

**GCK Antibody (C-term)**  
**Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP7901C**

**Specification**

**GCK Antibody (C-term) - Product Information**

Application	<b>WB, IHC-P,E</b>
Primary Accession	<a href="#">P35557</a>
Reactivity	<b>Human</b>
Host	<b>Rabbit</b>
Clonality	<b>Polyclonal</b>
Isotype	<b>Rabbit Ig</b>
Calculated MW	<b>52191</b>
Antigen Region	<b>403-433</b>

**GCK Antibody (C-term) - Additional Information**

**Gene ID** 2645

**Other Names**

Glucokinase, Hexokinase type IV, HK IV, Hexokinase-4, HK4, Hexokinase-D, GCK

**Target/Specificity**

This GCK antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 403-433 amino acids from the C-terminal region of human GCK.

**Dilution**

WB~~1:1000  
IHC-P~~1:50~100

**Format**

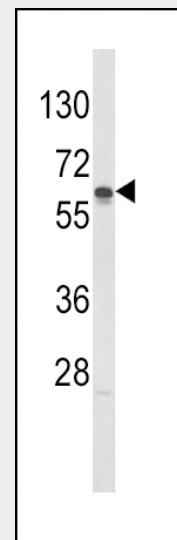
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

**Storage**

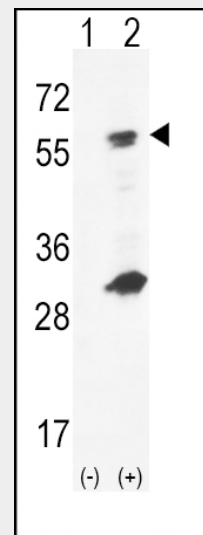
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

GCK Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.



Western blot analysis of hGCK-S418 (Cat. #AP7901c) in Jurkat cell line lysates (35ug/lane). GCK (arrow) was detected using the purified Pab.



Western blot analysis of GCK (arrow) using rabbit polyclonal hGCK-S418 (Cat. #AP7901c). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected (Lane 2) with the GCK gene.

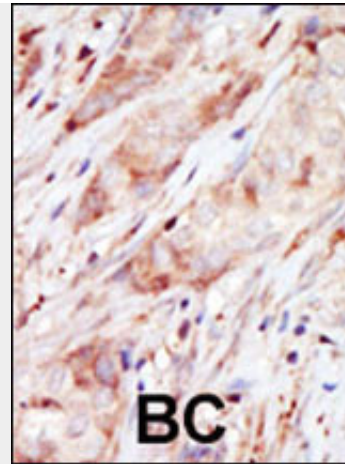
## GCK Antibody (C-term) - Protein Information

### Name GCK

{ECO:0000303|PubMed:17573900,  
ECO:0000312|HGNC:HGNC:4195}

### Function

Catalyzes the phosphorylation of hexose, such as D-glucose, D-fructose and D-mannose, to hexose 6-phosphate (D-glucose 6-phosphate, D-fructose 6-phosphate and D-mannose 6-phosphate, respectively) (PubMed:<a href="http://www.uniprot.org/citations/7742312" target="\_blank">7742312</a>, PubMed:<a href="http://www.uniprot.org/citations/11916951" target="\_blank">11916951</a>, PubMed:<a href="http://www.uniprot.org/citations/15277402" target="\_blank">15277402</a>, PubMed:<a href="http://www.uniprot.org/citations/17082186" target="\_blank">17082186</a>, PubMed:<a href="http://www.uniprot.org/citations/18322640" target="\_blank">18322640</a>, PubMed:<a href="http://www.uniprot.org/citations/19146401" target="\_blank">19146401</a>, PubMed:<a href="http://www.uniprot.org/citations/25015100" target="\_blank">25015100</a>, PubMed:<a href="http://www.uniprot.org/citations/8325892" target="\_blank">8325892</a>). Compared to other hexokinases, has a weak affinity for D-glucose, and is effective only when glucose is abundant (By similarity). Mainly expressed in pancreatic beta cells and the liver and constitutes a rate-limiting step in glucose metabolism in these tissues (PubMed:<a href="http://www.uniprot.org/citations/18322640" target="\_blank">18322640</a>, PubMed:<a href="http://www.uniprot.org/citations/25015100" target="\_blank">25015100</a>, PubMed:<a href="http://www.uniprot.org/citations/8325892" target="\_blank">8325892</a>, PubMed:<a href="http://www.uniprot.org/citations/11916951" target="\_blank">11916951</a>, PubMed:<a href="http://www.uniprot.org/citations/15277402" target="\_blank">15277402</a>).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

## GCK Antibody (C-term) - Background

Hexokinases phosphorylate glucose to produce glucose-6-phosphate, thus committing glucose to the glycolytic pathway. Alternative splicing of the gene for GCK results in three tissue-specific forms of glucokinase, one found in pancreatic islet beta cells and two found in liver. The protein localizes to the outer membrane of mitochondria. In contrast to other forms of hexokinase, this enzyme is not inhibited by its product glucose-6-phosphate but remains active while glucose is abundant. Mutations in the gene have been associated with non-insulin dependent diabetes mellitus (NIDDM), also called maturity onset diabetes of the young, type 2 (MODY2); mutations have also been associated with persistent hyperinsulinemic hypoglycemia of infancy (PHHI).

## GCK Antibody (C-term) - References

- Gloyn, A.L., et al., Diabetes 52(9):2433-2440 (2003).
- Pruhova, S., et al., Diabetologia 46(2):291-295 (2003).
- Rizzo, M.A., et al., J. Biol. Chem. 277(37):34168-34175 (2002).
- Cao, H., et al., Hum. Mutat. 20(6):478-479

target="\_blank">15277402</a>). Since insulin secretion parallels glucose metabolism and the low glucose affinity of GCK ensures that it can change its enzymatic activity within the physiological range of glucose concentrations, GCK acts as a glucose sensor in the pancreatic beta cell (By similarity). In pancreas, plays an important role in modulating insulin secretion (By similarity). In liver, helps to facilitate the uptake and conversion of glucose by acting as an insulin-sensitive determinant of hepatic glucose usage (By similarity). Required to provide D-glucose 6-phosphate for the synthesis of glycogen (PubMed:<a href="http://www.uniprot.org/citations/8878425" target="\_blank">8878425</a>). Mediates the initial step of glycolysis by catalyzing phosphorylation of D-glucose to D-glucose 6-phosphate (PubMed:<a href="http://www.uniprot.org/citations/7742312" target="\_blank">7742312</a>).

(2002).  
Barrio, R., et al., J. Clin. Endocrinol. Metab. 87(6):2532-2539 (2002).

#### **Cellular Location**

Cytoplasm. Nucleus. Mitochondrion {ECO:0000250|UniProtKB:P17712}.  
Note=Under low glucose concentrations, GCK associates with GCKR and the inactive complex is recruited to the hepatocyte nucleus.

#### **GCK Antibody (C-term) - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### **GCK Antibody (C-term) - Citations**

- [Identifying strategies to target the metabolic flexibility of tumours](#)