

## Technical Data Sheet

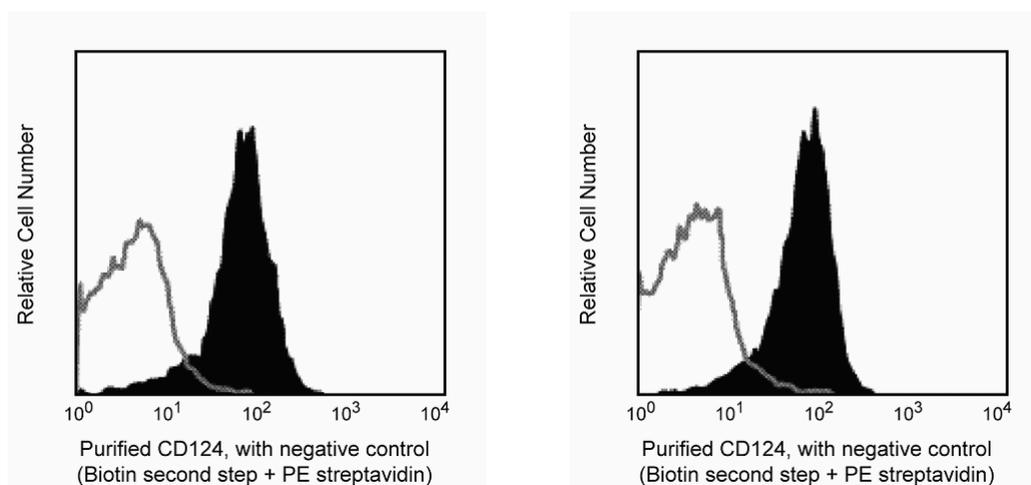
## Purified Rat Anti-Mouse CD124

## Product Information

<b>Material Number:</b>	551853
<b>Alternate Name:</b>	IL-4 Receptor $\alpha$ chain
<b>Size:</b>	0.1 mg
<b>Concentration:</b>	0.5 mg/ml
<b>Clone:</b>	mIL4R-M1
<b>Isotype:</b>	Rat IgG2a, $\kappa$
<b>Reactivity:</b>	QC Testing: Mouse
<b>Storage Buffer:</b>	Aqueous buffered solution containing $\leq 0.09\%$ sodium azide.

## Description

The mIL4R-M1 monoclonal antibody specifically binds to CD124 which is also known as the  $\alpha$  subunit of the mouse Interleukin-4 Receptor (IL-4R $\alpha$ ). The mouse IL-4R $\alpha$  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-4R $\alpha$  chain binds IL-4 with high affinity and associates with either the common  $\gamma$  chain (IL-4R $\alpha/\gamma$ ; aka, type I IL-4R) or the IL-13 receptor alpha subunit (IL-4R $\alpha$ /IL-13R $\alpha$ ; 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-4R $\alpha$  (sIL-4R) that result either from enzymatic cleavage of the cell surface extracellular IL-4R $\alpha$  domain or from differential mRNA splicing 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 normal splenocytes from BALB/c and C57BL/6 mice.** Splenocytes from BALB/c (left panel) and C57BL/6 (right panel) mice were treated with ACK lysis buffer, were washed, and were labeled with purified Fc Block (Cat. No. 553142; Rat IgG2b anti-mouse CD16/CD32) to block mouse Fc receptors. The cells were then stained with mIL4R-M1 (1  $\mu$ g) followed by biotinylated RG7/1.30 (mouse anti-rat IgG2a; 0.25  $\mu$ g, Cat. No. 553894) and streptavidin phycoerythrin (0.015  $\mu$ g, Cat. No. 554061) in a three-layer staining protocol to amplify immunofluorescent signals. Staining with the mIL4R-M1 antibody (filled histograms) is compared to staining with the secondary reagents alone (open histograms).

## Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Store undiluted at 4° C.

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## Application Notes

### Application

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

### Recommended Assay Procedure:

**Immunofluorescent Staining and Flow Cytometric Analysis:** The purified form of the mIL4R-M1 antibody can be used for the immunofluorescent staining ( $\leq 1 \mu\text{g}$  antibody/10e6 cells) and flow cytometric analysis of nucleated mouse cells to measure their expressed levels of surface CD124. An appropriate purified Ig isotype control is clone R35-95 (Cat. No. 553927). A three-layer staining protocol is recommended for maximizing the detection of IL-4R $\alpha$  expressed by cells as detailed in the figure legend.

**ELISA:** The purified mIL4R-M1 antibody is useful for a sandwich ELISA that measures soluble mouse CD124 protein levels. The biotinylated mIL-4R-M1 antibody (Cat. No. 552508) can be paired with the purified mIL4R-M2 (rat anti-mouse sIL-4R) antibody, Cat. No. 552952, and recombinant soluble mIL-4R $\alpha$  as the standard.

**Neutralization:** The mIL4R-M1 antibody reportedly blocks IL-4's binding to and biological effects on IL-4R-positive cells. Note: for use in vivo and in vitro systems, our NA/LE (no azide, low endotoxin) format, Cat. No. 552288 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
553894	Biotin Mouse Anti-Rat IgG2a	0.5 mg	RG7/1.30
554061	PE Streptavidin	0.5 mg	(none)
553927	Purified Rat IgG2a, $\kappa$ Isotype Control	0.5 mg	R35-95
552288	Purified NA/LE Anti-mouse CD124	0.5 mg	mIL4R-M1

### 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](http://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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