

APB266Hu01 100µg

Active Glucagon (GCG)

Organism Species: *Homo sapiens* (Human)

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: Cys23~Lys180

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: 5.3

Predicted Molecular Mass: 22.1kDa

Accurate Molecular Mass: 22kDa 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]

```
LQDTEES RSFSASQADP LSDPDQMNE  
KRHSQGTFTS DYSKYLDSRR AQDFVQWLMN TKRNRNNIAK RHDEFERHAE  
GTFTSDVSSY LEGQAAKEFI AWLVKGRGRR DFPEEVAIVE ELGRRHADGS  
FSDEMNTILD NLAARDFINW LIQTKITDRK
```

[ACTIVITY]

Glucagon (GCG) is a critical peptide hormone produced by alpha cells in the pancreatic islets. It serves as the primary counter-regulatory hormone to insulin, playing a central role in maintaining glucose homeostasis. During fasting states or low blood sugar (hypoglycemia), glucagon is secreted and binds to its receptor on liver cells. This binding triggers a signaling cascade that stimulates glycogenolysis (the breakdown of glycogen into glucose) and gluconeogenesis (the production of new glucose from non-carbohydrate sources). The resulting release of glucose into the bloodstream provides vital energy to the brain and other organs. Thus, glucagon is essential for preventing dangerously low blood sugar levels. Besides, Taste Receptor Type 1 Member 3 (TAS1R3) has been identified as an interactor of GCG, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant human GCG and recombinant human TAS1R3.

Briefly, biotin-linked TAS1R3 were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100µl were then transferred to GCG-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 50µl stop solution to the wells and read at 450nm immediately. Measured by its binding ability in a functional ELISA. When Recombinant GCG is Immobilized at 2 µg/mL(100 uLwell), the concentration of TAS1R3 that produces 50% optimal bindingresponse is found to be approximately 1.38 µg/mL.

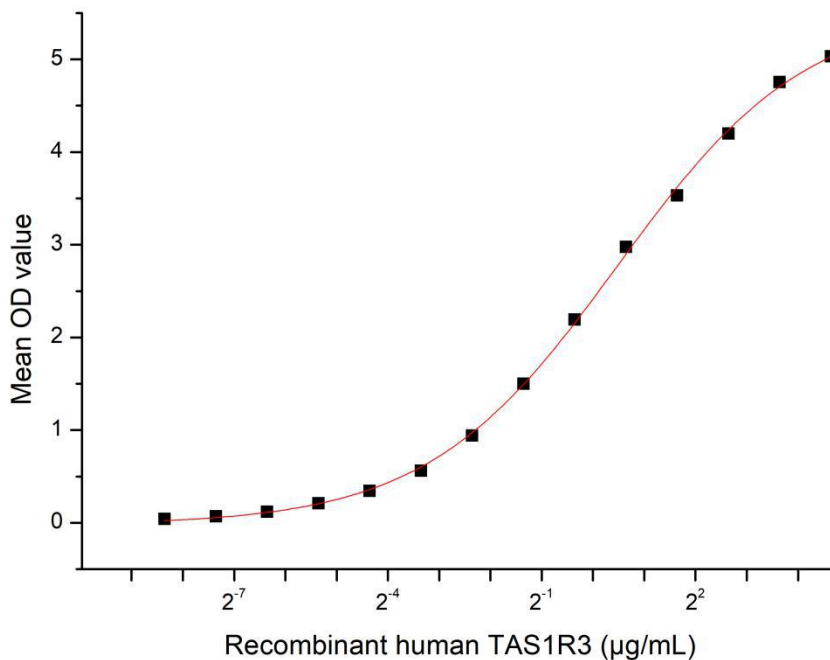


Figure 1. The binding activity of recombinant human GCG and recombinant human TAS1R3

[IDENTIFICATION]

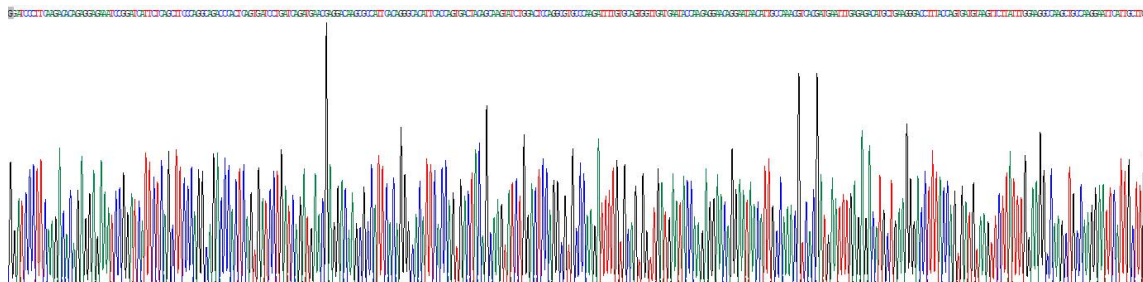


Figure 2. Gene Sequencing (extract)

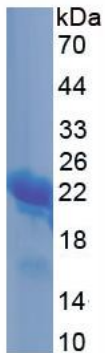


Figure 3. SDS-PAGE

Sample: Active recombinant GCG, Human

[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.