SANTA CRUZ BIOTECHNOLOGY, INC.

MAN2A1/2 (C-17): sc-68241

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

1. Moremen, K.W. and Robbins, P.W. 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.
2. 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.
3. Chui, D., et al. 1997. α-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 immunoaffinity 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 {α}-mannosidase II and {α}-mannosidase IIx in N-glycan processing *in vivo* in mice. Proc. Natl. Acad. Sci. USA 103: 8983-8988.
8. Crispin, M., et al. 2007. Disruption of α-mannosidase processing induces non-canonical hybrid-type glycosylation. FEBS Lett. 581: 1963-1968.

CHROMOSOMAL LOCATION

Genetic locus: MAN2A1 (human) mapping to 5q21.3, MAN2A2 (human) mapping to 15q26.1; Man2a1 (mouse) mapping to 17 E1.1, Man2a2 (mouse) mapping to 7 D3.

SOURCE

MAN2A1/2 (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MAN2A1/2 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-68241 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MAN2A1/2 (C-17) is recommended for detection of MAN2A1 and MAN2A2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

MAN2A1/2 (C-17) is also recommended for detection of MAN2A1 and MAN2A2 in additional species, including equine, canine, bovine and porcine.

Molecular Weight of MAN2A1/2: 131 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.