by B220-positve and -negative splenic lymphocytes from C57BL/6 mice. *Spleen cells from C57BL/6 mice were treated with ACK lysis buffer, washed, and were labeled with purified mouse BD Fc Block™ (Cat. No. 553142) to block mouse Fc receptors. The cells were then stained with biotinylated mIL4R-M1 (0.125 µg/10e6 cells) followed by streptavidin phycoerythrin (0.015 µg, Cat. No. 554061) and FITC anti-mouse B220 (0.06 µg, Cat. No. 553088) and were analyzed by two-color flow cytometry. The levels of CD124 expressed by B220-positive and B220-negative cells (with the light-scattering characteristics of viable lymphocytes) are shown in the two-color dot plot (right panel). Staining with the biotinylated mIL4R-M1 antibody (right panel) is compared to staining derived with a biotinylated rat IgG2a immunoglobulin isotype control antibody (0.125 µg, Cat. No. 553928) that is shown in the left panel.*

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Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
The antibody was conjugated with biotin under optimum conditions, and unreacted biotin was removed.
Store undiluted at 4° C and protected from prolonged exposure to light. Do not freeze.

Application Notes

Application

Flow cytometry	Routinely Tested
ELISA	Routinely Tested
Neutralization	Tested During Development
Immunoprecipitation	Reported

Recommended Assay Procedure:

Immunofluorescent staining and Flow Cytometric Analysis: The biotinylated form of the mIL4R-M1 antibody can be used for the immunofluorescent staining and flow cytometric analysis of nucleated mouse cells to measure their expressed levels of surface CD124. An appropriate biotin conjugated Ig isotype control is clone R35-95 (Cat. No. 553928).

ELISA: The biotinylated mIL4R-M1 antibody can be paired with the mIL4R-M2 antibody, (Cat. No. 552952) for use in a sandwich ELISA for measuring soluble mouse CD124 protein levels and with purified recombinant protein as the standard. The capture antibody should be titrated between 1-4 µg/ml to determine its optimal coating concentration. The mIL4R-M1 detection mAb should be titrated between 0.5-2 µg/ml. To obtain linear standard curves, doubling dilutions of recombinant soluble mouse CD124 ranging from 2000 to 15 pg/ml are recommended for inclusion in each ELISA plate. For specific methodology, please visit the protocols section or chapter on ELISA in the Immune Function Handbook, both of which are posted on our web site, www.bdbiosciences.com.

Neutralization: The mIL4R-M1 antibody blocks the binding of IL-4 to the IL-4 receptor. For use in this application our Cat. No. 552288, in NA/LE format is recommended.

Immunoprecipitation: The mIL4R-M1 antibody is reported to immunoprecipitate mouse IL-4R proteins. Please note that this application is not routinely tested at BD Biosciences Pharmingen.

Suggested Companion Products

Catalog Number	Name	Size	Clone
553142	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.5 mg	2.4G2
554061	PE Streptavidin	0.5 mg	(none)
553928	Biotin Rat IgG2a κ Isotype Control	0.25 mg	R35-95
552952	Purified Rat Anti-Mouse CD124	0.5 mg	mIL4R-M2

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
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.

References

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