

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

Interleukin-1alpha (IL-1alpha)

CATALOG #
AAA77881

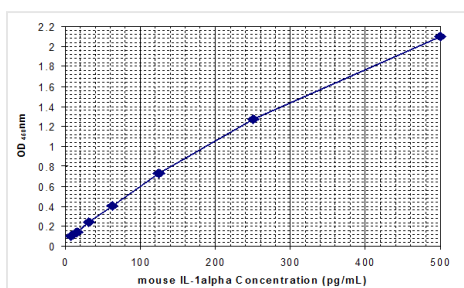
PRODUCT SYNONYMS

Interleukin-1alpha; Interleukin-1alpha (IL-1alpha); Interleukin-1a (IL-1a); IL-1alpha elisa kit

PRODUCT SPECIFICATIONS

Samples	Serum, Cell Culture Supernatant, and other biological fluids
Assay Type	Sandwich
Sensitivity	The minimum detectable dose of mouse IL-1alpha was determined by adding two standard deviations to the mean optical density value of 16 zero standard replicates and calculating the corresponding concentration from the standard curve. The minimum detectable dose of mouse IL-1alpha calculated from calibrator II diluted standard curve was <0.8pg/mL.
Intra-assay Precision	To determine within-run precision, three different samples of known concentration were assayed by using 16 replicates in 1 assay.
Inter-assay Precision	To determine between-run precision, three different samples of known concentration were measured by using replicates on 8 different assays with calibrator II as standard diluent.
Intended Uses	This Mouse IL-1alpha ELISA kit is to be used for the in vitro quantitative determination of mouse interleukin 1alpha (IL-1alpha) concentrations in serum, cell culture supernatant, and other biological fluids. This kit is intended for LABORATORY RESEARCH USE ONLY.

IMAGES



Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for IL-1alpha elisa kit

Principle of the assay: This mouse IL-1alpha enzyme-linked immunosorbent assay (ELISA) applies a technique called a quantitative sandwich immunoassay. The microtiter plate provided in this kit has been pre-coated with a monoclonal antibody specific for mouse IL-1alpha. When standards or samples are added to the appropriate microtiter plate wells, mouse IL-1alpha in the standards or samples will be immobilized by the precoated antibody during incubation. Then, a biotin-conjugated antibody preparation specific for mouse IL-1alpha is added to each well and incubated. The biotin labelled antibody attaches to the wells by binding to mouse IL-1alpha. After plate washing, other proteins, components and unattached biotin labelled antibody is removed. After that, avidin-horseradish peroxidase (HRP) conjugate is added to each well. Avidin has a very high affinity for biotin, thus, it links the tracer (HRP) sturdily to the biotin labelled antibody. The wells are thoroughly washed to remove all unbound avidin-HRP conjugate 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 wells that contain mouse IL-1alpha will exhibit a change in colour. The extent of colour change is proportional to the quantity of mouse IL-1alpha present in the standards/samples. The enzyme-substrate reaction is terminated by the addition of a sulphuric acid solution and the colour change is measured spectrophotometrically at a wave length of 450 nm +/- 2 nm. In order to measure the concentration of mouse IL-1alpha in the samples, this kit contains 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-1alpha concentration (pg/mL). The concentration of mouse IL-1alpha in the samples is then determined by comparing the O.D. of the samples to the standard curve.

Background: IL-1alpha is a member of interleukin 1 family. IL-1alpha and IL-1beta recognize the same IL-1 receptor and share a number of similar biological functions. IL-1alpha is predominantly a cell-associated molecule whereas IL-1beta is a secreted molecule. IL-1alpha is synthesized primarily as a precursor that is biologically active via specific cell binding. Precursor IL-1alpha can be cleaved by extracellular proteases when the cells die, and can also be cleaved by activation of the calcium-dependent, membrane-associated calpains. Cleavage of the mouse IL-1alpha precursor results in an 18 kDa mature mouse IL-1alpha molecule. IL-1alpha is constitutively expressed by epithelial cells and the essential role of IL-1alpha in maintenance of skin barrier function. IL-1alpha can also be produced by macrophages and neutrophils by the induction of microbes and microbial products. IL-1alpha can induce its own synthesis as well as the production of TNF and IL-6. IL-1alpha induces the production of IL-2, IL-2 receptors, GM-CSF and IL-4 from activated T cells, stimulates B cell proliferation and maturation, and increases immunoglobulin synthesis. IL-1alpha affects NK cell activation and LAK production associated with other cytokines, and induces prostaglandin synthesis in endothelial cells and smooth muscle cells, collagenase production in synovial cells, and cartilage and calcium resorption in bones. Studies have shown a connection between IL-1alpha and the pathogenesis of endometriotic lesions. The increased expression of both matrix-degrading MMP-1 and its major stimulatory cytokine IL-1alpha in endometriotic lesions and the selective co-expression in the stroma of endometriotic foci clearly suggests the involvement of the IL-1alpha molecule in the pathogenic mechanisms leading to local invasion and tissue destruction. Reports also indicate that the translation of the neurotransmitter gene only occurs after receiving IL-1alpha stimulation. This effect was suppressed by co-stimulation with IL-1 receptor antagonist. High levels of IL-1alpha are associated with sepsis, rheumatoid arthritis, inflammatory bowel disease, acute and chronic myelogenous leukemia, insulin-dependent diabetes mellitus, and atherosclerosis.

Product Categories/Family for IL-1alpha elisa kit

ELISA Kits for Mouse Cytokines and Receptors

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-1alpha-elisa-kits/interleukin-1alpha/77881>