

APA021Ra61 100µg

Active Ciliary Neurotrophic Factor (CNTF)

Organism Species: *Rattus norvegicus* (Rat)

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: Ala2~Met200

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: 6.0

Predicted Molecular Mass: 24.3kDa

Accurate Molecular Mass: 25kDa as determined by SDS-PAGE reducing conditions.

[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]

AFAEQTPLTLHRRDLCSRSIWLARKIRSDLTALMESYVKHQGLNKNINLDSVDGVPVASTDRWSE
MTEAERLQENLQAYRTFQGMLTKLLEDQRVHFTPTGDFHQAIHTLMLQVSAFAYQLEELMVL
LEQKIPENEADGMPATVGDGGLFEKKLWGLKVLQELSQWTVRSIHDLRVISSHQMGISALESHY
GAKDKQM

[ACTIVITY]

Ciliary Neurotrophic Factor (CNTF) is a 22 kDa cytokine initially identified for its role in supporting parasympathetic neuron survival. It signals through a tripartite receptor complex to activate JAK-STAT pathways, particularly STAT3. Primarily expressed in Schwann cells and astrocytes, CNTF promotes neuronal survival, differentiation, and regeneration in both CNS and PNS. It demonstrates neuroprotective effects in models of ALS, Huntington's disease, and retinal degeneration. Unlike classical cytokines, CNTF lacks a signal peptide and is released after cellular injury. Current research explores its therapeutic potential for neurodegenerative disorders and metabolic regulation. Besides, Erythropoietin (EPO) has been identified as an interactor of CNTF, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant rat CNTF and recombinant human EPO. Briefly, CNTF was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μ l were then transferred to EPO-coated microtiter wells and incubated for 1h at 37 °C. Wells were washed with PBST and incubated for 1h with anti-CNTF pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37 °C, 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 450/630nm immediately. The binding activity of recombinant rat CNTF and recombinant human EPO was shown in Figure 1, and this effect was in a dose dependent manner.

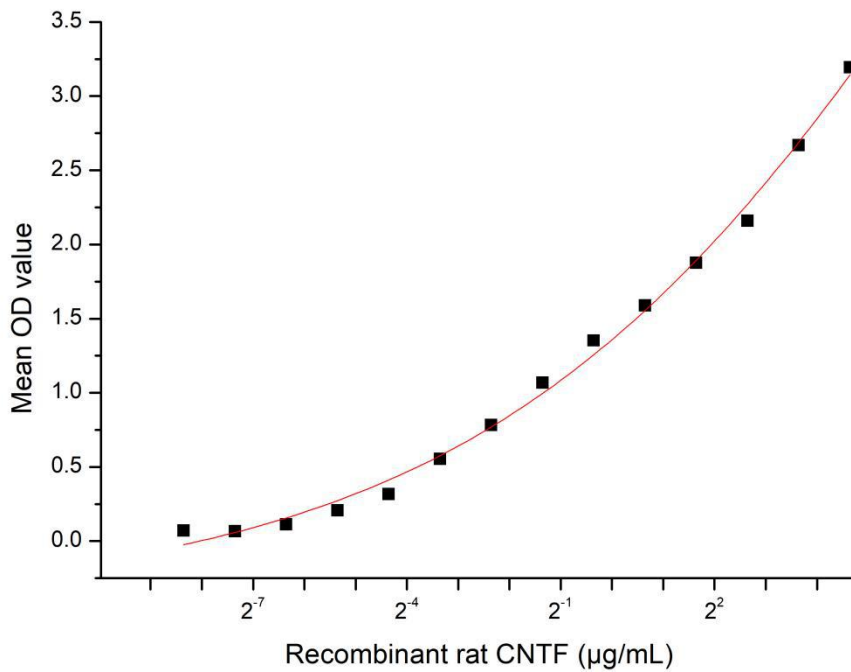


Figure 1. The binding activity of recombinant rat CNTF and recombinant human EPO

[IDENTIFICATION]

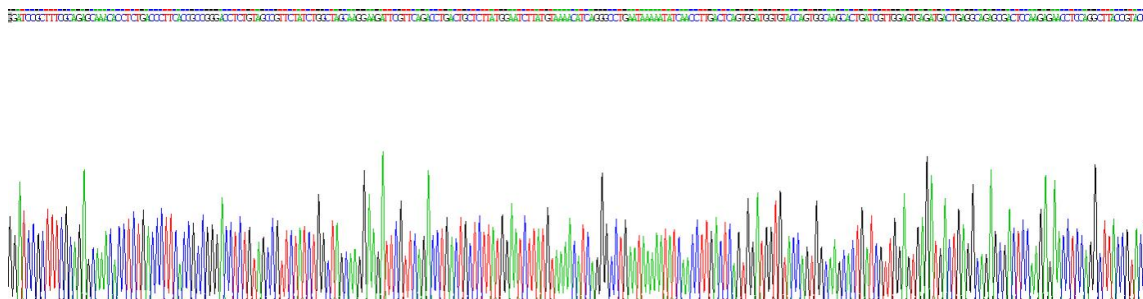


Figure 2. Gene Sequencing (extract)

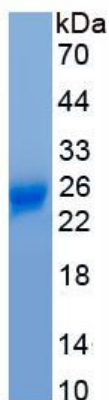


Figure 3. SDS-PAGE

Sample: Active recombinant CNTF, Rat

[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.