

# GCK Polyclonal Antibody

Catalog # AP70055

## Product Information

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Application	WB
Primary Accession	<a href="#">P35557</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	52191

## Additional Information

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Gene ID	2645
Other Names	GCK; Glucokinase; Hexokinase type IV; HK IV; Hexokinase-4; HK4; Hexokinase-D
Dilution	WB~~Western Blot: 1/500 - 1/2000. ELISA: 1/10000. Not yet tested in other applications.
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20°C

## Protein Information

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Name	GCK {ECO:0000303   PubMed:17573900, ECO:0000312   HGNC:HGNC:4195}
Function	<p>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="#">11916951</a>, PubMed:<a href="#">15277402</a>, PubMed:<a href="#">17082186</a>, PubMed:<a href="#">18322640</a>, PubMed:<a href="#">19146401</a>, PubMed:<a href="#">25015100</a>, PubMed:<a href="#">7742312</a>, PubMed:<a href="#">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="#">11916951</a>, PubMed:<a href="#">15277402</a>, PubMed:<a href="#">18322640</a>, PubMed:<a href="#">25015100</a>, PubMed:<a href="#">8325892</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</p>

synthesis of glycogen (PubMed:[8878425](#)). Mediates the initial step of glycolysis by catalyzing phosphorylation of D-glucose to D-glucose 6-phosphate (PubMed:[7742312](#)).

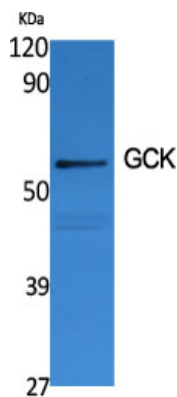
### Cellular Location

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.

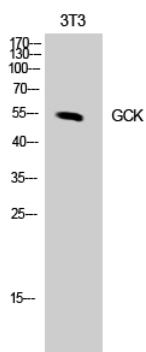
## Background

Catalyzes the initial step in utilization of glucose by the beta-cell and liver at physiological glucose concentration. Glucokinase has a high  $K_m$  for glucose, and so it is effective only when glucose is abundant. The role of GCK is to provide G6P for the synthesis of glycogen. Pancreatic glucokinase plays an important role in modulating insulin secretion. Hepatic glucokinase helps to facilitate the uptake and conversion of glucose by acting as an insulin-sensitive determinant of hepatic glucose usage.

## Images



Western Blot analysis of various cells using GCK  
Polyclonal Antibody diluted at 1 : 1000



Western Blot analysis of NIH-3T3 cells using GCK  
Polyclonal Antibody diluted at 1 : 1000

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.