

# GMPPA (Y-2D78): sc-134348

## BACKGROUND

GMPPA (GDP-mannose pyrophosphorylase A), also known as Mannose-1-phosphate guanyltransferase  $\alpha$ , is a 420 amino acid protein that belongs to the transferase hexapeptide repeat family and is involved in protein modification pathways. Functioning as a GDP-mannose pyrophosphorylase, GMPPA enzymatically catalyzes the conversion of  $\alpha$ -D-mannose 1-phosphate and GTP to GDP-mannose and a diphosphate, a reaction that is involved in the biosynthesis of nucleotide-sugar. The gene encoding GMPPA is located on human chromosome two, which houses over 1,400 genes and comprises nearly 8% of the human genome. GMPPA is expressed as two isoforms due to alternative splicing events.

## REFERENCES

1. Ning, B. and Elbein, A.D. 2000. Cloning, expression and characterization of the pig liver GDP-mannose pyrophosphorylase. Evidence that GDP-mannose and GDP-Glc pyrophosphorylases are different proteins. *Eur. J. Biochem.* 267: 6866-6874.
2. Nagase, T., Nakayama, M., Nakajima, D., Kikuno, R. and Ohara, O. 2001. Prediction of the coding sequences of unidentified human genes. XX. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. *DNA Res.* 8: 85-95.
3. Sacchetti, S., Bartolucci, S., Rossi, M. and Cannio, R. 2004. Identification of a GDP-mannose pyrophosphorylase gene from *Sulfolobus solfataricus*. *Gene* 332: 149-157.
4. Ota, T., Suzuki, Y., Nishikawa, T., Otsuki, T., Sugiyama, T., Irie, R., Wakamatsu, A., Hayashi, K., Sato, H., Nagai, K., Kimura, K., Makita, H., Sekine, M., Obayashi, M., Nishi, T., et al. 2004. Complete sequencing and characterization of 21,243 full-length human cDNAs. *Nat. Genet.* 36: 40-45.
5. Hillier, L.W., Graves, T.A., Fulton, R.S., Fulton, L.A., Pepin, K.H., Minx, P., Wagner-McPherson, C., Layman, D., Wylie, K., Sekhon, M., Becker, M.C., Fewell, G.A., Delehaunty, K.D., Miner, T.L., et al. 2005. Generation and annotation of the DNA sequences of human chromosomes 2 and 4. *Nature* 434: 724-731.
6. Jiang, H., Ouyang, H., Zhou, H. and Jin, C. 2008. GDP-mannose pyrophosphorylase is essential for cell wall integrity, morphogenesis and viability of *Aspergillus fumigatus*. *Microbiology* 154: 2730-2739.
7. Asención Diez, M.D., Demonte, A., Giacomelli, J., Garay, S., Rodríguez, D., Hofmann, B., Hecht, H.J., Guerrero, S.A. and Iglesias, A.A. 2010. Functional characterization of GDP-mannose pyrophosphorylase from *Leptospira interrogans* serovar Copenhageni. *Arch. Microbiol.* 192: 103-114.

## CHROMOSOMAL LOCATION

Genetic locus: GMPPA (human) mapping to 2q35; Gmppa (mouse) mapping to 1 C4.

## SOURCE

GMPPA (Y-2D78) is a mouse monoclonal antibody raised against recombinant GMPPA protein of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

GMPPA (Y-2D78) is recommended for detection of GMPPA of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GMPPA siRNA (h): sc-94405, GMPPA siRNA (m): sc-145648, GMPPA shRNA Plasmid (h): sc-94405-SH, GMPPA shRNA Plasmid (m): sc-145648-SH, GMPPA shRNA (h) Lentiviral Particles: sc-94405-V and GMPPA shRNA (m) Lentiviral Particles: sc-145648-V.

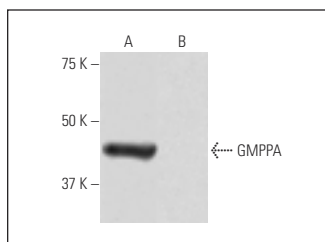
Molecular Weight of GMPPA: 46 kDa.

Positive Controls: human GMPPA transfected 293T whole cell lysate.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



GMPPA (Y-2D78): sc-134348. Western blot analysis of GMPPA expression in human GMPPA transfected (A) and non-transfected (B) 293T whole cell lysates.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.