

# MAN2A1 (53FC3): sc-58312

## BACKGROUND

The  $\alpha$ -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  $\alpha$  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  $\alpha$ -D-mannose residues in the oligosaccharide Man5(GlcNAc)<sub>3</sub>.

## REFERENCES

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2. Misago, M., et al. 1995. Molecular cloning and expression of cDNAs encoding human  $\alpha$ -mannosidase II and a previously unrecognized  $\alpha$ -mannosidase II isozyme. *Proc. Natl. Acad. Sci. USA* 92: 11766-11770.
3. Chui, D., et al. 1997.  $\alpha$ -mannosidase-II deficiency results in dyserythropoiesis and unveils an alternate pathway in oligosaccharide biosynthesis. *Cell* 90: 157-167.
4. Chui, D., et al. 2001. Genetic remodeling of protein glycosylation *in vivo* induces autoimmune disease. *Proc. Natl. Acad. Sci. USA* 98: 1142-1147.
5. 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.
6. Liu, T., et al. 2005. Human plasma N-glycoproteome analysis by immunaffinity subtraction, hydrazide chemistry, and mass spectrometry. *J. Proteome Res.* 4: 2070-2080.
7. Akama, T.O., et al. 2006. Essential and mutually compensatory roles of  $\alpha$ -mannosidase II and  $\alpha$ -mannosidase IIx in N-glycan processing *in vivo* in mice. *Proc. Natl. Acad. Sci. USA* 103: 8983-8988.
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## CHROMOSOMAL LOCATION

Genetic locus: MAN2A1 (human) mapping to 5q21.3; Man2a1 (mouse) mapping to 17 E1.1.

## SOURCE

MAN2A1 (53FC3) is a mouse monoclonal antibody raised against liver Golgi membranes of rat origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

MAN2A1 (53FC3) is recommended for detection of MAN2A1 of mouse, rat and human origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

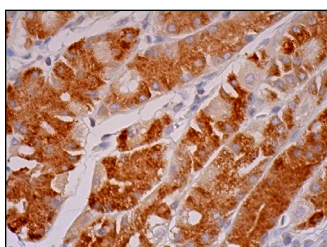
Suitable for use as control antibody for MAN2A1 siRNA (h): sc-61926, MAN2A1 siRNA (m): sc-61927, MAN2A1 shRNA Plasmid (h): sc-61926-SH, MAN2A1 shRNA Plasmid (m): sc-61927-SH, MAN2A1 shRNA (h) Lentiviral Particles: sc-61926-V and MAN2A1 shRNA (m) Lentiviral Particles: sc-61927-V.

Molecular Weight of MAN2A1: 131 kDa.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 2) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



MAN2A1 (53FC3): sc-58312. Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of glandular cells.

## 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.