

APF645Hu01 100µg

Active Phosphodiesterase 5A, cGMP Specific (PDE5A)

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: Glu536~Gln860

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: 6.9

Predicted Molecular Mass: 41.3kDa

Accurate Molecular Mass: 42kDa 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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ETREL QSLAAAVVPS
AQLTKITDFS FPDFELSDLE TALCTIRMFT DLNLVQNFQM KHEVLCRWIL
SVKKNYRKNV AYHNWRHAFN TAQCMFAALK AGKIQNKLTD LEILALLIAA
LSHDLDRHGV NNSYIQRSEH PLAQLYCHSI MEHHHFDQCL MILNSPGNQI
LSGLSIEEYK TTLKIIKQAI LATDLALYIK RRGEFFELIR KNQFNLEDPH
QKELFLAMLM TACDLSAITK PWPIQQRIAE LVATEFFDQG DRERKELNIE
PTDLMNREKK NKIPSMQVGF IDAICLQLYE ALTHVSEDCF PLLDGCRKNR
QKWQALAEQQ
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[ACTIVITY]

Phosphodiesterase 5A, cGMP Specific (PDE5A) is a key enzyme that regulates cellular signaling by hydrolyzing cyclic guanosine monophosphate (cGMP), a second messenger involved in smooth muscle relaxation and vasodilation. It is best known as the therapeutic target for sildenafil (Viagra) in treating erectile dysfunction and pulmonary arterial hypertension, where its inhibition increases cGMP levels to enhance blood flow. Research also explores its roles in cardiac function and cancer. Meanwhile, PDE5A can form a functional complex with ALDH7A1, an aldehyde dehydrogenase, potentially linking cGMP signaling to cellular metabolism and stress response pathways. Thus a functional ELISA assay was conducted to detect the interaction of recombinant PDE5A and recombinant ALDH7A1. Briefly, PDE5A was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μ l were then transferred to ALDH7A1-coated microtiter wells and incubated for 1h at 37°C. Wells were washed with PBST and incubated for 1h with anti-PDE5A 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 PDE5A and recombinant ALDH7A1 was shown in Figure 1, the EC₅₀ for this effect is 0.005µg/mL.

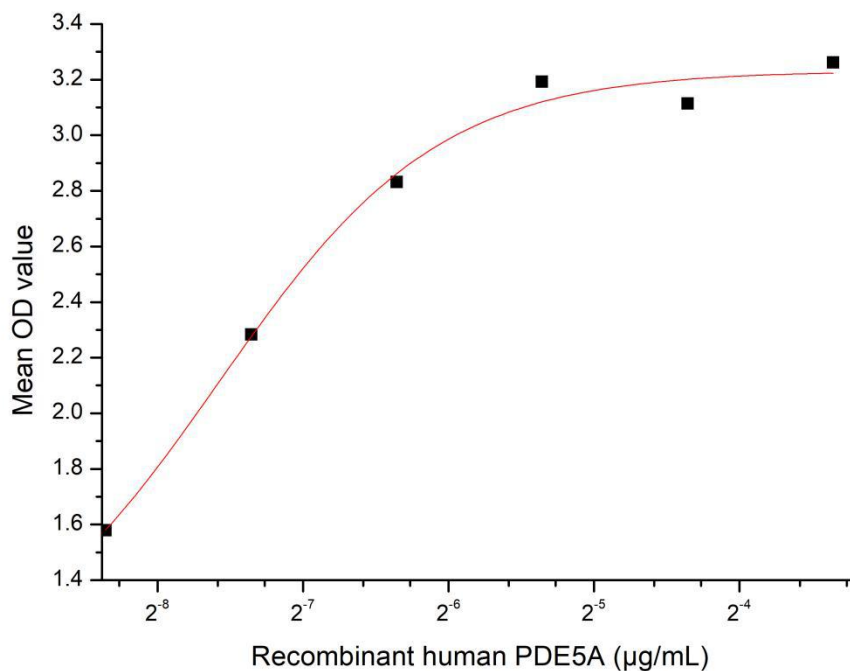


Figure 1. The binding activity of recombinant PDE5A and ALDH7A1

[IDENTIFICATION]

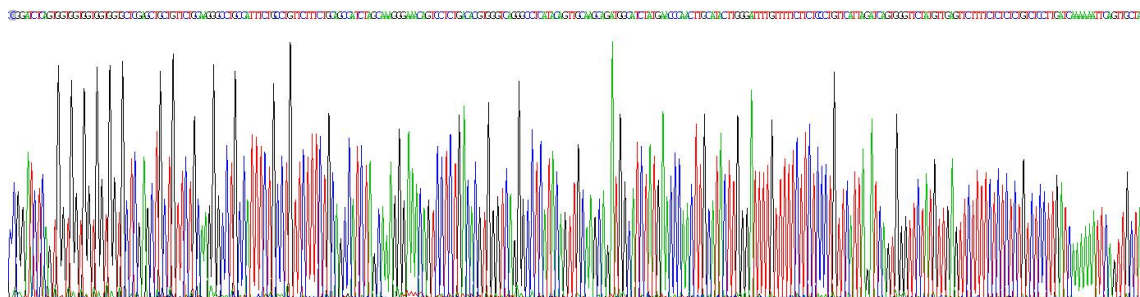


Figure 2. Gene Sequencing (extract)

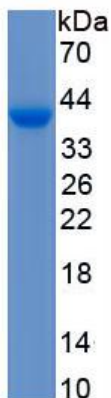


Figure 3. SDS-PAGE

Sample: Active recombinant PDE5A, 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.