APB058Hu01 100μg
Active Caspase Activated DNase (CAD)
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: Arg87~Lys323
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: 8.4
Predicted Molecular Mass: 31.1kDa
Accurate Molecular Mass: 29kDa 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]

RFLS AFHEPQVGLI
QAAQQLLCDE QAPQRQRLLA DLLHNVSQNI AAETRAEDPP WFEGLESRFQ
SKSGYLRYSC ESRIRSYLRE VSSYPSTVGA EAQEEFLRVL GSMCQRLRSM
QYNGSYFDRG AKGGSRLCTP EGWFSCQGPF DMDSCLSRHS INPYSNRESR
ILFSTWNLDH IIEKKRTIIP TLVEAIKEQD GREVDWEYFY GLLFTSENLK
LVHIVCHKKT THKLNCDPSR IYK

[ACTIVITY]

Caspase Activated DNase (CAD), corresponding to product code RPB058Hu01, is a key nuclease in eukaryotic apoptosis. Normally, it exists in an inactive state in the cytoplasm, bound to its inhibitor. Upon apoptotic signal activation, effector caspases (e.g., Caspase-3) cleave the inhibitor, releasing active CAD. The activated enzyme translocates to the nucleus, where it cleaves chromosomal DNA into nucleosome-sized fragments, a hallmark of apoptotic cell death. Its strict regulation prevents unintended DNA damage, ensuring genomic stability in healthy cells. CAD interacts with DFFa (product code L426Hu) as its specific inhibitor; DFFa binds CAD to inhibit its nuclease activity in non-apoptotic cells.Thus a functional ELISA assay was conducted to detect the interaction of recombinant human CAD and recombinant human DFFa. Briefly, CAD was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μl were then transferred to DFFa-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-CAD 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 human CAD and recombinant human DFFa was shown in Figure 1, the EC50 for this effect is 0.01067μg/mL.

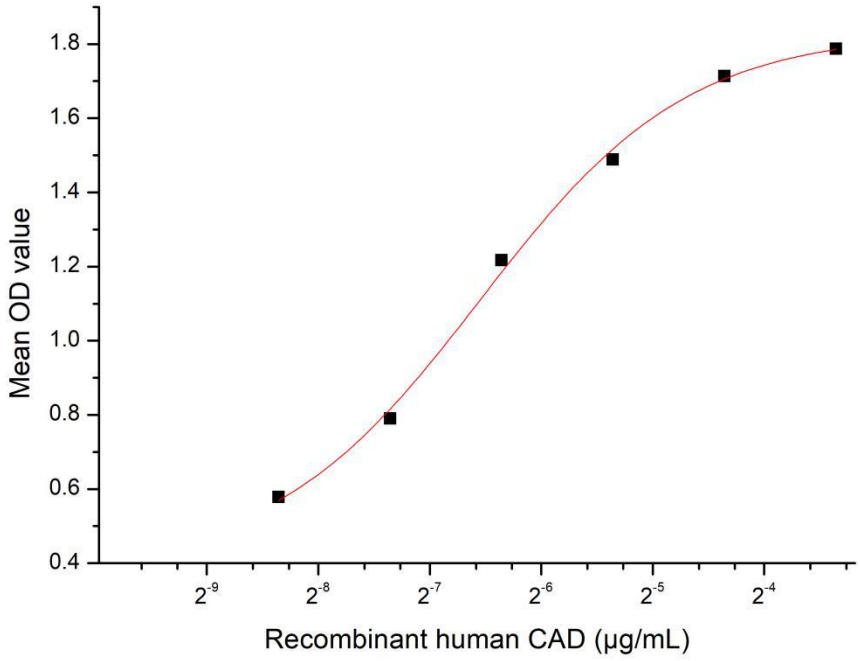

Figure 1. The binding activity of recombinant human CAD and human DFFa

[IDENTIFICATION]

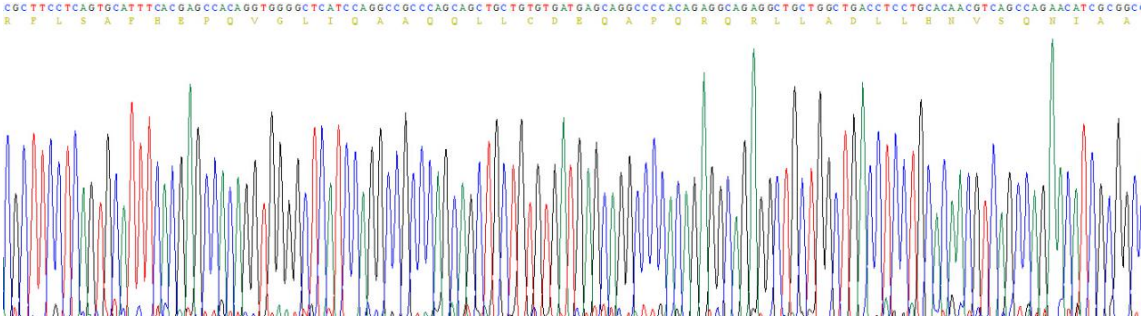

Figure 2. Gene Sequencing (extract)

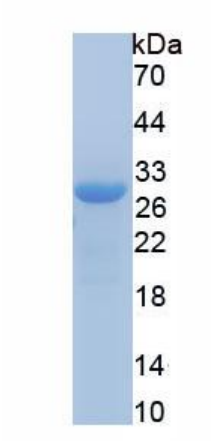

Figure 3. SDS-PAGE

Sample: Active recombinant CAD, 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.