

MAN2A1 (D-5): sc-377204

BACKGROUND

The α -mannosidases (designated MAN1A1, MAN1A2, MAN2A1 and MAN2A2) comprise a group of soluble proteins that localize to the endoplasmic reticulum, the Golgi apparatus or the cytoplasm. Depending on their cellular location, these proteins are involved in either the processing or the degradation of newly synthesized N-glycans. MAN2A1 (mannosidase α class 2A member 1) is a single-pass type II membrane protein that localizes to the cisternae of the Golgi and is involved in protein modification pathways. More specifically, MAN2A1 uses zinc as a cofactor to catalyze the first committed step in the formation of N-glycans, namely the hydrolysis of the terminal α -D-mannose residues in the oligosaccharide Man5(GlcNAc)3.

REFERENCES

- Moremen, K.W., et al. 1991. Isolation, characterization, and expression of cDNAs encoding murine α -mannosidase II, a Golgi enzyme that controls conversion of high mannose to complex N-glycans. *J. Cell Biol.* 115: 1521-1534.
- Misago, M., et al. 1995. Molecular cloning and expression of cDNAs encoding human α -mannosidase II and a previously unrecognized α -mannosidase IIx isozyme. *Proc. Natl. Acad. Sci. USA* 92: 11766-11770.
- Chui, D., et al. 1997. α -mannosidase-II deficiency results in dyserythropoiesis and unveils an alternate pathway in oligosaccharide biosynthesis. *Cell* 90: 157-167.
- Chui, D., et al. 2001. Genetic remodeling of protein glycosylation *in vivo* induces autoimmune disease. *Proc. Natl. Acad. Sci. USA* 98: 1142-1147.
- Hart, M.L., et al. 2003. Glycosylation inhibitors and neuraminidase enhance human immunodeficiency virus type 1 binding and neutralization by mannose-binding lectin. *J. Gen. Virol.* 84: 353-360.

CHROMOSOMAL LOCATION

Genetic locus: MAN2A1 (human) mapping to 5q21.3.

SOURCE

MAN2A1 (D-5) is a mouse monoclonal antibody raised against amino acids 584-805 mapping within an internal region of MAN2A1 of human origin.

PRODUCT

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

MAN2A1 (D-5) is available conjugated to agarose (sc-377204 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377204 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377204 PE), fluorescein (sc-377204 FITC), Alexa Fluor[®] 488 (sc-377204 AF488), Alexa Fluor[®] 546 (sc-377204 AF546), Alexa Fluor[®] 594 (sc-377204 AF594) or Alexa Fluor[®] 647 (sc-377204 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-377204 AF680) or Alexa Fluor[®] 790 (sc-377204 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

MAN2A1 (D-5) is recommended for detection of MAN2A1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 MAN2A1 siRNA (h): sc-61926, MAN2A1 shRNA Plasmid (h): sc-61926-SH and MAN2A1 shRNA (h) Lentiviral Particles: sc-61926-V.

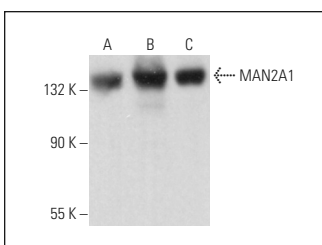
Molecular Weight of MAN2A1: 131 kDa.

Positive Controls: U-87 MG cell lysate: sc-2411, Hep G2 cell lysate: sc-2227 or JAR cell lysate: sc-2276.

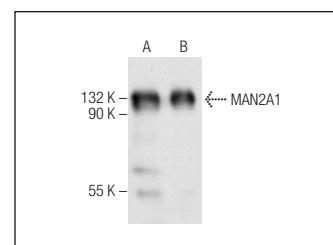
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



MAN2A1 (D-5): sc-377204. Western blot analysis of MAN2A1 expression in JAR (A), NCI-H929 (B) and U-87 MG (C) whole cell lysates.



MAN2A1 (D-5): sc-377204. Western blot analysis of MAN2A1 expression in Hep G2 (A) and JAR (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Li, C., et al. 2020. Golgi α -mannosidase II as a novel biomarker predicts prognosis in clear cell renal cell carcinoma. *Oncol. Res. Treat.* 43: 264-275.
- Shi, S., et al. 2020. Inhibition of MAN2A1 enhances tumor response to anti-PD-L1. *Clin. Cancer Res.* 26: 5990-6002.

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.