APG291Hu01 100μg
Active Guanylate Cyclase Activator 2A (GUCA2A)
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: Val22~Cys115
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: 4.3
Predicted Molecular Mass: 14.0kDa
Accurate Molecular Mass: 15kDa 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 2-8ºC for one month.
Aliquot and store at -80ºC 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 37ºC 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]

VTVQDGNFSFSLESVKKLKDLQEPQEPRVGKLRNFAPIPGEPVVPILCSNPNFPEELKPLCKEPNAQEI
LQRLEEIAEDPGTCEICAYAACTGC

[ACTIVITY]

Guanylate Cyclase Activator 2A (GUCA2A), also known as guanylin, is a peptide hormone secreted by intestinal epithelial cells. It activates membrane-bound guanylate cyclase-C (GC-C) receptor, stimulating cyclic guanosine monophosphate (cGMP) production. This regulates electrolyte and fluid homeostasis, particularly in the gut, influencing chloride secretion and reducing water absorption, which impacts stool consistency. GUCA2A is critical in defending against enteric pathogens and maintaining intestinal barrier integrity. Dysregulation links to diarrheal diseases, constipation, or colorectal cancer. Its expression is modulated by microbial metabolites, dietary factors, and inflammatory signals.Besides,Natriuretic Peptide Receptor 3 (NPR3) has been identified as an interactor of GUCA2A, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant human GUCA2A and recombinant rat NPR3. Briefly, GUCA2A was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 µl were then transferred to NPR3-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-GUCA2A pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody for 1h at 37℃, wells were aspirated and washed 5 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37℃. Finally, add 50 µL stop solution to the wells and

read at 450/630nm immediately. The binding activity of recombinant human GUCA2A and recombinant rat NPR3 was shown in Figure 1, the EC50 for this effect is 0.092ug/mL.

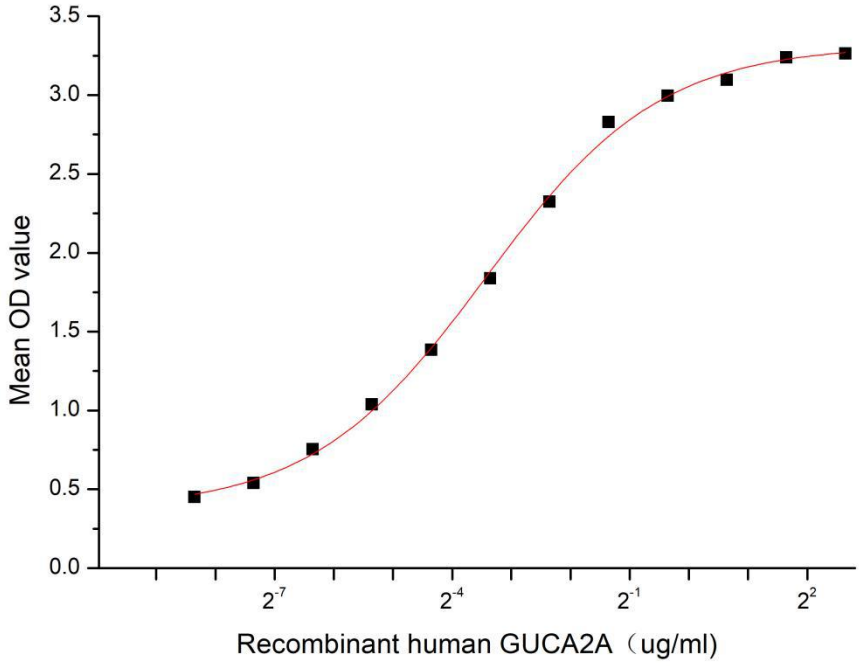

Figure 1. The binding activity of recombinant human GUCA2A and recombinant rat NPR3

[IDENTIFICATION]

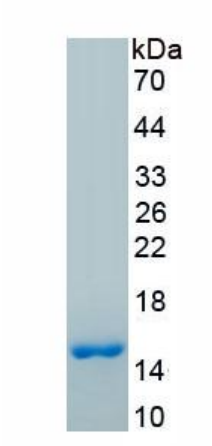

Figure 2. SDS-PAGE

Sample: Active recombinant GUCA2A, 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.