

APA044Eq01 100µg

Active Growth Hormone (GH)

Organism Species: *Equus caballus*; Equine (Horse)

Instruction manual

FOR RESEARCH USE ONLY

NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Prokaryotic expression.

Host: *E. coli*

Residues: Phe27~Phe216

Tags: N-terminal His-tag

Purity: >90%

Endotoxin Level: <1.0EU per 1µg (determined by the LAL method).

Buffer Formulation: PBS, pH7.4, containing 0.01% Sarcosyl, 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: 7.4

Predicted Molecular Mass: 25.4kDa

Accurate Molecular Mass: 27kDa 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]

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FPAM PLSSLFANAV LRAQHLHQLA
ADTYKEFERA YIPEGQRYSI QNAQA AFCFS ETIPAPTGKD EAQQRSDMEL
LRFSLLLIQS WLGPVQLLSR VFTNSLVFGT SDRVYEKLRD LEEGIQALMR
ELEDGSPRAG QILKQTYDKF DTNLRSDDAL LKNYGLLSCF KKDHLKAETY
LRVMKCRRFV ESSCAF
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[ACTIVITY]

Growth Hormone (GH), also known as somatotropin, is a peptide hormone synthesized and secreted by the somatotroph cells of the anterior pituitary gland. It plays a pivotal role in growth regulation, metabolism, and cellular repair across multiple tissues. GH exerts its effects both directly and indirectly through the stimulation of insulin-like growth factor 1 (IGF-1) production in the liver. The hormone binds to the growth hormone receptor (GHR), a member of the cytokine receptor superfamily, activating the JAK2-STAT signaling pathway to regulate gene expression. GH secretion is pulsatile, primarily controlled by hypothalamic growth hormone-releasing hormone (GHRH) and somatostatin. Beyond its growth-promoting functions, GH influences lipid metabolism, glucose homeostasis, and immune function. Besides, Troponin T Type 3, Fast Skeletal (TNNT3) has been identified as an interactor of GH, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant horse GH and recombinant human TNNT3. Briefly, TNNT3 was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μ l were then transferred to GH-coated microtiter wells and incubated for 1h at 37°C. Wells were washed with PBST and incubated for 1h with anti-TNNT3 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 µL stop solution to the wells and read at 450/630nm immediately. Measured by its binding ability in a functional ELISA. When Recombinant GH is Immobilized at 2 ug/mL(100 uLwell), the concentration of TNNT3 that produces 50% optimal bindingresponse is found to be approximately 0.064µg/mL.

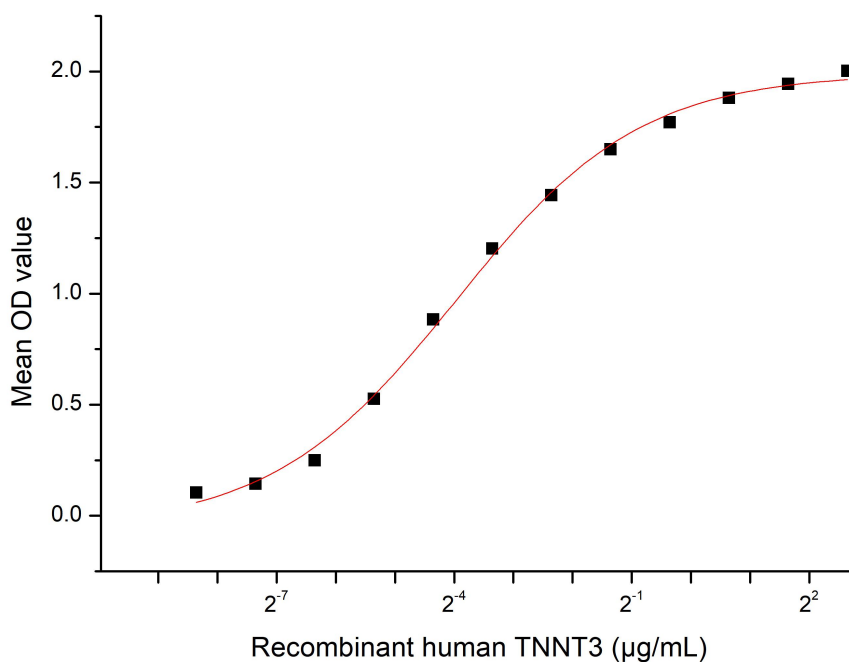


Figure 1. The binding activity of recombinant horse GH and recombinant human TNNT3

gTAGCTGTTGGTgGGATGGGTCTAGGGTCCTCATTCTTCCGCGGGGGATGCTGGggaGAAGCTCCGTCGGTGACCTGGCCCGGAGAGGCCTAACCTTGAGGGCGCGGTGGGGCTCCCCGCTGGCTGGAACTGG

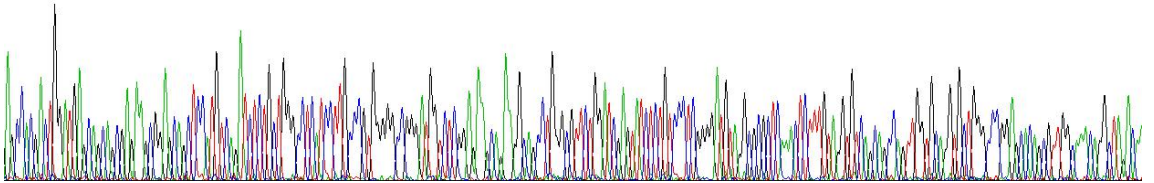


Figure 2. Gene Sequencing (extract)

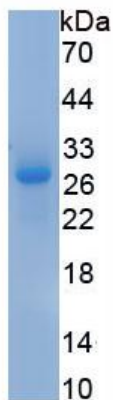


Figure 3. SDS-PAGE

Sample: Active recombinant GH, Horse

[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.