# Anti-Glutaminase Antibody [SN68-09]

## ET1611-5

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| **Product Type:** | Recombinant Rabbit monoclonal IgG, primary antibodies |
| **Species reactivity:** | Human, Rat, Mouse |
| **Applications:** | WB, IF-Cell, IF-Tissue, IHC-P, FC |
| **Molecular Wt:** | Predicted band size: 74 kDa |
| **Clone number:** | SN68-09 |

**Description:** Glutamine is an important molecule involved in several cellular functions, including nitrogen and carbon transport, hepatic urea synthesis, renal ammoniagenesis, and gluconeogenesis. Glutamine is catabolized by either the liver-type (LGA) or kidney-type (KGA) glutaminase. KGA is mitochondrial specific protein whose expression in kidney is increased during metabolic acidosis. This process is mediated by an 8-base AU-sequence in KGA that functions as a pH-response element. The human KGA gene maps to chromosome 2, and produces three isoforms, designated KGA, GAC, and GAM, by alternative splicing. KGA is synthesized as a cytosolic protein that is transported to the mitochondria as an intermediate protein, and is further cleaved into the KGA isoform and the GAC isoform. The processing of the GAM isoform is unclear. The KGA isoform is abundant in brain and kidney, while the GAC isoform is principally expressed in cardiac muscle and pancreas. The GAM isoform is solely expressed in cardiac and skeletal muscle.

**Immunogen:** Synthetic peptide within human Glutaminase aa 50-100.

**Positive control:** 293T cell lysate, HeLa cell lysate, K-562 cell lysate, PC-12 cell lysate, Rat brain tissue lysate, HeLa, human kidney tissue, human tonsil tissue.

**Subcellular location:** Cytoplasm, Mitochondrion.

**Database links:** SwissProt: O94925 Human | D3Z7P3 Mouse | P13264 Rat

**Recommended Dilutions:**

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| **WB** | 1:1,000-1:2,000 |
| **IF-Cell** | 1:50-1:200 |
| **IF-Tissue** | 1:50-1:200 |
| **IHC-P** | 1:200-1:1,000 |
| **FC** | 1:1,000 |

**Storage Buffer:** 1*TBS (pH7.4), 0.05% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

**Storage Instruction:** Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

**Purity:** Protein A affinity purified.

## Images

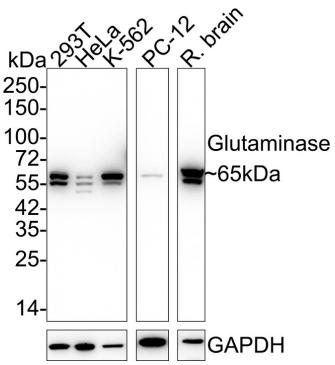


**Fig1:** Western blot analysis of Glutaminase on different lysates with Rabbit anti-Glutaminase antibody (ET1611-5) at 1/1,000 dilution.

Lane 1: 293T cell lysate (20 µg/Lane)
Lane 2: HeLa cell lysate (20 µg/Lane)
Lane 3: K-562 cell lysate (20 µg/Lane)
Lane 4: PC-12 cell lysate (20 µg/Lane)
Lane 5: Rat brain tissue lysate (30 µg/Lane)

Predicted band size: 74 kDa
Observed band size: 65 kDa

Exposure time: 24 seconds;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (ET1611-5) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

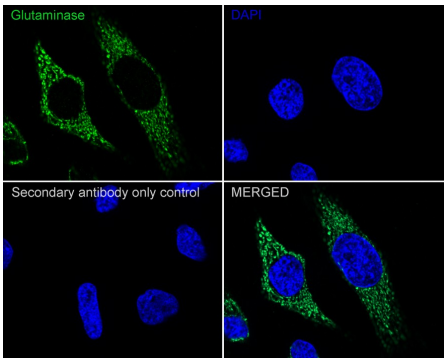


**Fig2:** Immunocytochemistry analysis of HeLa cells labeling Glutaminase with Rabbit anti-Glutaminase antibody (ET1611-5) at 1/100 dilution.

