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Product Information

Monoclonal Anti-Interleukin-1α /Interleukin-1F1 Clone 40508
produced in rat, purified immunoglobulin

Catalog Number **I8159**

Product Description

Monoclonal Anti-Interleukin-1α/Interleukin-1F1 (rat IgG2B isotype) is purified from a hybridoma produced by the fusion of mouse myeloma cells and B cells from a rat immunized with recombinant mouse Interleukin-1α (GeneID 16175) expressed and purified from *Escherichia coli*. The antibody is purified by Protein G affinity chromatography.

Monoclonal Anti-Interleukin-1α/Interleukin-1F1 recognizes murine Interleukin-1α. Applications include ELISA and neutralization. This antibody will not neutralize the biological activity of rrIL-1α. When used in combination with a biotinylated Anti-mouse Interleukin-1α detection antibody in sandwich ELISAs, less than 1% cross-reactivity was observed with rrIL-1α, rpIL-1α and rhIL-1α.

Interleukin-1 (IL-1) is a name that designates two proteins, IL-1α and IL-1β, which are the products of distinct genes, but which share approximately 25% amino acid sequence identity. Both bind to the same cell surface receptor, and elicit nearly identical biological responses. IL-1α is synthesized as a precursor protein that lacks a signal peptide. IL-1α precursor is localized to the nucleus, cytosol, and plasma membrane. Mature IL-1α is generated via cleavage by the cysteine protease calpain. A small percentage of total cellular IL-1α precursor can be found on the surface of various cells. This membrane bound IL-1α is probably a glycosylated or myristoylated form of the cytokine.

Interleukin-1 (IL-1), originally known as lymphocyte activating factor (LAF), activates T cells and lymphocytes, which then proliferate and secrete interleukin-2.[1] IL-1 is primarily released from stimulated macrophages and monocytes, but also is released from several other cell types,[2] and is thought to play a key role in inflammatory and immune responses.[3] Other synonyms for IL-1 include: endogenous pyrogen (EP), mitogenic protein (MP), helper peak-1 (HP-1), T cell replacing factor III (TRF III or TRFH), B cell activating factor (BAF) and B cell differentiation factor (BDF).[4]

Reagent

Supplied lyophilized from a 0.2 µm filtered solution of phosphate buffered saline with 5% trehalose.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

To one vial of lyophilized powder, add 1 mL of 0.2 µm filtered PBS to produce a 0.5 mg/mL stock solution. If aseptic technique is used, no further filtration should be necessary for use in cell culture environments.

Storage/Stability

Prior to reconstitution, store at –20 °C. Reconstituted product may be stored at 2-8 °C for up to one month. For extended storage, freeze in working aliquots at –20 °C. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended.

Neutralization

Mouse IL-1α stimulates the ^{3}H-thymidine incorporation by murine T helper D10.G4.1 cells in a dose-dependent manner. The ED_{50} for this effect is typically 3-7 pg/mL.[5]

The Neutralization $Dose_{50}$ (ND_{50}) for this antibody is defined as that concentration of antibody required to yield one-half maximal inhibition of the cytokine activity on a responsive cell line, when that cytokine is present at a concentration just high enough to elicit a maximum response.

Product Profile

Capture ELISA: this product can be used as a capture antibody in a mouse IL-1α ELISA in combination with biotinylated, mouse IL-1α detection antibody. Using plates coated with 100 µL/well of the capture antibody at 2 µg/mL, in combination with 100 µL/well of the detection antibody, an ELISA for sample volumes of 100 µL can be obtained. To arrive at the optimal dose range for this ELISA, set up a two-fold dilution series of the protein standard starting with 1 ng/mL.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

Endotoxin: <0.1 EU/µg antibody as determined by the LAL method.

References

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2. Oppenheim, J., et al., *Immunol. Today*, **7**, 45 (1986).
3. Durum, S., et al., *Ann. Rev. Immunol*., **3**, 263 (1985).
4. Aarden, L., et al., *J. Immunol*., **123**, 2928 (1979).
5. Symons, J. A. et al., in *Lymphokines and Interferons*, *a practical approach*, IRL Press, M. J. Clemens, A. G. Morris, and A.J.H. Gearing, eds. p. 272 (1987).

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