**APA077Mu61 50μg**
**Active Interleukin 4 (IL4)**
**Organism Species: *Mus musculus (Mouse)***
***Instruction manual***

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

# [ PROPERTIES ]

**Source:** Eukaryotic expression.
**Host:** 293F cell
**Residues:** His21~Ser140
**Tags:** N-terminal His-tag
**Purity:** >95%
**Endotoxin Level:** <1.0EU per 1μg (determined by the LAL method).
**Buffer Formulation:** PBS, pH7.4, containing 5% Trehalose.
**Original Concentration:** 200μg/mL
**Applications:** Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
**Predicted isoelectric point:** 8.3
**Predicted Molecular Mass:** 15.2kDa
**Accurate Molecular Mass:** 18/19kDa as determined by SDS-PAGE reducing conditions.
**Phenomenon explanation:**
The possible reasons that the actual band size differs from the predicted are as follows:

1. Splice variants: Alternative splicing may create different sized proteins from the same gene.
2. Relative charge: The composition of amino acids may affects the charge of the protein.
3. Post-translational modification: Phosphorylation, glycosylation, methylation etc.
4. Post-translation cleavage: Many proteins are synthesized as pro-proteins, and then cleaved to give the active form.
5. Polymerization of the target protein: Dimerization, multimerization etc.

## [ USAGE ]

Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.

## [ STORAGE AND STABILITY ]

**Storage:** Avoid repeated freeze/thaw cycles.
Store at 2-8°C for one month.
Aliquot and store at -80°C for 12 months.

**Stability Test:** The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37°C for 48h, and no obvious degradation and precipitation were observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

## [ SEQUENCE ]

HIHGCDKNHL REIIGILNEV TGEGTPCTEM DVPNVLTATK NTTESELVCR ASKVLRIFYL KHGKTPCLKK NSSVLMELQR LFRAFRCLDS SISCTMNESK STSLKDFLES LKSIMQMDYS

## [ ACTIVITY ]

Interleukin 4 (IL4) is a pleiotropic cytokine primarily secreted by activated T cells, mast cells, and basophils. It plays a central role in immune regulation by promoting the differentiation of naïve T cells into Th2 cells and stimulating B cell proliferation and antibody class switching to IgE and IgG1. IL4 is crucial for defense against parasitic infections and is involved in allergic responses, including asthma and atopic dermatitis. It signals through the IL4 receptor complex , activating JAK-STAT pathways to modulate gene expression. Dysregulated IL4 production is associated with autoimmune diseases, chronic inflammation, and cancer. Its dual role in both promoting and suppressing immune responses makes it a key therapeutic target.Besides,Interleukin 1 Alpha (IL1a) has been identified as an interactor of IL4, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant mouse IL4 and recombinant goat IL1a. Briefly, IL4 was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 µl were then transferred to IL1a-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-IL4 pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37℃, wells were

aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37℃. Finally, add 50 μL stop solution to the wells and read at 450/630nm immediately. The binding activity of recombinant mouse IL4 and recombinant goat IL1a was shown in Figure 1, the EC50 for this effect is 1.595μg/mL.

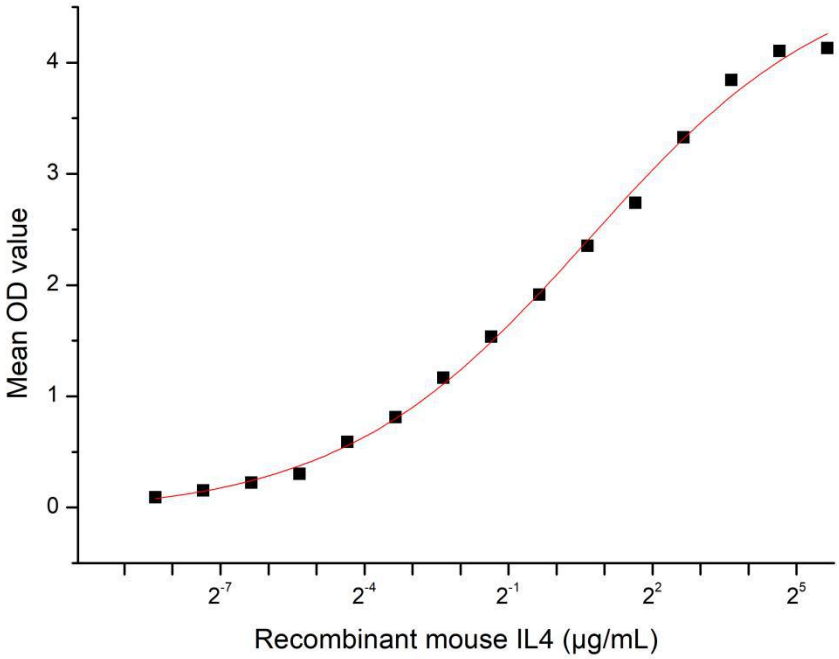


**Figure 1. The binding activity of recombinant mouse IL4 and recombinant goat IL1a**

## [ IDENTIFICATION ]

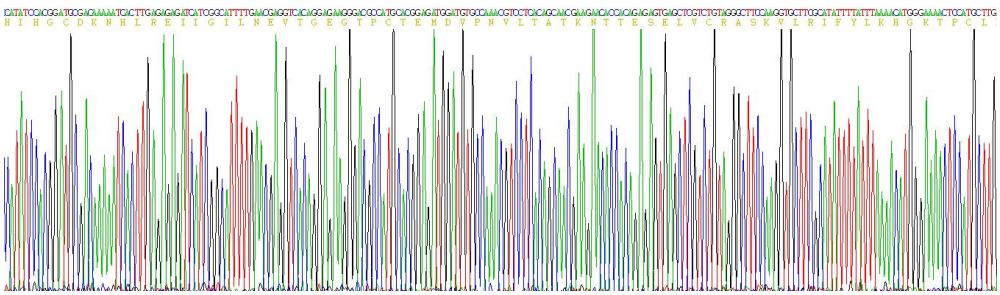

**Figure 2. Gene Sequencing (extract)**

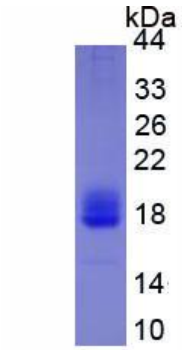


**Figure 3. SDS-PAGE**

**Sample: Active recombinant IL4, Mouse**

## [ IMPORTANT NOTE ]

The kit is designed for in vitro and research use only, we will not be responsible for any issue if the kit was used in clinical diagnostic or any other procedures.