

**GNPDA1 Antibody**  
Catalog # ASC10856**Specification****GNPDA1 Antibody - Product Information**

Application	WB, ICC, IF
Primary Accession	<a href="#">P46926</a>
Other Accession	<a href="#">AAC05123</a> , <a href="#">2935438</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Application Notes	GNPDA1 antibody can be used for detection of GNPDA1 by Western blot at 1 - 2 µg/mL. Antibody can also be used for immunocytochemistry starting at 5 µg/mL. For immunofluorescence start at 20 µg/mL.

**GNPDA1 Antibody - Additional Information**Gene ID **10007****Target/Specificity**

GNPDA1; GNPDA1 is predicted to not cross-react with GNPDA2.

**Reconstitution & Storage**

GNPDA1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

**Precautions**

GNPDA1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

**GNPDA1 Antibody - Protein Information****Name** GNPDA1 {ECO:0000303|PubMed:26887390, ECO:0000312|HGNC:HGNC:4417}**Function**

Catalyzes the reversible conversion of alpha-D-glucosamine 6- phosphate (GlcN-6P) into beta-D-fructose 6-phosphate (Fru-6P) and ammonium ion, a regulatory reaction step in de novo uridine diphosphate-N-acetyl-alpha-D-glucosamine (UDP-GlcNAc) biosynthesis via hexosamine pathway. Deamination is coupled to aldo-keto isomerization mediating the metabolic flux from UDP-GlcNAc toward Fru-6P. At high ammonium level can drive amination and isomerization of Fru-6P toward hexosamines and UDP-GlcNAc synthesis (PubMed:<a href="http://www.uniprot.org/citations/21807125" target="\_blank">21807125</a>, PubMed:<a href="http://www.uniprot.org/citations/26887390" target="\_blank">26887390</a>). Has a role in fine tuning the metabolic fluctuations of cytosolic UDP-GlcNAc and their effects on hyaluronan synthesis that occur during tissue remodeling (PubMed:<a href="http://www.uniprot.org/citations/26887390" target="\_blank">26887390</a>). Seems to

trigger calcium oscillations in mammalian eggs. These oscillations serve as the essential trigger for egg activation and early development of the embryo (By similarity).

#### Cellular Location

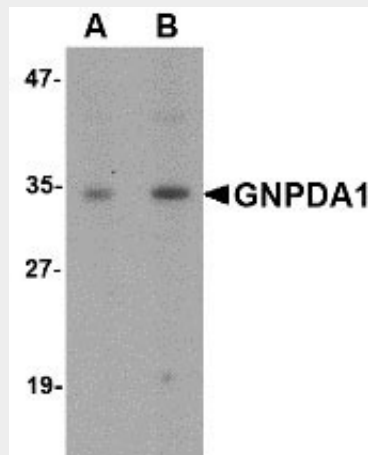
Cytoplasm {ECO:0000250|UniProtKB:O88958}.

#### GNPDA1 Antibody - Protocols

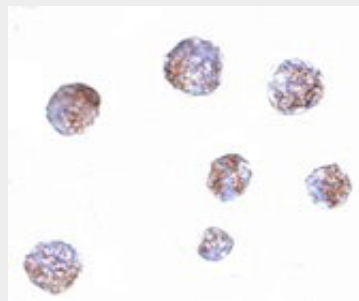
Provided below are standard protocols that you may find useful for product applications.

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

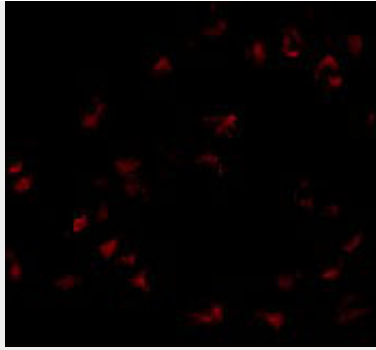
#### GNPDA1 Antibody - Images



Western blot analysis of GNPDA1 in mouse kidney lysate with GNPDA1 antibody at (A) 1 and (B) 2 µg/mL.



Immunocytochemistry of GNPDA1 in 293 cells with GNPDA1 antibody at 5 µg/mL.



Immunofluorescence of GNPDA1 in 293 cells with GNPDA1 antibody at 20 µg/mL.

### **GNPDA1 Antibody - Background**

GNPDA1 Antibody: Glucosamine-6-phosphate deaminase (GNPDA) is an allosteric enzyme that catalyzes the reversible conversion of D-glucosamine-6-phosphate into D-fructose-6-phosphate and ammonium. GNPDA1 is one of two mammalian glucosamine-6-phosphate deaminases that are thought to have arisen through gene duplication, with the GNPDA2 protein closer in structure and activity to the *E. coli* enzyme. GNPDA1 possesses greater affinity for ammonium than either GNPDA2 or the *E. coli* enzyme suggesting that the forward reaction of D-glucosamine-6-phosphate into D-fructose-6-phosphate and ammonium is catalyzed at a slower rate than GNPDA2.

### **GNPDA1 Antibody - References**

Wolosker H, Kline D, Bian Y, et al. Molecularly cloned mammalian glucosamine-6-phosphate deaminase localizes to transporting epithelium and lacks oscillin activity. *FASEB J.*1998; 12:91-9.  
Zhang J, Zhang W, Zou D, et al. Cloning and functional characterization of GNPI, a novel human homolog of glucosamine-6-phosphate isomerase/oscillin. *J. Cell Biochem.*2003; 88:932-40.  
Arreola R, Valderrama B, Morante ML, et al. Two mammalian glucosamine-6-phosphate deaminases: a structural and genetic study. *FEBS Lett.*2003; 551:63-70.