APD225Ra01 100μg
Active Lipase A, Lysosomal Acid (LIPA)
Organism Species:Rattus norvegicus (Rat)
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: Asn32~Ile358
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: 7.3
Predicted Molecular Mass: 41.1kDa
Accurate Molecular Mass: 41kDa 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]

NMNVTEIIM HWGYPEHSVQ
TGDGYILGVH RIPHGRKNQF DKGPKPVVYL QWRHGFLADS SNWVTNIDNN
SLGFILADAG FDVWMGNSRG NTWSRKHKTL SVSQDEYWAF SFDEMAKYDL
PASINYILNK TGQEQLYNVG HSQGCTIGFI AFSQMPELAK KVKMFFALAP
VLSLNFASGP MVKLGRLPDL LLEDLFGQKQ FLPQSAMVKW LSTHICTHVI
MKELCANIFF LICGFNEKNL NMSRVDVYTT HCPAGTSVQN MVHWTQVVKY
HKLQAFDWGS SDKNYFHYNQ SYPPLYSIKD MQLPTALWSG GKDWLADTSD
INILLTEI

[ACTIVITY]

Lysosomal Acid Lipase (LIPA) is a crucial enzyme within the lysosomes that hydrolyzes cholesteryl esters and triglycerides into free cholesterol and free fatty acids. This process is vital for cellular lipid metabolism and energy homeostasis. Deficiencies in LIPA activity lead to severe lipid storage disorders, such as Wolman disease and Cholesteryl Ester Storage Disease (CESD), characterized by the massive accumulation of lipids in the liver, spleen, and other organs. Regarding its interaction, LIPA does not directly bind to Apolipoprotein B (APOB); instead, it interacts with and degrades the lipid core of Low-Density Lipoprotein (LDL) particles, of which APOB is the primary structural protein component.Besides,APOB has been identified as an interactor of LIPA, thus a functional binding ELISA assay was conducted to detect the interaction of recombinant rat LIPA and recombinant pig APOB. Briefly, LIPA was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μl were then transferred to APOB-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-LIPA 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 rat LIPA and recombinant pig APOB was shown in Figure 1, the EC50 for this effect is 1.06326μg/mL.

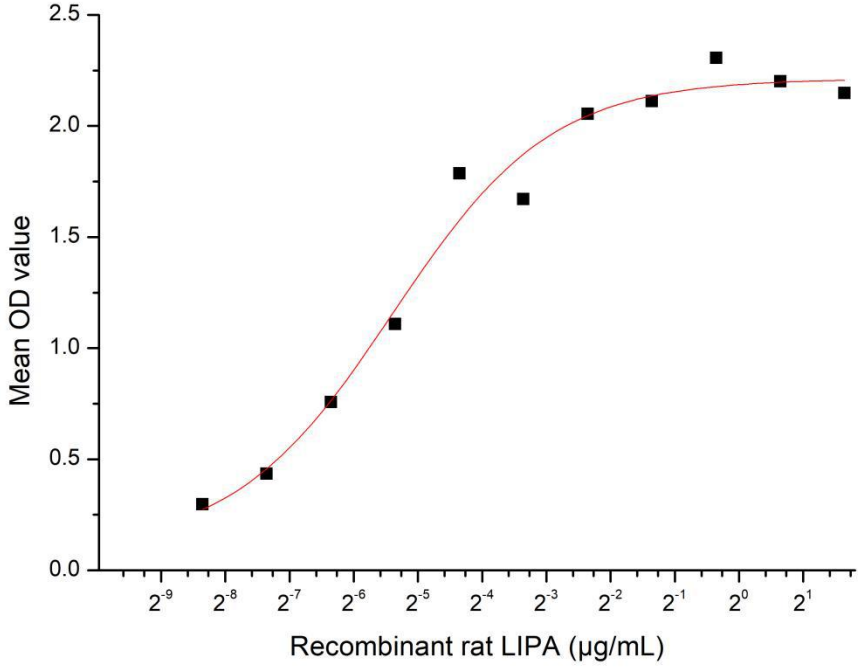


Figure 1. The binding activity of recombinant LIPA and human APOB

[IDENTIFICATION]

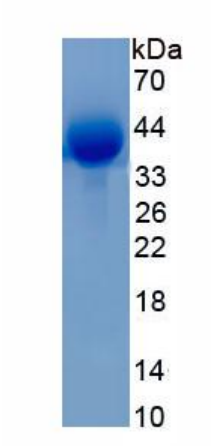


Figure 2. SDS-PAGE

Sample: Active recombinant LIPA, Rat

[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.