

DPM1 (A-5): sc-515721



The Power to Question

BACKGROUND

Biosynthesis of glycosylphosphatidylinositol and N-glycan precursor is dependent upon a mannosyl donor, dolichol phosphate-mannose (DPM). DPM synthase, a transmembrane protein, is associated with membranes of the rough endoplasmic reticulum and catalyzes mannosyl transfer from GDP-mannose hydrophobic long-chain acceptor dolichyl-phosphate. DPM synthase in various organisms are grouped into two types. One type is a single-component enzyme, represented by *Saccharomyces cerevisiae*, and the other is a multicomponent enzyme which is represented by human DPM synthase and consists of three subunits: DPM1, DPM2 and DPM3. DPM1 is not sufficient for DPM synthesis, which requires the 84 amino acid DPM2 protein for localization to the ER and stable expression of DPM1. The third subunit, DPM3, comprises 92 amino acids, and it is associated with DPM1 via its C-terminal domain and with DPM2 via its N-terminal region. The stability of DPM1 is directly dependent upon DPM3, which is stabilized by DPM2. DPM synthase activity is associated with an ER phosphoprotein. In addition, a mitochondrial DPM synthase exists, which is located on the cytosolic face of the outer membrane of mitochondria.

REFERENCES

1. Gasnier, F., et al. 1992. Mitochondrial dolichyl-phosphate mannosyl synthase. Purification and immunogold localization by electron microscopy. *Eur. J. Biochem.* 206: 853-858.
2. Forsee, W.T., et al. 1997. Characterization of recombinant yeast dolichyl mannosyl phosphate synthase and site-directed mutagenesis of its cysteine residues. *Eur. J. Biochem.* 244: 935-938.
3. Tomita, S., et al. 1998. A homologue of *Saccharomyces cerevisiae* Dpm1p is not sufficient for synthesis of dolichol-phosphate-mannose in mammalian cells. *J. Biol. Chem.* 273: 9249-9254.

CHROMOSOMAL LOCATION

Genetic locus: DPM1 (human) mapping to 20q13.13; Dpm1 (mouse) mapping to 2 H3.

SOURCE

DPM1 (A-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 78-102 within an internal region of DPM1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DPM1 (A-5) is available conjugated to agarose (sc-515721 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515721 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515721 PE), fluorescein (sc-515721 FITC), Alexa Fluor® 488 (sc-515721 AF488), Alexa Fluor® 546 (sc-515721 AF546), Alexa Fluor® 594 (sc-515721 AF594) or Alexa Fluor® 647 (sc-515721 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515721 AF680) or Alexa Fluor® 790 (sc-515721 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

DPM1 (A-5) is recommended for detection of DPM1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

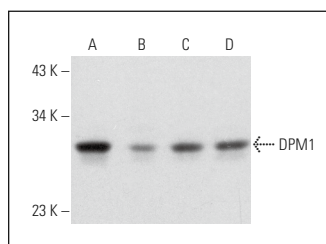
Suitable for use as control antibody for DPM1 siRNA (h): sc-41509, DPM1 siRNA (m): sc-41510, DPM1 shRNA Plasmid (h): sc-41509-SH, DPM1 shRNA Plasmid (m): sc-41510-SH, DPM1 shRNA (h) Lentiviral Particles: sc-41509-V and DPM1 shRNA (m) Lentiviral Particles: sc-41510-V.

Positive Controls: K-562 whole cell lysate: sc-2203, U-87 MG cell lysate: sc-2411 or NCI-H929 whole cell lysate: sc-364786.

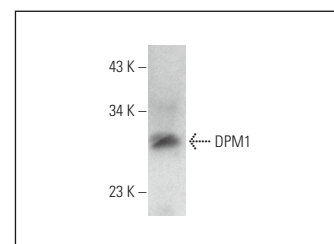
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



DPM1 (A-5): sc-515721. Western blot analysis of DPM1 expression in U-87 MG (A), Y79 (B), K-562 (C) and NCI-H929 (D) whole cell lysates.



DPM1 (A-5): sc-515721. Western blot analysis of DPM1 expression in PC-12 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Labeau, A., et al. 2020. A genome-wide CRISPR-Cas9 screen identifies the dolichol-phosphate mannosyl synthase complex as a host dependency factor for dengue virus infection. *J. Virol.* 94: e01751-19.

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.

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