

Mouse IL-4 ELISA Kit | IL-4 elisa kit

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CATALOG #
AAA281320

REACTIVITY
Mouse

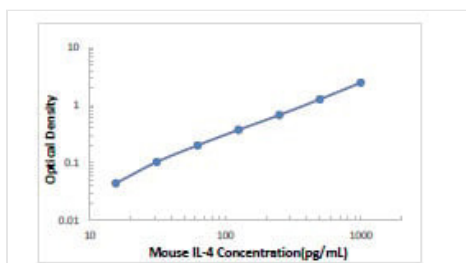
PRODUCT SYNONYMS

IL-4; Mouse IL-4 ELISA Kit; IL-4 elisa kit

PRODUCT SPECIFICATIONS

Reactivity	Mouse
Specificity	This assay recognizes both recombinant and natural mouse IL-4. The factors listed below were prepared at 50ng/ml and assayed for Three samples of known concentration were tested 20 times on one plate to evaluate the Intra-plate precision.cross-reactivity. No significant cross-reactivity was observed with the following: Recombinant mouse Recombinant rat Recombinant human IL-1 IL-4 IL-4 IL-2 IL-3 IL-5 IL-6 IL-8 IL-10 IFN TNF
Sequence Length	133
Samples	Cell culture supernates, serum and plasma
Assay Type	Quantitative Sandwich
Sensitivity	< 3.9 pg/mL
Intra-assay Precision	Three samples of known concentration were tested 20 times separate assays to evaluate the Inter-plate precision.Assay were using two lots of components.
Inter-assay Precision	Three samples of known concentration were tested 20 times separate assays to evaluate the Inter-plate precision.Assay were using two lots of components.
Preparation and Storage	Store at 4 degree C.

IMAGES



Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for IL-4 elisa kit	Principle of the Assay: This assay employs the quantitative sandwich enzyme immunoassay technique. A monoclonal antibody specific for IL-4 has been pre-coated onto a microplate. Standards and samples are pipetted into the wells and any IL-4 present is bound by the immobilized antibody. Following incubation unbound samples are removed during a wash step, and then a detection antibody specific for IL-4 is added to the wells and binds to the combination of capture antibody-IL-4 in sample. Following a wash to remove any unbound combination, and enzyme conjugate is added to the wells. Following incubation and wash steps, a substrate is added. A colored product TMB is formed in proportion to the amount of IL-4 present in the sample. The reaction is terminated by addition of acid and absorbance is measured. A standard curve is prepared from seven IL-4 standard dilutions and IL-4 sample concentration determined. Background/Introduction: Interleukin-4 (IL-4), also known as B cell-stimulatory factor-1, is an approximately 18-20 kDa monomeric cytokine that displays pleiotropic effects during immune responses (1-4). Mouse IL-4 is synthesized as a 140 amino acid (aa) precursor with a 20 aa signal sequence and a 120 aa mature chain. The cytokine contains three potential sites for N-linked glycosylation, three intrachain disulfide bonds, and adopts a bundled four alpha-helix structure (5). Analogous to human, mouse IL-4 has a reported alternative splicing short form. Unlike human, this form is suggested to be very minor in expression and of questionable significance (6). Mature mouse IL-4 shares 43%, and 63% aa sequence identity with human and rat IL-4, respectively. Research has shown that human, mouse, and rat IL-4 are all species-specific in their activities (7-9). IL-4 is expressed by Th2-biased CD4 + T cells, basophils, mast cells, NKT and gammadelta T cells, and eosinophils (1-2, 10). IL-4 is a key player in the type 2 immune response as it promotes T helper type 2 (Th2) differentiation and B cell commitment to the immunoglobulin G1 and immunoglobulin E isotypes (11). IL-4 initiates Th2 differentiation by binding to either a type I or type II receptor complex that contains the IL-4 Ralpha subunit coupled to either the gamma chain or the IL-13Ralpha1, respectively (12). Phosphorylation of the cytoplasmic C-terminal tails by the Janus Kinase (JAK) family of tyrosine kinases results from the heterodimerization of the IL-4 receptor on the cell surface (12). This then leads to the recruitment and phosphorylation of STAT6 (12). Following the phosphorylation of STAT6, conformational changes take place leading to dimerization, nuclear translocation, DNA binding and transcriptional activation of several target genes including the genes for IL-4, IL-5, and IL-13, and the Th2 specific factors GATA3 and c-Maf (12). Functionally, IL-4 promotes cell proliferation and survival, immunoglobulin class switch to IgG 1 and IgE in mouse B cells, priming and chemotaxis of mast cells, eosinophils, and basophils, an acquisition of the Th2 phenotype by naïve CD4 + cells, and the proliferation and activation of epithelial cells (13-16). IL-4 is also a significant cytokine in tumor immunology (17). Researchers found in early mouse experiments that IL-4 exhibited potent anti-tumor ability. The mice rejected IL-4 producing tumors and developed long-lasting anti-tumor immunity (17). This is perhaps due to IL-4's anti-angiogenic effect and/or its ability to activate select CD8 + T cells. Paradoxically, new evidence shows that IL-4 is a tumor-promoting molecule, and thus a cytokine with opposing effects (17). This is possible due to the IL-4 induced upregulation of anti-apoptotic molecules in tumor cells, and the downregulation of cytolytic molecules on CD8 + T cells. In addition, tumor produced IL-4 is also suggested to act on local tumor- associated-macrophages (TAMs), inducing the secretion of cathepsins that promote cell migration (18).
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NCBI AND UNIPROT INFORMATION

NCBI GI #	55742622
NCBI GeneID	397225
NCBI Accession #	NP_999288.1
NCBI GenBank Nucleotide #	NM_214123.1
UniProt Accession #	Q04745; Q29054; Q8MKE6
Molecular Weight	15,023 Da
NCBI Official Full Name	interleukin-4
NCBI Official Symbol	IL4
NCBI Protein Information	interleukin-4
UniProt Protein Name	Interleukin-4
UniProt Gene Name	IL4
UniProt Synonym Gene Names	IL-4; BSF-1

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://www.aaabiotech.com/mouse-elisa-kits/il-4/281320>