

## Technical Data Sheet

## Purified Rat Anti-Mouse CD124

## Product Information

<b>Material Number:</b>	552952
<b>Alternate Name:</b>	IL-4 Receptor $\alpha$ chain
<b>Size:</b>	0.5 mg
<b>Concentration:</b>	0.5 mg/ml
<b>Clone:</b>	mIL4R-M2
<b>Immunogen:</b>	CTLL-19.4 cells
<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-M2 monoclonal antibody specifically binds to the  $\alpha$  subunit of the mouse Interleukin-4 Receptor (IL-4R $\alpha$ , aka, CD124). The mIL4R-M2 antibody does not recognize human or rat IL-4R; crossreactivities with IL-4R from other species have not been established. 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-M2 antibody blocks IL-4 binding to cells and is reported to be a potent inhibitor of IL-4's biological activities. The mIL4R-M2 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. The immunogen used to generate the mIL4R-M2 hybridoma was CTLL-19.4 cells, a subclone of CTLL-2 cells that express high levels of IL-4R $\alpha$ .

## Preparation and Storage

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

Store undiluted at 4° C.

## Application Notes

## Application

ELISA Capture	Routinely Tested
Immunoprecipitation	Reported
Neutralization	Reported

## Recommended Assay Procedure:

**ELISA Capture:** The purified mIL-4R-M2 antibody (Cat. No. 551853) is useful as a capture antibody for a sandwich ELISA that measures soluble mouse IL-4R $\alpha$  protein levels. The purified mIL-4R-M2 antibody can be paired with biotinylated mIL-4R-M1 antimouse IL-4R $\alpha$  antibody (Cat. No. 552508) as the detection antibody and with purified recombinant mouse IL-4R $\alpha$  protein as the standard. This capture antibody should be titrated between 1-4  $\mu$ g/ml to determine its optimal coating concentration for ELISA. To obtain linear standard curves, doubling dilutions of recombinant soluble mouse IL-4R $\alpha$  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](http://www.bdbiosciences.com).

**Note:** This ELISA antibody pair shows no cross-reactivity with the following recombinant mouse proteins: IL-1 $\alpha$ , IL-1 $\beta$ , IL-2, IL-3, IL-4, IL-5, IL-7, IL-10, IL-13, IL-15, IL-18, TNF, sTNFR1, sTNFR2, GM-CSF, CSF-1, Granzyme B, and IFN- $\gamma$ .

**Immunoprecipitation:** The mIL4R-M2 antibody is reported to immunoprecipitate mouse IL-4R $\alpha$  proteins. Please note that this application is not routinely tested at BD Biosciences.

## BD Biosciences

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## Suggested Companion Products

Catalog Number	Name	Size	Clone
552508	Biotin Rat Anti-Mouse CD124	0.1 mg	mIL4R-M1

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to [wwwbdbiosciences.com/pharmingen/protocols](http://wwwbdbiosciences.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

- Beckmann MP, Schooley KA, Gallis B, et al. Monoclonal antibodies block murine IL-4 receptor function. *J Immunol.* 1990; 144(11):4212-4217.(Immunogen: Blocking, Immunoprecipitation, Neutralization)
- Chilton PM, Fernandez-Botran R. Production of soluble IL-4 receptors by murine spleen cells is regulated by T cell activation and IL-4. *J Immunol.* 1993; 151(1):5907-5917.(Biology)
- Feldman GM, Ruhl S, Bickel M, Finbloom DS, Pluznik DH. Regulation of interleukin-4 receptors on murine myeloid progenitor cells by interleukin-6. *Blood.* 1991; 78(7):1678-1684.(Biology)
- Hassuneh MR, Nagarkatti PS, Nagarkatti M. Evidence for the participation of interleukin-2 (IL-2) and IL-4 in the regulation of autonomous growth and tumorigenesis of transformed cells of lymphoid origin. *Blood.* 1997; 89(2):610-620.(Biology)
- Kubo M, Yamashita M, Abe R, et al. CD28 costimulation accelerates IL-4 receptor sensitivity and IL-4-mediated Th2 differentiation. *J Immunol.* 1999; 63(5):2432-2442.(Biology)
- Lowenthal JW, Castle BE, Christiansen J, et al. Expression of high affinity receptors for murine interleukin 4 (BSF-1) on hemopoietic and nonhemopoietic cells. *J Immunol.* 1988; 140(2):456-464.(Biology)
- Mosley B, Beckmann MP, March CJ, et al. The murine interleukin-4 receptor: molecular cloning and characterization of secreted and membrane bound forms. *Cell.* 1989; 59(2):335-348.(Biology)
- Sempowski GD, Beckmann MP, Derdak S, Phipps RP. Subsets of murine lung fibroblasts express membrane-bound and soluble IL-4 receptors. Role of IL-4 in enhancing fibroblast proliferation and collagen synthesis. *J Immunol.* 1994; 152(7):3606-3614.(Biology)