

APB743Bo01 100µg

Active Signal Transducer And Activator Of Transcription 3 (STAT3)

Organism Species: *Bos taurus*; Bovine (Cattle)

Instruction manual

FOR RESEARCH USE ONLY

NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

1st Edition (Apr, 2016)

[PROPERTIES]

Source: Prokaryotic expression.

Host: *E. coli*

Residues: Val563~Leu670

Tags: N-terminal His-tag

Purity: >95%

Endotoxin Level: <1.0EU per 1µg (determined by the LAL method).

Buffer Formulation: 20mM Tris, 150mM NaCl, pH8.0, containing 0.05% sarcosyl and 5% trehalose.

Applications: Cell culture; Activity Assays.

(May be suitable for use in other assays to be determined by the end user.)

Predicted isoelectric point: 6.6

Predicted Molecular Mass: 13.6kDa

Accurate Molecular Mass: 19kDa 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 20mM Tris, 150mM NaCl (pH8.0) 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]

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WVLDNIID LVKKYILALW NEGYIMGFIS KERERAILST  
KPPGTFLLR F SESSKEGGVT FTWVEKDISG KTQIQSVEPY TKQLNNMSF  
AEIIMGYKIM DATNILVSPL
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[ACTIVITY]

Signal transducer and activator of transcription 3 (STAT3) is a member of the STAT protein family. In response to cytokines and growth factors, STAT3 is phosphorylated by receptor-associated Janus kinases (JAK), form homo- or heterodimers, and translocate to the cell nucleus where they act as transcription activators. The protein can mediate the expression of a variety of genes in response to cell stimuli, and thus plays a key role in many cellular processes such as cell growth and apoptosis. STAT3 is essential for the differentiation of the TH17 helper T cells, which have been implicated in a variety of autoimmune diseases. Besides, Glucose 7 Phosphate Isomerase (GPI) has been identified as an interactor of STAT3, thus a binding ELISA assay was conducted to detect the

interaction of recombinant bovine STAT3 and recombinant human GPI. Briefly, STAT3 were diluted serially in PBS, with 0.01% BSA (pH 7.4). Duplicate samples of 100 μ L were then transferred to GPI-coated microtiter wells and incubated for 2h at 37 $^{\circ}$ C. Wells were washed with PBST and incubated for 1h with anti-STAT3 pAb, then aspirated and washed 3 times. After incubation with HRP labelled secondary antibody, wells were aspirated and washed 3 times. With the addition of substrate solution, wells were incubated 15-25 minutes at 37 $^{\circ}$ C. Finally, add 50 μ L stop solution to the wells and read at 450nm immediately. The binding activity of STAT3 and GPI was shown in Figure 1, and this effect was in a dose dependent manner.

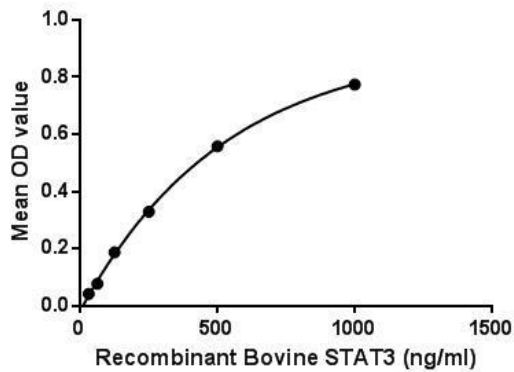


Figure 1. The binding activity of STAT3 with GPI.

[IDENTIFICATION]

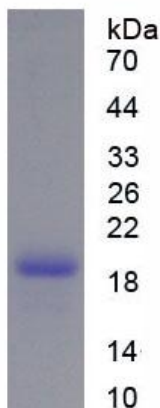


Figure 2. SDS-PAGE

Sample: Active recombinant STAT3, Bovine

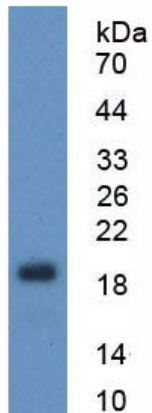


Figure 3. Western Blot

Sample: Recombinant STAT3, Bovine;

Antibody: Rabbit Anti-Bovine STAT3 Ab (PAB743Bo01)

[IMPORTANT NOTE]

The kit is designed for in vitro and research use only, we will not be responsible for any issue if the kit was used in clinical diagnostic or any other procedures.