

**APB463Ra01 100µg**

**Active Glycoprotein 39, Cartilage (GP39)**

**Organism Species: *Rattus norvegicus* (Rat)**

***Instruction manual***

FOR RESEARCH USE ONLY

NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

---

---

1th Edition (Apr, 2016)

## **[ PROPERTIES ]**

**Source:** Prokaryotic expression.

**Host:** *E. coli*

**Residues:** Tyr117~Lys364

**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:** 8.7

**Predicted Molecular Mass:** 31.2kDa

**Accurate Molecular Mass:** 29kDa as determined by SDS-PAGE reducing conditions.

## **[ 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.

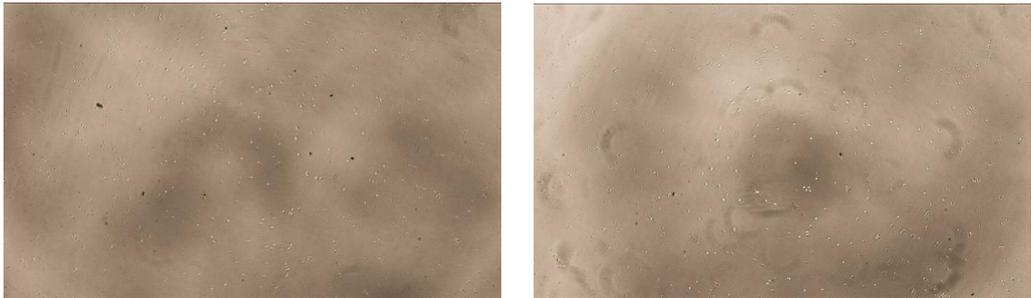
## **[ SEQUENCE ]**

YGF  
GLDLAWLYPG PKDKQHFTTL IKELKAEFTK EVQPGTEKLL LSAAVSAGKV  
TLDSGYDVAQ IAQHLDFFINL MTYDFHGTWR HTTGHHSPLF RGQQDTGPDR  
FSNVDYGVGY MLRLGAPTNK LVMGIPTFGK SFTLASSENQ VGAPITGSGL  
PGRYTKEKGT LAYYEICDFL RGAEVHRILG QQVPFATKGN QWVGYYDDPES  
VKNKVLYLKN KQLAGAMVWA VLDLDFRGSF CGHNVHFPLT NAIK

## **[ ACTIVITY ]**

Glycoprotein 39, Cartilage (GP39) also known as Chitinase-3-like protein 1 (CHI3L1), YKL-40 is a secreted glycoprotein that is approximately 40kDa in size that in humans is encoded by the CHI3L1 gene. GP39 may play a role in tissue remodeling and in the capacity of cells to respond to and cope with changes in their environment. Plays a role in T-helper cell type 2 (Th2) inflammatory response and IL-13-induced inflammation, regulating allergen sensitization, inflammatory cell apoptosis, dendritic cell accumulation and M2 macrophage differentiation. Facilitates invasion of pathogenic enteric bacteria into colonic mucosa and lymphoid organs. To test the effect of GP39 on cell proliferation, rat spleen cells were seeded into triplicate wells of 96-well plates at a density of 5,000 cells/well with 2% serum standard 1640 including various concentrations of recombinant rat GP39. After incubated for 96h, cells were observed by inverted microscope and cell proliferation was measured by Cell Counting Kit-8 (CCK-8). Briefly, 10µL of CCK-8 solution was added to each well of the plate, then the absorbance at 450nm was measured using a microplate reader after incubating the plate for 1-4 hours at 37°C. Proliferation of spleen cells after incubation with GP39 for 96h

observed by inverted microscope was shown in Figure 1. Cell viability was assessed by CCK-8 (Cell Counting Kit-8) assay after incubation with recombinant GP39 for 96h. The result was shown in Figure 2. It was obvious that GP39 significantly increased cell viability of spleen cells.



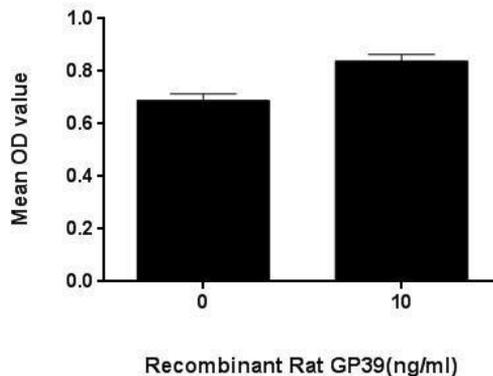
A

B

**Figure 1. Cell proliferation of spleen cells after stimulated with GP39.**

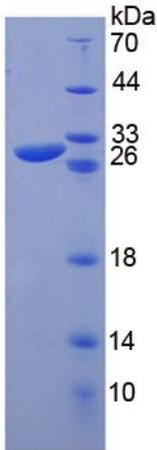
**(A) Spleen cells cultured in 1640 stimulated with 1µg/mL GP39 for 96h;**

**(B) Unstimulated spleen cells cultured in 1640 for 96h.**



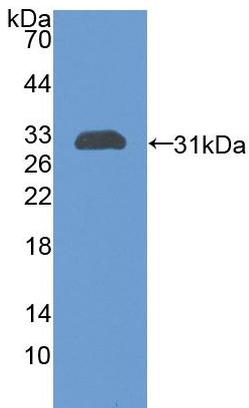
**Figure 2. Cell proliferation of spleen cells after stimulated with GP39.**

**[ IDENTIFICATION ]**



**Figure 3. SDS-PAGE**

**Sample: Active recombinant GP39, Rat**



**Figure 4. Western Blot**

**Sample: Recombinant GP39, Rat;**

**Antibody: Rabbit Anti-Rat GP39 Ab (PAB463Ra01)**

**[ 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.