

APF635Hu01 100µg

Active Phosphodiesterase 1A, Calmodulin Dependent (PDE1A)

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: Gly2~Asp318

Tags: N-terminal His-tag

Purity: >95%

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: 5.9

Predicted Molecular Mass: 40.4kDa

Accurate Molecular Mass: 40kDa 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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GSSATEIEE LENTTFKYLT GEQTEKMWQR LKGILRCLVK QLERGDVNVV
DLKKNIEYAA SVLEAVYIDE TRRLDTEDE LSDIQTDSVP SEVRDWLAST
FTRKMGMTKK KPEEKPKFRS IVHAVQAGIF VERMYRKTYH MVGLAYPAAV
IVTLKDVDKW SFDVFALNEA SGEHSLKFMI YELFTRYDLI NRFKIPVSCL
ITFAEAELEVG YSKYKNPYHN LIHAADVTQT VHYIMLHTGI MHWLTELEIL
AMVFAAAIHD YEHTGTTNNF HIQTRSDVAI LYNDRSVLEN HHVSAAYRLM
QEEEMNILIN LSKDDWRD
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[ACTIVITY]

Phosphodiesterase 1A (PDE1A) is a calcium/calmodulin-dependent enzyme belonging to the PDE1 family, which hydrolyzes cyclic nucleotides (cAMP and cGMP) to regulate intracellular signaling. It plays a critical role in diverse physiological processes, including smooth muscle contraction, neuronal signaling, and cardiovascular function. PDE1A activity is tightly regulated by calcium influx, as calmodulin binding enhances its catalytic efficiency. Dysregulation of PDE1A has been implicated in diseases such as hypertension, neurodegeneration, and cancer. Due to its role in modulating cyclic nucleotide levels, PDE1A is a potential therapeutic target for cardiovascular and neurological disorders.

Besides, G Protein Beta 3 (GNb3) has been identified as an interactor of PDE1A, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant human PDE1A and recombinant human GNb3. Briefly, PDE1A was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μ l were then transferred to GNb3-coated microtiter wells and incubated for 1h at 37 °C. Wells were washed with PBST and incubated for 1h with anti-PDE1A 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 μ L stop solution to the wells and read at 450/630nm immediately. The binding activity of recombinant rat PDE1A and recombinant human GNB3 was shown in Figure 1, the EC50 for this effect is 0.027 μ g/mL.

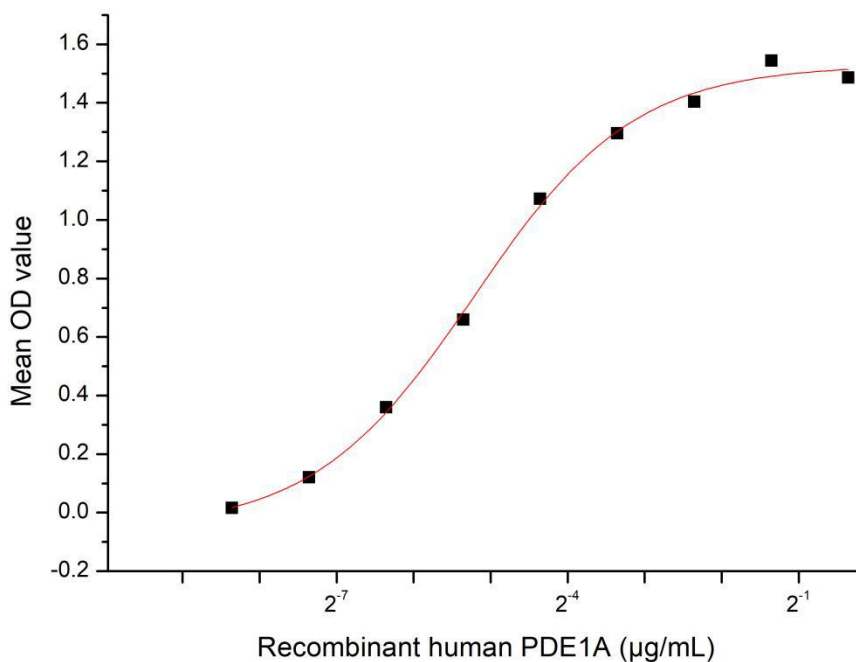


Figure 1. The binding activity of recombinant human PDE1A and human GNB3

[IDENTIFICATION]

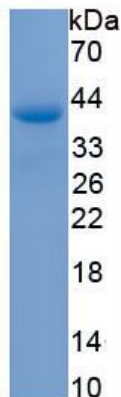


Figure 2. SDS-PAGE

Sample: Active recombinant PDE1A, 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.