

## Technical Data Sheet

## Purified NA/LE Rat Anti-Mouse CD124

## Product Information

<b>Material Number:</b>	552288
<b>Alternate Name:</b>	IL-4 Receptor $\alpha$ chain
<b>Size:</b>	0.5 mg
<b>Concentration:</b>	1.0 mg/ml
<b>Clone:</b>	mIL4R-M1
<b>Isotype:</b>	Rat IgG2a, $\kappa$
<b>Reactivity:</b>	QC Testing: Mouse
<b>Storage Buffer:</b>	No azide/low endotoxin: Aqueous buffered solution containing no preservative, 0.2 $\mu$ m sterile filtered. Endotoxin level is $\leq 0.01$ EU/ $\mu$ g ( $\leq 0.001$ ng/ $\mu$ g) of protein as determined by the LAL assay.

## 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 $\alpha$ / $\gamma$ c; 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.

## Preparation and Storage

Store undiluted at 4°C.

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

This preparation contains no preservatives, thus it should be handled under aseptic conditions.

## Application Notes

## Application

Flow cytometry	Routinely Tested
Neutralization	Tested During Development
Immunoprecipitation	Reported

## Neutralization Activity:

This antibody has been reported to be useful for neutralizing the action of recombinant mouse IL-4. Neutralization activity may be measured with a proliferation assay using 200 pg/mL recombinant mouse IL-4 (Cat. No. 550067) to stimulate D36 cells at  $1 \times 10^5$  cells/mL as indicator cells.

50% neutralization (ND50) at 2–20 ng/mL

$\geq 95\%$  neutralization at 1–10  $\mu$ g/mL

## Suggested Companion Products

Catalog Number	Name	Size	Clone
554687	Purified NA/LE Rat IgG2a $\kappa$ Isotype Control	0.5 mg	R35-95
551853	Purified Rat Anti-Mouse CD124	0.1 mg	mIL4R-M1
550067	Recombinant Mouse IL-4	10 $\mu$ g	(none)

## Product Notices

- Since applications vary, each investigator should titrate the reagent to obtain optimal results.
- Please refer to [www.bdbiosciences.com/pharmingen/protocols](http://www.bdbiosciences.com/pharmingen/protocols) for technical protocols.

## References

Beckmann MP, Schooley KA, Gallis B, et al. Monoclonal antibodies block murine IL-4 receptor function. *J Immunol.* 1990; 144(11):4212-4217. (Clone-specific: Blocking, Immunoprecipitation)

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. (Clone-specific: Flow cytometry)

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Gessner A, Rollinghoff M. Biologic functions and signaling of the interleukin-4 receptor complexes. *Immunobiology*. 2000; 201(3-4):285-307. (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. (Clone-specific: Flow cytometry)

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. (Clone-specific: Flow cytometry)

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. (Clone-specific: Flow cytometry)

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