Cells were fixed in 4% paraformaldehyde for 20 minutes at room temperature, permeabilized with 0.1% Triton X-100 in PBS for 5 minutes at room temperature, then blocked with 1% BSA in 10% negative goat serum for 1 hour at room temperature. Cells were then incubated with Rabbit anti-Glutaminase antibody (ET1611-5) at 1/100 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

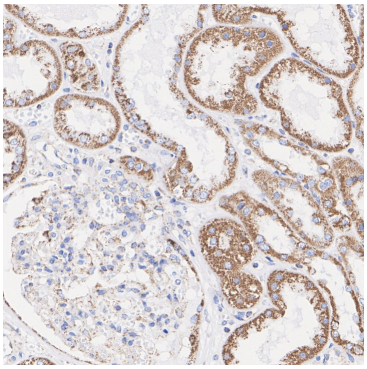

**Fig3:** Immunohistochemical analysis of paraffin-embedded human kidney tissue with Rabbit anti-Glutaminase antibody (ET1611-5) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with $ddH_2O$ and PBS, and then probed with the primary antibody (ET1611-5) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

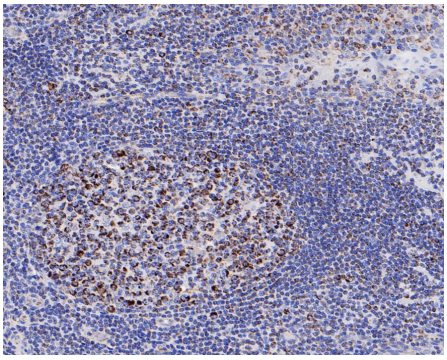

**Fig4:** Immunohistochemical analysis of paraffin-embedded human tonsil tissue with Rabbit anti-Glutaminase antibody (ET1611-5) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with $ddH_2O$ and PBS, and then probed with the primary antibody (ET1611-5) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

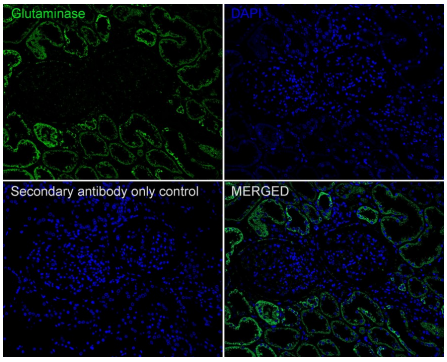


**Fig5:** Immunohistochemical analysis of paraffin-embedded human kidney tissue with Rabbit anti-Glutaminase antibody (ET1611-5) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with $ddH_2O$ and PBS, and then probed with the primary antibody (ET1611-5) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

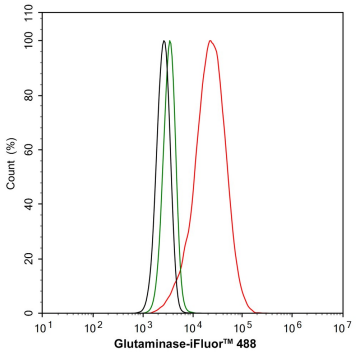


**Fig6:** Flow cytometric analysis of HeLa cells labeling Glutaminase.

Cells were fixed and permeabilized. Then stained with the primary antibody (ET1611-5, 1μg/mL) (red) compared with Rabbit IgG Isotype Control (green). After incubation of the primary antibody at +4℃ for an hour, the cells were stained with a iFluor™ 488 conjugate-Goat anti-Rabbit IgG Secondary antibody (HA1121) at 1/1,000 dilution for 30 minutes at +4℃. Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

**Note:** All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

## Background References

1. Yu D et al. Kidney-type glutaminase (GLS1) is a biomarker for pathologic diagnosis and prognosis of hepatocellular carcinoma. Oncotarget 6:7619-31 (2015).
2. Gross MI et al. Antitumor activity of the glutaminase inhibitor CB-839 in triple-negative breast cancer. Mol Cancer Ther 13:890-901 (2014).