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GNPDA1 Antibody
Catalog # ASC10856

Specification

GNPDA1 Antibody - Product Information

Application	**WB, IF, ICC, E**
Primary Accession	P46926
Other Accession	AAC05123, 2935438
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℃ for three months and -20℃, 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:21807125, PubMed:26887390). 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:26887390). 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).

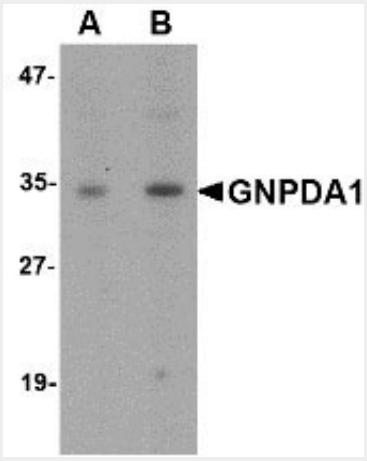
Cellular Location
Cytoplasm {ECO:0000250|UniProtKB:O88958}.

GNPDA1 Antibody - Protocols

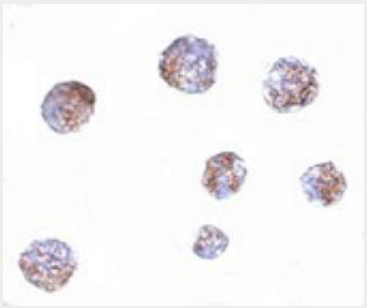
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- 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.

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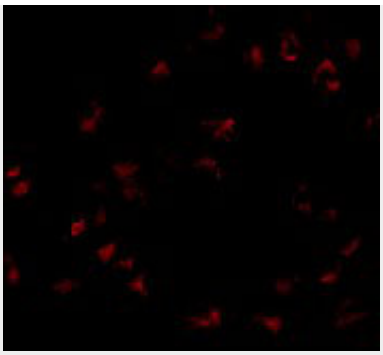

Immunofluorescence of GNPDA1 in 293 cells with GNPDA1 antibody at 20 µg/mL.

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 though 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.