APB082Hu01 100μg
Active Heat Shock 70kDa Protein 9 (HSPA9)
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: Ser65~Ala311
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: 7.9
Predicted Molecular Mass: 30.7kDa
Accurate Molecular Mass: 31kDa 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]

SCVAVM EGKQAKVLEN AEGARTTPSV VAFTADGERL VGMPAKRQAV TNPNNTFYAT KRLIGRRYDD PEVQKDIKNV PFKIVRASNG DAWVEAHGKL YSPSQIGAFV LMKMKETAEN YLGHTAKNAV ITVPAYFNDS QRQATKDAGQ ISGLNVLRVI NEPTAAALAY GLDKSEDKVI AVYDLGGGTF DISILEIQKG VFEVKSTNGD TFLGGEDFDQ ALLRHIVKEF KRETGVDLTK DNMALQRVRE A

[ACTIVITY]

Heat Shock 70kDa Protein 9 (HSPA9), also termed mortalin, belongs to the conserved Hsp70 chaperone family and predominantly localizes in mitochondria. It mediates mitochondrial protein import, facilitates proper folding of newly synthesized polypeptides, and eliminates misfolded or aggregated proteins to maintain mitochondrial proteostasis. Beyond chaperone functions, HSPA9 participates in regulating cellular metabolism, oxidative stress response, cell proliferation and apoptosis. Dysregulated HSPA9 expression is closely linked to tumour progression, neurodegenerative disorders and mitochondrial dysfunction-related diseases. It stabilizes mitochondrial membrane integrity and balances reactive oxygen species levels, acting as a vital guardian of mitochondrial homeostasis under physiological and stress conditions. HSPA9 directly interacts with ITPR1 to modulate endoplasmic reticulum-mitochondria calcium transfer. Thus a functional ELISA assay was conducted to detect the interaction of recombinant human HSPA9 and recombinant human ITPR1. Briefly, HSPA9 was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μL were then transferred to ITPR1-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-HSPA9

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 HSPA9 and recombinant human ITPR1 was shown in Figure 1, the EC50 for this effect is 1.06326μg/mL.

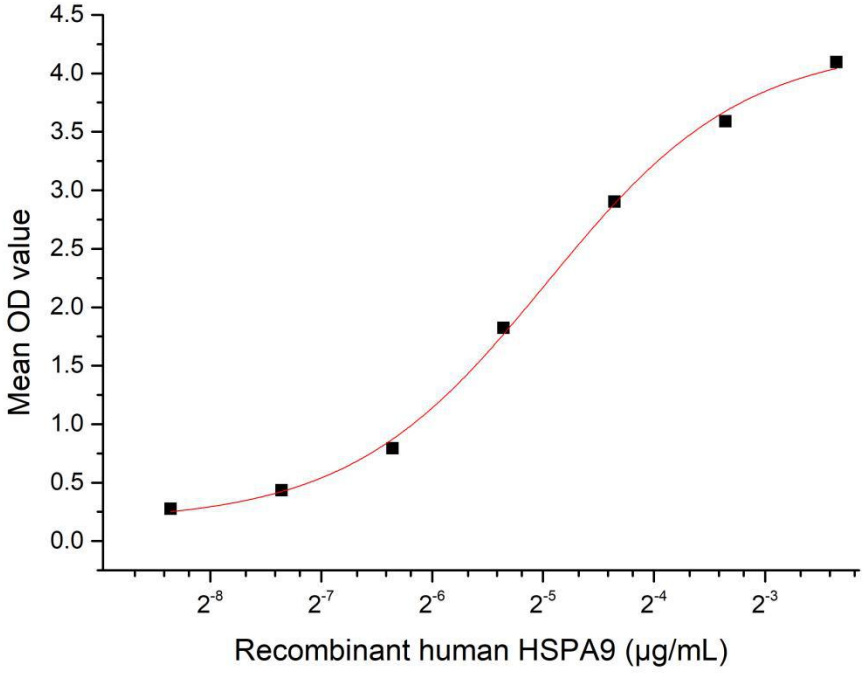

Figure 1. The binding activity of recombinant human HSPA9 and human ITPR1

[IDENTIFICATION]

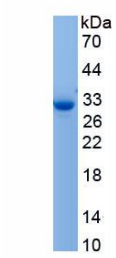

Figure 2. SDS-PAGE

Sample: Active recombinant HSPA9, 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.