

Interleukin-1 beta ELISA Kit | IL-1beta elisa kit

Interleukin-1 beta (IL-1beta)

CATALOG #
AAA77845

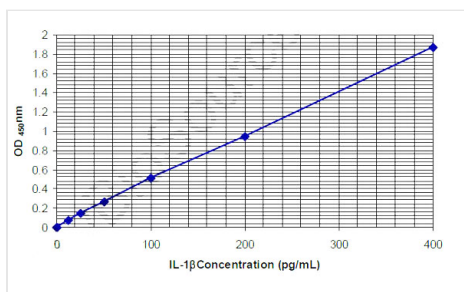
PRODUCT SYNONYMS

Interleukin-1 beta; Interleukin-1 beta (IL-1beta); Interleukin-1 beta (IL-1b); IL-1beta elisa kit

PRODUCT SPECIFICATIONS

Specificity	This sandwich ELISA can detect both natural and recombinant human IL-1beta. This kit exhibits no detectable cross-reactivity with human; IL-1alpha, IL-1RA, IL-2, IL-3, IL-4, IL-6, IL-7, IL-8, IFN-alpha, IFN-gamma, TNF-alpha or mouse IL-1beta.
Sequence Length	268
Assay Type	Quantitative Sandwich
Samples	Cell culture supernatant, serum, plasma, and other biological fluids
Intra-assay Precision	To determine within-run precision, three different samples of known concentration were assayed by replicates of 20 in 1 assay.
Inter-assay Precision	To determine between-run precision, three different samples of known concentration were assayed by replicates on 20 different assays.

IMAGES



Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for IL-1beta elisa kit	Background: Interleukin 1 (IL-1) is considered the first of the super-family of regulatory and inflammatory cytokines. There are two distinct IL-1 proteins: Interleukin 1alpha and Interleukin 1beta. The two forms of IL-1 are distinct gene products; they recognize the same receptor and share biological properties. IL-1 has a number of alternative names, including lymphocyte activating factor, endogenous pyrogen, catabolin, hemopoietin-1, melanoma growth inhibition factor, and osteoclast activating factor. The properties and biological activities of IL-1 have been extensively reviewed. IL-1 is expressed by many cells and has multiple functions including local inflammation. Cells known to express IL-1beta include astrocytes, adrenal cortical cells, natural killer (NK) cells, macrophages and monocytes, endothelial cells, keratinocytes, megakaryocytes and platelets, neurons, neutrophils, oligodendroglia, osteoblasts, Schwann cells, trophoblasts, and T cells plus fibroblasts. The biological properties of IL-1 show some overlap with other cytokines including tumor necrosis factor (TNF) and interleukin 6 (IL-6), which are all capable of stimulating T and B lymphocytes, augmenting cell proliferation and initiating or suppressing gene expression for several proteins. Although IL-1 is generally thought of as a prototypical pro-inflammatory cytokine, the effects of IL-1 are not limited to inflammation. Following bacterial or immunoglobulin ligation of monocyte/macrophage CD14 (the LPS receptor) or CD64 (the IgG receptor), IL-1 can be released into a local environment. Within this environment, IL-1 impacts a number of cells. First, capillary endothelial cells are induced to do two things, one, secrete chemokines such as MCP-1, and two, up-regulate the expression of vascular adhesion molecules such as E-Selectin, ICAM-1 and VCAM-1. MCP-1 provides a stimulus for chemotaxis and activates mononuclear cell integrins, thus facilitating mononuclear infiltration into an area of early inflammation. IL-1 also induces expression of itself in newly arriving monocytes, thus reinforcing the overall process. In terms of other pro-inflammatory molecules, IL-1 apparently is needed for the efficient production of IFN-gamma. On resident NK cells, IL-1 apparently works in conjunction with macrophage-derived IL-12 to induce IFN-gamma secretion, resulting in an IFN-gamma induced activation of macrophages. Finally, IL-1 also induces the expression of MMPs from resident fibroblasts. This function can have at least two effects: first extracellular matrix degradation can facilitate monocyte migration, and second, MMPs are known to degrade IL-1beta, thus down-modulating the local inflammatory response initiated by IL-1. Principle of the Assay: This IL-1beta enzyme linked immunosorbent assay (ELISA) applies a technique called quantitative sandwich immunoassay. The microtiter plate provided in this kit has been pre-coated with a monoclonal antibody specific to IL-1beta. Standards or samples are then added to the appropriate microtiter plate wells with a biotin-conjugated monoclonal antibody preparation specific for IL-1beta and incubated. IL-1beta, if present, will bind and become immobilized by the antibody pre-coated on the wells and then become "sandwiched" by biotin conjugate. The microtiter plate wells are thoroughly washed to remove unbound IL-1beta and other components of the sample. In order to quantitatively determine the amount of IL-1beta present in the sample, Avidin conjugated to Horseradish Peroxidase (HRP) is added to each microplate well and incubated. Avidin is a tetramer containing four identical subunits, each having a high affinity-binding site for biotin. The wells are thoroughly washed to remove all unbound HRP-conjugated Avidin and a TMB (3,3',5,5' tetramethyl-benzidine) substrate solution is added to each well. The enzyme (HRP) and substrate are allowed to react over a short incubation period. Only those wells that contain IL-1beta, biotin-conjugated antibody, and enzyme-conjugated Avidin will exhibit a change in colour. The enzyme-substrate reaction is terminated by the addition of a sulphuric acid solution and the colour change is measured spectrophotometrically at a wavelength of 450 nm ± 2 nm. In order to measure the concentration of IL-1beta in the samples, this kit includes two calibration diluents (Calibrator Diluent I for serum/plasma testing and Calibrator Diluent II for cell culture supernatant testing.) According to the testing system, the provided standard is diluted (2-fold) with the appropriate Calibrator Diluent and assayed at the same time as the samples. This allows the operator to produce a standard curve of Optical Density (O.D) versus IL-1beta concentration (pg/mL). The concentration of IL-1beta in the samples is then determined by comparing the O.D. of the samples to the standard curve. Intended Uses: This Human IL-1beta ELISA kit is to be used for the in vitro quantitative determination of human interleukin-1beta (IL-1beta) concentrations in cell culture supernatant, serum, plasma and other biological fluids. This kit is intended for LABORATORY RESEARCH USE ONLY and is not for use in test or therapeutic procedures.
Product Categories/Family for IL-1beta elisa kit	ELISA Kits for Human Cytokines and Receptors

NCBI AND UNIPROT INFORMATION

NCBI GI #	126723555
NCBI GeneID	100008990
NCBI Accession #	NP_001075670.1
NCBI GenBank Nucleotide #	NM_001082201.1

Molecular Weight	30,665 Da
NCBI Official Full Name	interleukin-1 beta
NCBI Official Symbol	IL1B
NCBI Official Synonym Symbols	IL1-BETA
NCBI Protein Information	interleukin-1 beta; IL-1 beta; interleukin 1 beta; lymphocyte proliferation-potentiating factor
UniProt Protein Name	Interleukin-1 beta
UniProt Gene Name	IL1B
UniProt Entry Name	IL1B_RABIT

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/il-1beta-elisa-kits/interleukin-1-beta/77845>