APB162Mu01 100μg
Active Thioredoxin-interacting Protein (TXNIP)
Organism Species: *Mus musculus (Mouse)*
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: Arg30~Glu381
Tags: N-terminal His and GST Tag
Purity: >80%
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: 6.5
Predicted Molecular Mass: 69.4kDa
Accurate Molecular Mass: 69kDa 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]

RVIVEVCEVTRVKAVRILACGVAKVLWMQGSQQCKQTLDYLRYEDTLLLEEQPTAGENEMVIM
RPGNKYEYKFGFELPQGPLGTSFKGKYGCVDYWVKAFLDRPSQPTQEAKKNFEVMDLVDVNTP
DLMAPVSAKKEKKVSCMFIPDGRVSVSARIDRKGFCEGDDISIHADFENTCSRIVVPKAAIVARHT
YLANGQTKVFTQKLSSVRGNHIISGTCASWRGKSLRVQKIRPSILGCNILKVEYSLLIYVSVPGSKK
VILDLPLVIGSRSGLSSRTSSMASRTSSEMSWIDLNIPDTPEAPPCYMDIIPEDHRLESPTTPLLDD
VDDSQDSPIFMYAPEFQFMPPPTYTE

[ACTIVITY]

Thioredoxin-interacting Protein (TXNIP), encoded by the TXNIP gene, is a multifunctional protein widely expressed in mammalian tissues. It acts as a critical negative regulator of the thioredoxin (Trx) system, a key antioxidant pathway maintaining cellular redox homeostasis. TXNIP binds to Trx and inhibits its antioxidant activity, thereby modulating cellular responses to oxidative stress, glucose metabolism, and inflammation. Dysregulation of TXNIP is linked to various pathological conditions, including diabetes, cancer, and cardiovascular diseases, making it a potential therapeutic target for redox-related disorders. Beyond redox regulation, TXNIP also participates in cell cycle control and apoptosis, highlighting its pleiotropic roles in cellular physiology. TXNIP directly binds to Trx, abrogating Trx’s antioxidant and anti-apoptotic functions.Thus a functional ELISA assay was conducted to detect the interaction of recombinant mouse TXNIP and recombinant human Trx. Briefly, TXNIP was diluted serially in PBS with 0.01% BSA (pH 7.4). Duplicate samples of 100 μl were then transferred to Trx-coated microtiter wells and incubated for 1h at 37℃. Wells were washed with PBST and incubated for 1h with anti-TXNIP 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 mouse TXNIP and recombinant human Trx was shown in Figure 1, the EC50 for this effect is1.89027μg/mL.

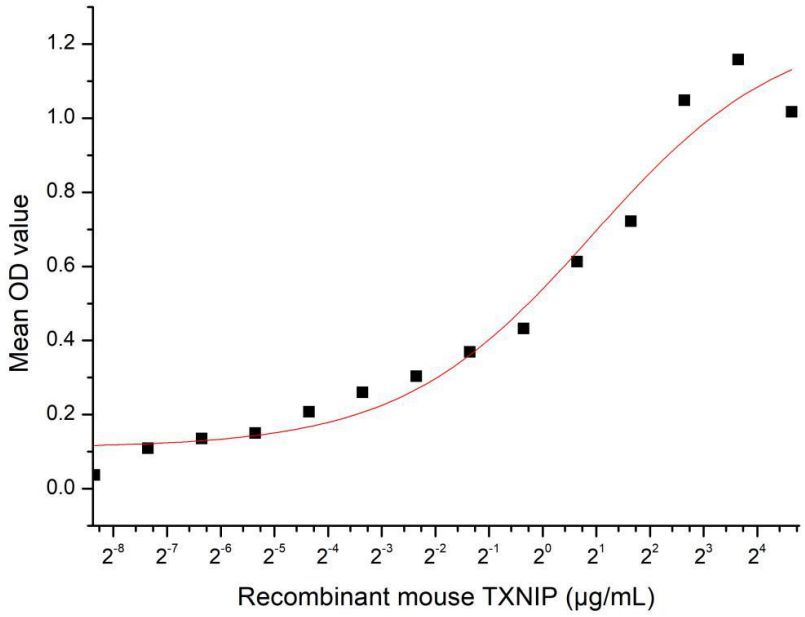


Figure 1. The binding activity of recombinant TXNIP and human Trx

[IDENTIFICATION]

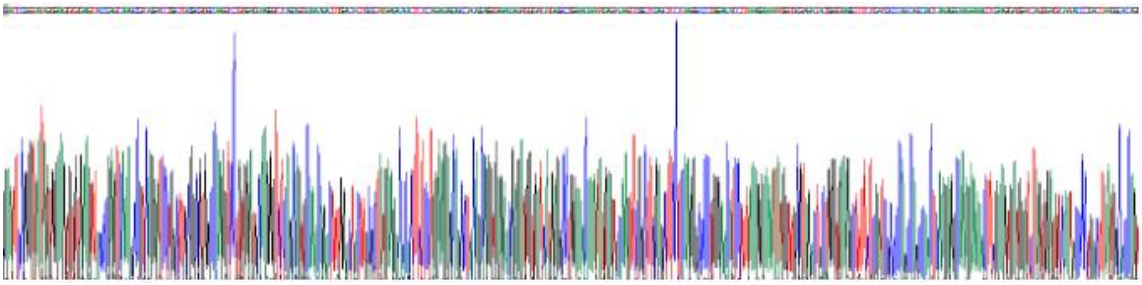


Figure 2. Gene Sequencing (extract)

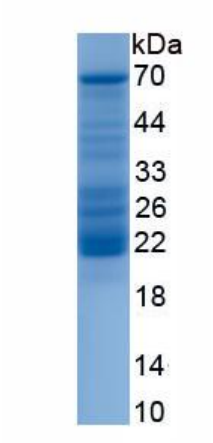


Figure 3. SDS-PAGE

Sample: Active recombinant TXNIP, Mouse

[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.