

APA033Ca61 100µg

Active Interferon Alpha (IFNa)

Organism Species: *Canis familiaris*; Canine (Dog)

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: Ala23~Lys187

Tags: N-terminal His-tag

Purity: >90%

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: 6.4

Predicted Molecular Mass: 20.6kDa

Accurate Molecular Mass: 30kDa 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]

ACHLPDTHGLRNWRVLTLLGQMRRLSAGSCDHYTNDFAFPKELFDGQRLQEAQALSVVHVMTQKVFHLF
CPDTSSAPWNMTLLEELCSGLSEQLDDLEACPLQEAGLAETPLMHEDSTLRTYFQRISLYLQDRNHSPC
AWEMVRAEIGRSFFSSTILQERIRRRK

[ACTIVITY]

Interferon Alpha (IFNa) is a cytokine belonging to the type I interferon family, primarily produced by plasmacytoid dendritic cells and other immune cells in response to viral infections. It functions as a critical mediator of innate immunity by binding to the interferon-alpha receptor (IFNAR) complex, activating the JAK-STAT signaling pathway. This induction leads to the expression of interferon-stimulated genes (ISGs), which establish an antiviral state in cells, inhibit viral replication, and modulate immune responses. IFNa also exhibits antitumor and immunoregulatory properties and is used therapeutically against viral infections and certain cancers. Besides, Interferon Alpha 10 (IFNa10) has been identified as an interactor of IFNa, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant dog IFNa and recombinant human IFNa10. Briefly, biotin-linked IFNa were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate

samples of 100 μ l were then transferred to IFNa10-coated microtiter wells and incubated for 1h at 37 °C . Wells were washed with PBST 3 times and incubation with Streptavidin-HRP for 30min, then wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37 °C . Finally, add 50 μ l stop solution to the wells and read at 450nm immediately. The binding activity of IFNa and IFNa10 was shown in Figure 1, the EC50 for this effect is 0.38 μ g/mL.

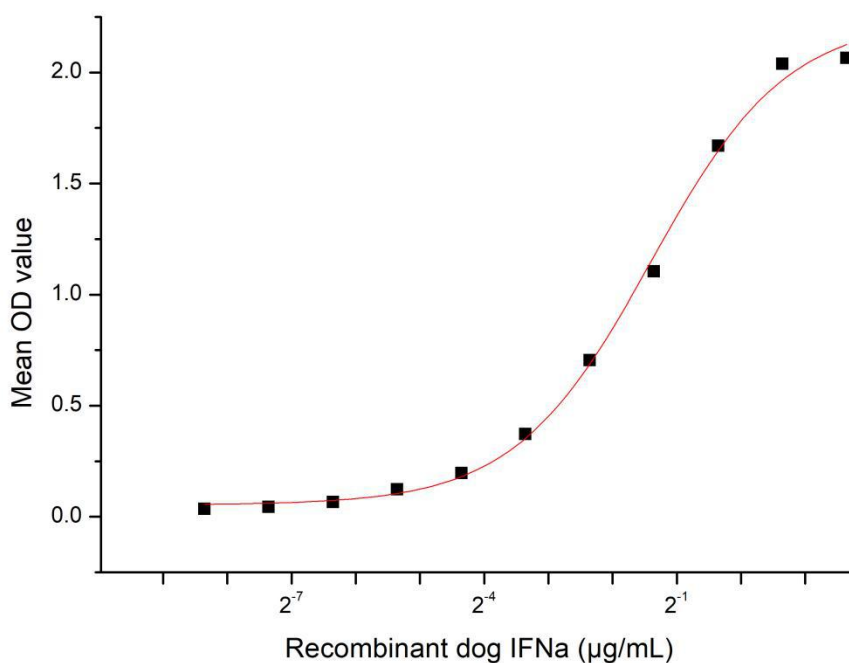


Figure 1. The binding activity of recombinant dog IFNa and recombinant human IFNa10

[IDENTIFICATION]

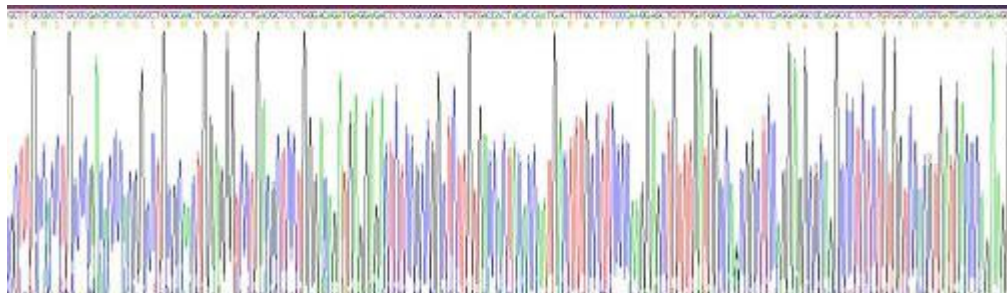


Figure 2. Gene Sequencing (extract)



Figure 3. SDS-PAGE

Sample: Active recombinant IFNa, Dog

[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.