APA751Fe61 100μg
Active Programmed Cell Death Protein 1 (PD1)
Organism Species: *Felis catus; Feline (Cat)*
Instruction manual

FOR RESEARCH USE ONLY
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

13th Edition (Revised in Aug, 2023)

[PROPERTIES]

Source: Eukaryotic expression.
Host: 293F cell
Residues: Pro31~Thr143
Tags: N-terminal His-tag
Purity: >90%
Endotoxin Level: <1.0EU per 1μg (determined by the LAL method).
Buffer Formulation: PBS, pH7.4, containing 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: 5.6
Predicted Molecular Mass: 14.4kDa
Accurate Molecular Mass: 22-30kDa as determined by SDS-PAGE reducing conditions.
Phenomenon explanation:
The possible reasons that the actual band size differs from the predicted are as follows:
1. Splice variants: Alternative splicing may create different sized proteins from the same gene.
2. Relative charge: The composition of amino acids may affects the charge of the protein.
3. Post-translational modification: Phosphorylation, glycosylation, methylation etc.
4. Post-translation cleavage: Many proteins are synthesized as pro-proteins, and then cleaved to give the active form.
5. Polymerization of the target protein: Dimerization, multimerization etc.

[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]

PWSPLTFSPAQLTVLEGENATFVCHLPDVPESFVLNWYRVSPRNQTDKLAAFQENHTEPGKDRRFRVTRLPSGQDFHTTILA
AQLNDSGIYLCGAIYLPPNTQIYESPRAELT

[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 immunoreceptor tyrosine-based inhibitory motif (ITIM) and immunoreceptor 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 cat PDCD1 and recombinant rat PDCD1LG2. Briefly, biotin-linked PDCD1 were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100 μl were then transferred to PDCD1LG2-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST 3 times and incubation with Streptavidin-HRP for 30min, then 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 nm immediately. The binding activity of PDCD1 and PDCD1LG2 was shown in Figure 1, and this effect was in a dose dependent manner.

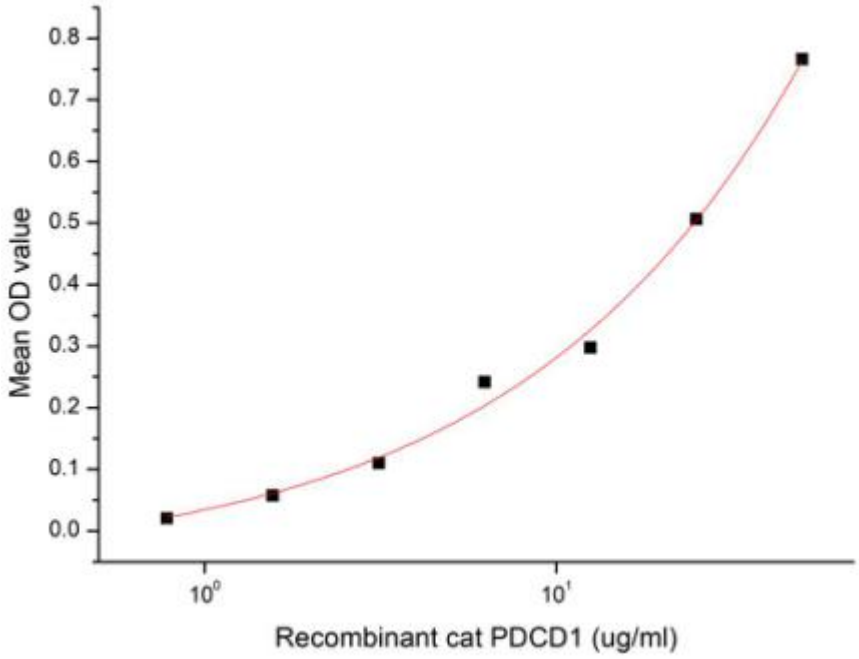

Figure 1. The binding activity of recombinant cat PDCD1 and recombinant rat PDCD1LG2

[IDENTIFICATION]

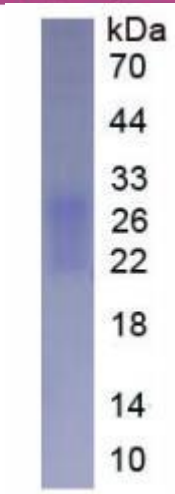

Figure 2. SDS-PAGE

Sample: Active recombinant PD1, Cat

[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.