APB385Hu01 50μg
Active Activating Transcription Factor 4 (ATF4)
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: Met1~Pro351
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: 250μg/mL
Applications: Activity Assays.
(May be suitable for use in other assays to be determined by the end user.)
Predicted isoelectric point: 4.6
Predicted Molecular Mass: 39.3kDa
Accurate Molecular Mass: 44kDa 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]

MTEMSFLSSEVLVGDLMSPFDQSGLGAEESLGLLDDYLEVAKHFKPHGFSSDKAKAGSSEWLAV
DGLVSPSNNSKEDAFSGTDWMLEKMDLKEFDLDALLGIDDLETMPDDLLTTLDDTCDLFAPLV
QETNKQPPQTVNPIGHLPESLTKPDQVAPFTFLQPLPLSPGVLSSTPDHSFSLELGSEVDITEGDR
KPDYTAYVAMIPQCIKEEDTPSDNDSGICMSPESYLGSPQHSPSTRGSPNRSLPSPGVLCGSARP
KPYDPPGEKMVAAKVKGEKLDKKLKKMEQNKTAATRYRQKKRAEQEALTGECKELEKKNEALKE
RADSLAKEIQYLKDLIEEVRKARGKKRVP

[ACTIVITY]

ATF4-2, a variant of the activating transcription factor 4 (ATF4), belongs to the bZIP family and acts as a key mediator of cellular stress responses. Encoded by the ATF4 gene, it harbors a basic DNA-binding region and a leucine zipper dimerization motif, regulating target gene transcription by binding to cAMP response elements (CREs). It is ubiquitously expressed and central to pathways like amino acid metabolism, oxidative stress adaptation, and endoplasmic reticulum unfolded protein response. Dysregulated ATF4-2 is linked to metabolic disorders, neurodegenerative diseases, and cancers, while its role in viral infections involves hijacking by pathogens. ATF4-2 interacts with HIV1/gag, the viral structural polyprotein, potentially facilitating viral assembly and enhancing HIV-1 replication through transcriptional activation.To detect the activity of recombinant ATF4-2, a functional ELISA assay was performed to evaluate the interaction between recombinant human ATF4-2 and recombinant human HIV/gag. Briefly, biotin-linked ATF4-2 were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100μl were then transferred to HIV/gag-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 50μl stop solution to the wells and read at 450nm immediately. The binding activity of ATF4-2 and HIV/gag was shown in Figure 1, the EC50 for this effect is 0.0087μg/mL.

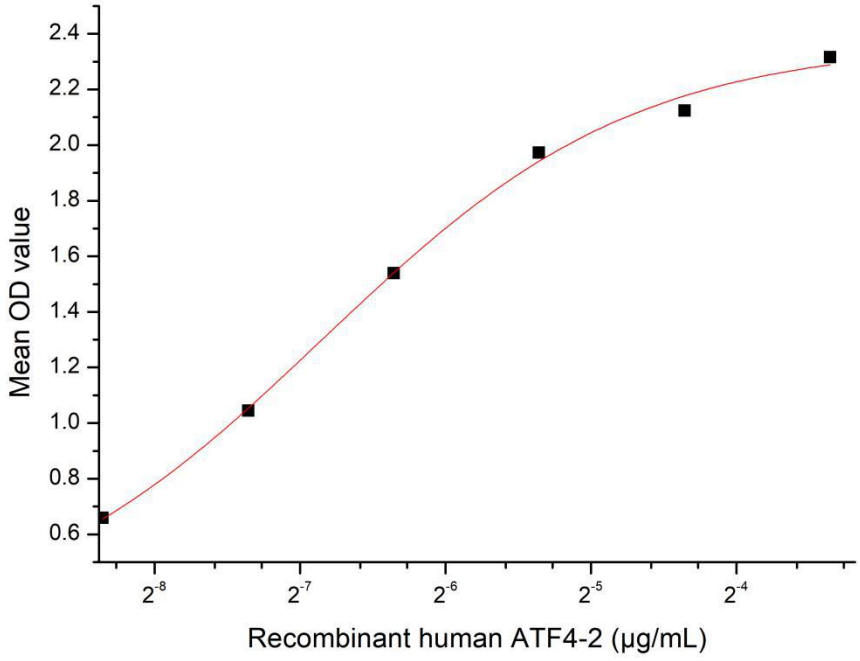

Figure 1. The binding activity of ATF4-2 and HIV/gag

[IDENTIFICATION]

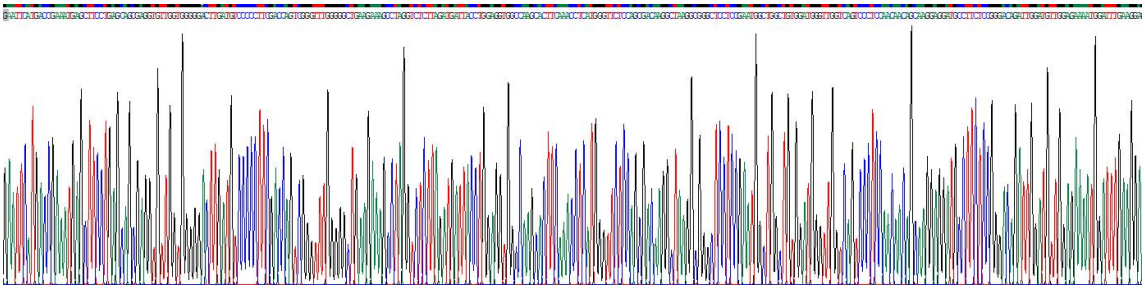

Figure 2. Gene Sequencing (extract)

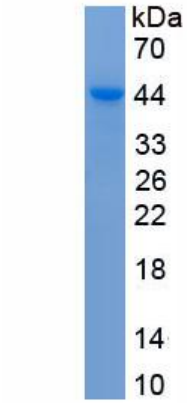

Figure 3. SDS-PAGE

Sample: Active recombinant ATF4, 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.