

NCOAT (H-300): sc-135093

BACKGROUND

NCOAT (nuclear cytoplasmic O-GlcNAcase and acetyltransferase), also known as MGEA5 (meningioma-expressed antigen 5), HEXC or MEA5, is a bifunctional enzyme that functions as both a β -hexosaminidase and a histone acetyltransferase. Expressed ubiquitously with highest expression in placenta, brain and pancreas, NCOAT functions as a glycosidase that catalyzes the cleavage of O-GlcNAc residues from GlcNAc-modified proteins. In addition, NCOAT acetylates specific residues on Histone H3 and Histone H4, suggesting an important role in the histone code. The enzymatic activity of NCOAT is optimal at a slightly acidic pH of 5.7-7 and NCOAT function is competitively inhibited by free N-acetylglucosamine. Due to alternative splicing events, NCOAT is expressed as three isoforms. Isoform 1 localizes to the cytoplasm, while isoform 3 localizes to the nucleus.

REFERENCES

- Comtesse, N., et al. 2001. Identification of a nuclear variant of MGEA5, a cytoplasmic hyaluronidase and a β -N-acetylglucosaminidase. *Biochem. Biophys. Res. Commun.* 283: 634-640.
- Farook, V.S., et al. 2002. Analysis of MGEA5 on 10q24.1-q24.3 encoding the β -O-linked N-acetylglucosaminidase as a candidate gene for type 2 diabetes mellitus in Pima Indians. *Mol. Genet. Metab.* 77: 189-193.
- Wells, L., et al. 2002. Dynamic O-glycosylation of nuclear and cytosolic proteins: further characterization of the nucleocytoplasmic β -N-acetylglucosaminidase, O-GlcNAcase. *J. Biol. Chem.* 277: 1755-1761.
- Van Tine, B.A., et al. 2003. Assignment of N-acetyl-D-glucosaminidase (Mgea5) to rat chromosome 1q5 by tyramide fluorescence *in situ* hybridization (T-FISH): synteny between rat, mouse and human with Insulin degradation enzyme (IDE). *Cytogenet. Genome Res.* 103: 202B.

CHROMOSOMAL LOCATION

Genetic locus: MGEA5 (human) mapping to 10q24.32; Mgea5 (mouse) mapping to 19 C3.

SOURCE

NCOAT (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of NCOAT of human origin.

PRODUCT

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

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.

APPLICATIONS

NCOAT (H-300) is recommended for detection of NCOAT of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

NCOAT (H-300) is also recommended for detection of NCOAT in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for NCOAT siRNA (h): sc-62667, NCOAT siRNA (m): sc-62668, NCOAT shRNA Plasmid (h): sc-62667-SH, NCOAT shRNA Plasmid (m): sc-62668-SH, NCOAT shRNA (h) Lentiviral Particles: sc-62667-V and NCOAT shRNA (m) Lentiviral Particles: sc-62668-V.

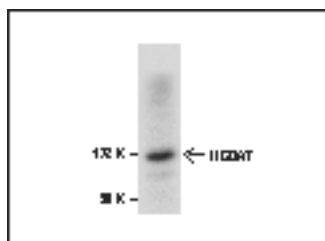
Molecular Weight of NCOAT: 130 kDa.

Positive Controls: SHP-77 whole cell lysate: sc-364258.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



NCOAT (H-300): sc-135093. Western Blotting of SHP77 whole cell lysate.

SELECT PRODUCT CITATIONS

- Muthusamy, S., et al. 2014. MicroRNA-539 Is up-regulated in failing heart, and suppresses O-GlcNAcase expression. *J. Biol. Chem.* 289: 29665-29676.

RESEARCH USE

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