

APE778Hu01 1mg
Active Immunoglobulin A1 (IgA1)
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: Ala1~Tyr353

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: 6.5

Predicted Molecular Mass: 41.4kDa

Accurate Molecular Mass: 44kDa 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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ASPTSPKVFP LSLCSTQPDG NVVIACLQVG FFPQEPLSVT WSESGQGVT  
RNFPPSQDAS GDLYTTSSQL TLPATQCLAG KSVTCHVKHY TNPSQDVTVP  
CPVPSTPPTP SPSTPPTPSP SCCHPRLSLH RPALEDLLLG SEANLTCTLT  
GLRDASGVTF TWTPSSGKSA VQPPERDLC GCYSVSSVLP GCAEPWNHGK  
TFTCTAAYPE SKTPLTATLS KSGNTRPEV HLLPPPSEEL ALNELVLTLC  
LARGFSPKDV LVRWLQGSQE LPREKYLTWA SRQEPSQGT TFAVTSILRV  
AAEDWKKGDT FSCMGHEAL PLAFTQKTID RLAGKPTHVN VSVVMAEVDG  
TCY
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[ACTIVITY]

Immunoglobulin A1 (IgA1) is the predominant immunoglobulin subclass found in the human mucosal immune system, particularly in secretions of the respiratory and gastrointestinal tracts. It features a unique hinge region rich in proline and O-linked glycans, which distinguishes it from IgA2. As a key first line of defense, IgA1 neutralizes pathogens and toxins, preventing their attachment to epithelial surfaces. Its primary role is to provide immune protection at mucosal barriers without provoking significant inflammation. Crucially, polymeric IgA1 binds to the Polymeric Immunoglobulin Receptor (PIGR) on the basolateral surface of epithelial cells, initiating transcytosis for its transport across the mucosa into secretions. To detect the activity of recombinant IgA1, a functional ELISA assay was performed to evaluate the interaction between recombinant human IgA1 and recombinant bovine PIGR. Briefly, IgA1 was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μ l were then transferred to PIGR-coated microtiter wells and incubated for 1h at 37 °C. Wells were washed with PBST and incubated for 1h with anti-IgA1 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. The binding activity of recombinant human IgA1 and recombinant bovine PIGR was shown in Figure 1, the EC50 for this effect is 0.11µg/mL.

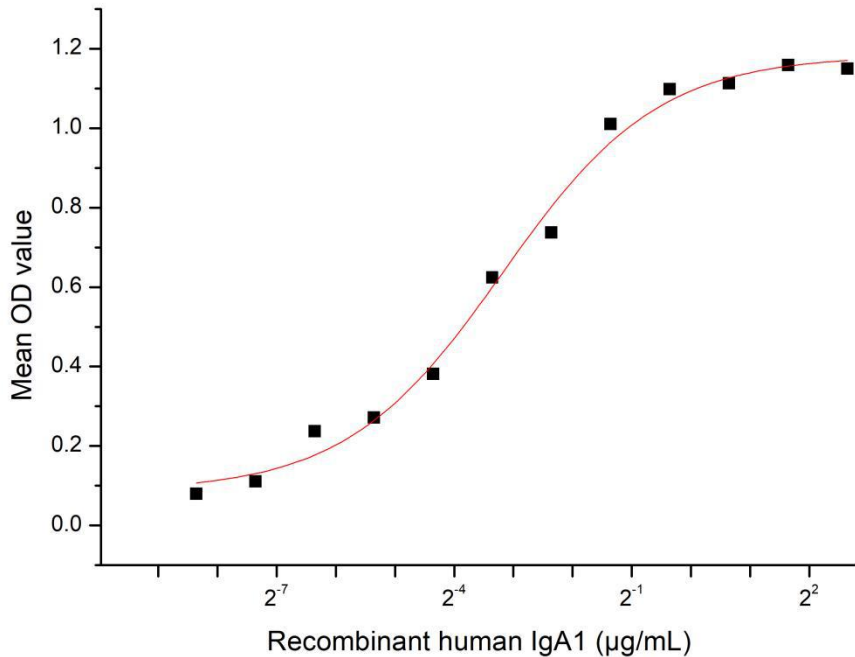


Figure 1. The binding activity of recombinant human IgA1 and recombinant bovine PIGR

[IDENTIFICATION]

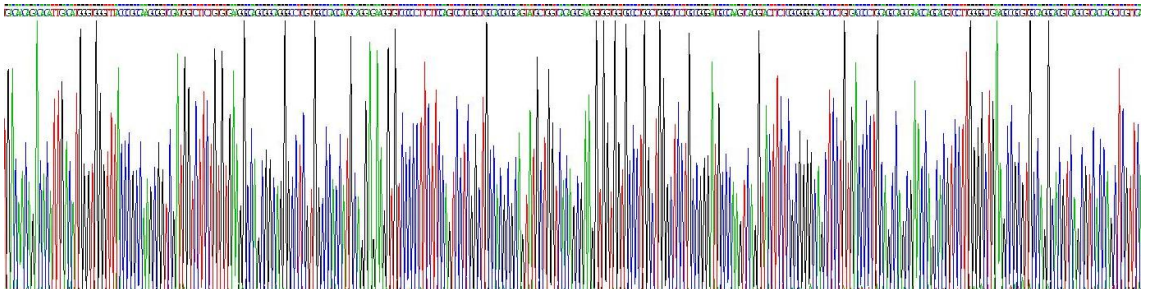


Figure 2. Gene Sequencing (extract)

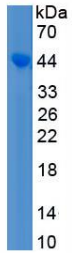


Figure 3. SDS-PAGE

Sample: Active recombinant IgA1, 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.