

APA033Mu61 200µg
Active Interferon Alpha (IFNα)
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: Cys24~Lys189

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: 800µg/mL

Applications: Activity Assays.

(May be suitable for use in other assays to be determined by the end user.)

Predicted isoelectric point: 9.1

Predicted Molecular Mass: 20.7kDa

Accurate Molecular Mass: 20&25kDa 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]

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CDLPQTH NLRNKRALTL LVQMRRLSPL  
SCLKDRKDFG FPQEKVDAQQ IKKAQAIPVL SELTQQILNI FTSKDSSAAW  
NTLLDSEFCN DLHQQLNDLQ GCLMQQVGVQ EFPLTQEDAL LAVRKYFHRI  
TVYLREKKHS PCAWEVVRAE VWRALSSAN VLGRLREEK
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[ACTIVITY]

Interferon Alpha (IFN α , encoded by IFNA gene family) is a type I interferon with potent antiviral, antiproliferative, and immunomodulatory activities. It is primarily secreted by plasmacytoid dendritic cells, lymphocytes, and other host cells in response to viral infection, double-stranded RNA, and various pathogen-associated molecular patterns. Upon binding to its cell surface receptor complex IFNAR1/IFNAR2, IFN α initiates intracellular signaling cascades that induce the expression of hundreds of interferon-stimulated genes (ISGs), which inhibit viral replication, modulate immune cell function, and suppress tumor cell growth. Clinically, recombinant IFN α is widely used in the treatment of viral hepatitis, certain hematological malignancies, and some solid tumors. Dysregulation of IFN α signaling is linked to autoimmune diseases and chronic inflammatory disorders. IFN α binding triggers receptor dimerization and recruits TYK2, which mediates downstream JAK-STAT phosphorylation and

signaling activation. Thus a functional ELISA assay was conducted to detect the interaction of recombinant mouse IFN α and recombinant human TYK2. Briefly, IFN α was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μ L were then transferred to TYK2-coated microtiter wells and incubated for 1h at 37 $^{\circ}$ C. Wells were washed with PBST and incubated for 1h with anti-IFN α pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37 $^{\circ}$ C, wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37 $^{\circ}$ C. Finally, add 50 μ L stop solution to the wells and read at 450/630nm immediately. The binding activity of recombinant mouse IFN α and recombinant human TYK2 was shown in Figure 1, the EC₅₀ for this effect is 0.473 μ g/mL.

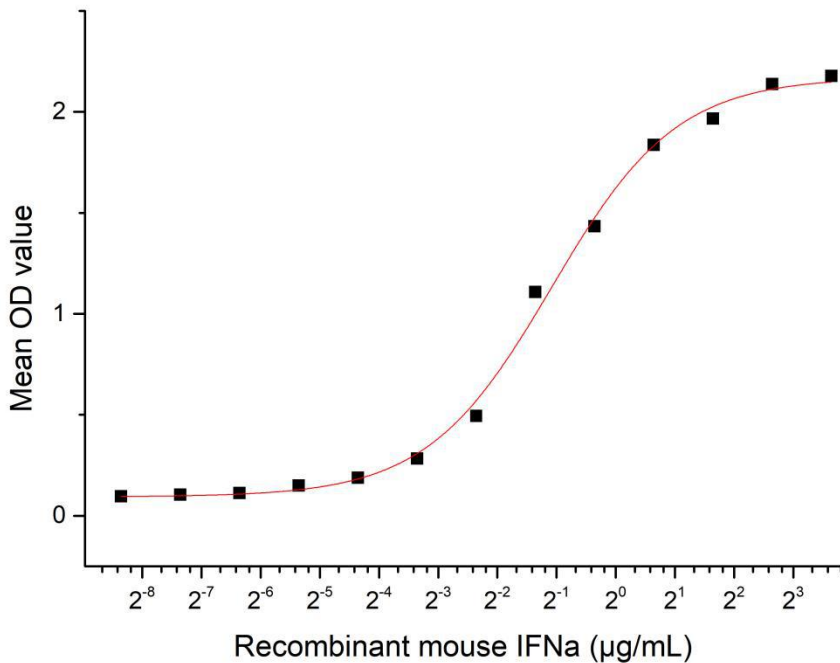


Figure 1. The binding activity of recombinant mouse IFN α and human TYK2

[IDENTIFICATION]

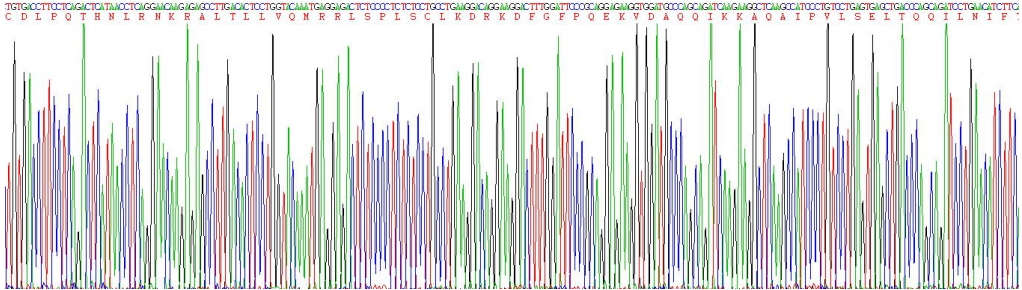


Figure 2. Gene Sequencing (extract)

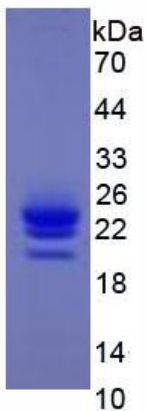


Figure 3. SDS-PAGE

Sample: Active recombinant IFN α , Mouse

[IMPORTANT NOTE]

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