APA751Ra01 100μg
Active Programmed Cell Death Protein 1 (PD1)
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: Pro39~Ser266
Tags: N-terminal His and GST Tag
Purity: >90%
Endotoxin Level: <1.0EU per 1μg (determined by the LAL method).
Buffer Formulation: PBS, pH7.4, containing 0.01% SKL, 5%Trehalose .
Original Concentration: 200μg/mL
Applications: Cell culture; Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
Predicted isoelectric point: 6.0
Predicted Molecular Mass: 55.0kDa
Accurate Molecular Mass: 55kDa 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]

PT WLTVSEGANA TFTCSFSNWS
EDLKLNWYRL SPSNQTEKQA AFCNGYSQPV RDARFQIVQL PNGHDFHMNI LDARRNDSGI
YLCGAISLPP KAQIKESPGA ELVVTERILE TPTRYPRPSP KPEGQFQGLV IVIMSVLVGI
PVLLLLAWAL AAFCSTGMSE AREAGRKEDP PKEAHAAAPV PSVAYEELDF QGREKTPEPA
PCVHTEYATI VFTEGLDASA IGRRGS

[ACTIVITY]

PD-1 (Programmed Death-1 receptor), also known as CD279, is a receptor expressed on T cells responsible for modulating T cell activation. Like CTLA-4, PD-1 is classified as an immune checkpoint inhibitory receptor. When PD-1 protein binds to PD-L1, it initiates a negative signaling cascade inhibiting activation of T cells. The cytoplasmic tail contains two tyrosine residues that form the immuno receptor tyrosine-based inhibitory motif (ITIM) and immuno receptor tyrosine-based switch motif (ITSM) that are important for mediating PD-1 signaling. Normally, PD-1 helps keep T cells from attacking other cells in the body. However, many cancers take advantage of this by expressing high amounts of PD-L1 allowing cancer cells to evade the body's own immune response. Blocking the PD-1:PD-L1 interaction has proven successful in treating many different cancer types. A functional binding ELISA assay was conducted to detect the interaction of recombinant rat PD1 and recombinant human CTLA4. Briefly, PD1 was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μl were then transferred to CTLA4-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-PD1 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 450/630 nm immediately. The binding activity of recombinant rat PD1 and recombinant human CTLA4 was shown in Figure 1, the EC50 for this effect is 0.04 ug/mL.

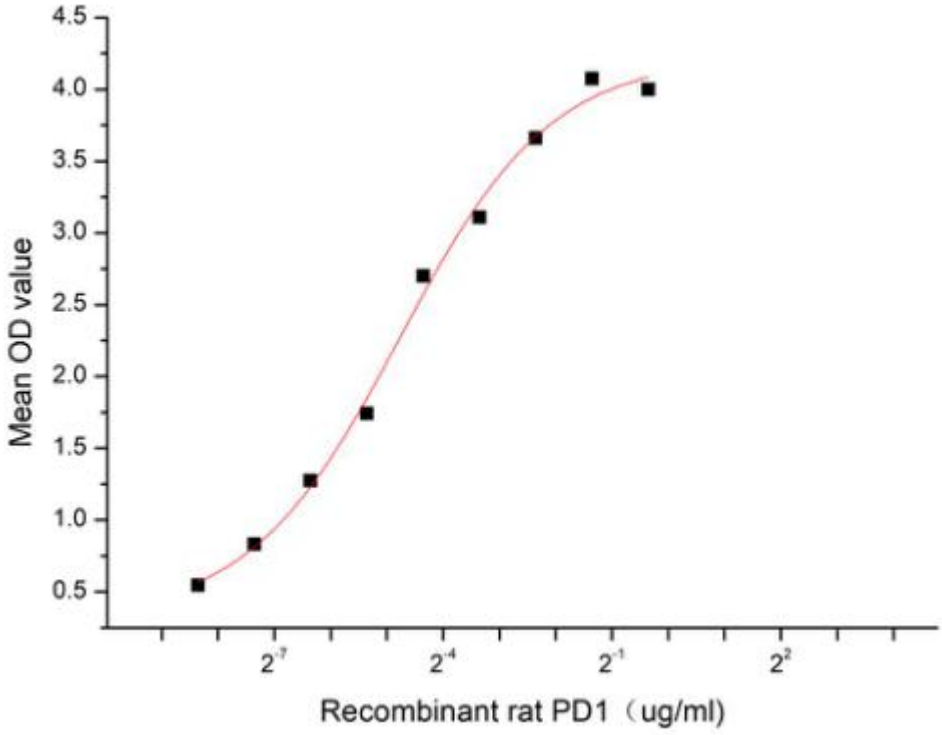

Figure 1. The binding activity of recombinant rat PD1 and recombinant human CTLA4

[IDENTIFICATION]

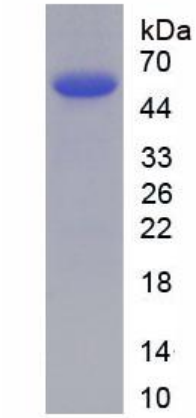

Figure 2. SDS-PAGE

Sample: Active recombinant PD1, 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.