

MAN2A1 (F-10): sc-376909

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 (mouse) mapping to 17 E1.1.

SOURCE

MAN2A1 (F-10) is a mouse monoclonal antibody raised against amino acids 583-806 mapping within an internal region of MAN2A1 of mouse origin.

PRODUCT

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

MAN2A1 (F-10) is available conjugated to agarose (sc-376909 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376909 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376909 PE), fluorescein (sc-376909 FITC), Alexa Fluor[®] 488 (sc-376909 AF488), Alexa Fluor[®] 546 (sc-376909 AF546), Alexa Fluor[®] 594 (sc-376909 AF594) or Alexa Fluor[®] 647 (sc-376909 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-376909 AF680) or Alexa Fluor[®] 790 (sc-376909 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

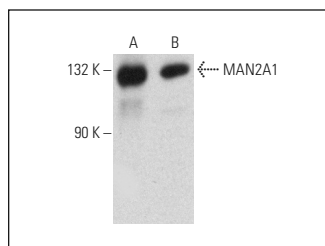
MAN2A1 (F-10) is recommended for detection of MAN2A1 of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 (m): sc-61927, MAN2A1 shRNA Plasmid (m): sc-61927-SH and MAN2A1 shRNA (m) Lentiviral Particles: sc-61927-V.

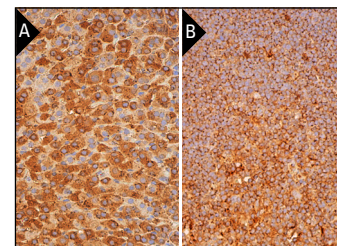
Molecular Weight of MAN2A1: 131 kDa.

Positive Controls: NRK whole cell lysate: sc-364197 or C3H/10T1/2 cell lysate: sc-3801.

DATA



MAN2A1 (F-10): sc-376909. Western blot analysis of MAN2A1 expression in C3H/10T1/2 (A) and NRK (B) whole cell lysates.



MAN2A1 (F-10): sc-376909. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse adrenal gland tissue showing cytoplasmic staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human thymus tissue showing cytoplasmic staining of medullary cells and cortical cells (B).

SELECT PRODUCT CITATIONS

- Shi, S., et al. 2020. Inhibition of MAN2A1 enhances the immune response to anti-PD-L1 in human tumors. *Clin. Cancer Res.* 26: 5990-6002.
- Li, X., et al. 2021. Heme oxygenase-1(HO-1) regulates Golgi stress and attenuates endotoxin-induced acute lung injury through hypoxia inducible factor-1 α (HIF-1 α)/HO-1 signaling pathway. *Free Radic. Biol. Med.* 165: 243-253.

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 for detailed protocols and support products.