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Product Information

Anti-Interleukin-1α propeptide
produced in sheep, affinity isolated antibody

Catalog Number **I9034**

Product Description

Anti-Interleukin-1α propeptide (IL-1α propeptide) is produced in sheep using as immunogen recombinant human Interleukin-1α propeptide (GeneID 3552), amino acids 2-112, expressed and purified from *Escherichia coli*. The antibody is purified using human Interleukin-1α propeptide affinity chromatography.

Anti-Interleukin-1α propeptide recognizes human Interleukin-1α. Applications include immunoblotting and flow cytometry. In immunoblotting, this antibody shows less than 1% cross-reactivity with mature recombinant human Interleukin-1α.

Interleukin 1-α (IL-1α) is synthesized as a 33 kDa precursor that mainly remains intracellular. Cleavage by calpain in keratinocytes, epithelial cells and endotoxin-stimulated peripheral blood mononuclear cells produces a 112 amino acid, 16 kDa propeptide and a 159 amino acid, 17 kDa mature protein. A nuclear localization site in the propeptide allows transit to the nucleus, where either the precursor or the propeptide can activate transcription or alter RNA splicing. This can increase motility or senescence of normal cells or increase apoptosis of tumor cells. Human and mouse IL-1α propeptide share 71% amino acid identity.

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 0.5 mL of 0.2 µm filtered PBS to produce a 0.2 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.

Product Profile

Immunoblotting: a working concentration of 0.1-0.2 µg/mL is recommended to detect human Interleukin-1α propeptide. The detection limit for recombinant human Interleukin-1α propeptide is ~1 ng/lane.

Flow Cytometry: this antibody can be used in flow cytometry using LPS-treated PBMCs. For intracellular staining to detect Interleukin-1α propeptide, cells must first be fixed and permeablilized using 4% paraformaldehyde and 0.1% saponin in PBS. Dilute this antibody to ~25 µg/mL and add 10 µL of the diluted solution to 1-5 x 10^5 cells in a total reaction volume not exceeding 200 µL. The binding of unlabeled antibodies may be visualized by adding a secondary developing reagent such as anti-sheep IgG conjugated to a fluorochrome.

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

References

1. Gery, I., et al., *J. Exp. Med*., **136**, 128 (1972).
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).

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