

NCOAT (G-12): sc-376429

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.

CHROMOSOMAL LOCATION

Genetic locus: MGEA5 (human) mapping to 10q24.32.

SOURCE

NCOAT (G-12) is a mouse monoclonal 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_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NCOAT (G-12) is available conjugated to agarose (sc-376429 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376429 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376429 PE), fluorescein (sc-376429 FITC), Alexa Fluor® 488 (sc-376429 AF488), Alexa Fluor® 546 (sc-376429 AF546), Alexa Fluor® 594 (sc-376429 AF594) or Alexa Fluor® 647 (sc-376429 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376429 AF680) or Alexa Fluor® 790 (sc-376429 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

NCOAT (G-12) is recommended for detection of NCOAT 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), 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 NCOAT siRNA (h): sc-62667, NCOAT shRNA Plasmid (h): sc-62667-SH and NCOAT shRNA (h) Lentiviral Particles: sc-62667-V.

Molecular Weight of NCOAT: 130 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, SHP-77 whole cell lysate: sc-364258 or HeLa whole cell lysate: sc-2200.

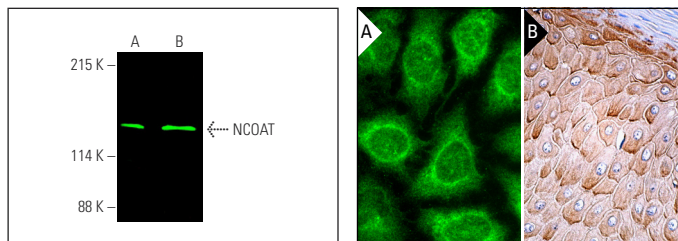
RESEARCH USE

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

STORAGE

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

DATA



NCOAT (G-12): sc-376429. Near-infrared western blot analysis of NCOAT expression in HeLa (A) and MIA PaCa-2 (B) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

NCOAT (G-12): sc-376429. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing cytoplasmic staining of squamous epithelial cells (B).

SELECT PRODUCT CITATIONS

- Resto, M., et al. 2016. O-GlcNAcase is an RNA polymerase II elongation factor coupled to pausing factors SPT5 and TIF1 β . *J. Biol. Chem.* 291: 22703-22713.
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- Das, S., et al. 2018. O-GlcNAcylation of GLI transcription factors in hyperglycemic conditions augments hedgehog activity. *Lab. Invest.* 99: 260-270.
- Tavassoly, O., et al. 2021. Pharmacological inhibition and knockdown of O-GlcNAcase reduces cellular internalization of α -synuclein pre-formed-fibrils. *FEBS J.* 288: 452-470.
- Zou, L., et al. 2021. The identification of a novel calcium-dependent link between NAD⁺ and glucose deprivation-induced increases in protein O-GlcNAcylation and ER stress. *Front. Mol. Biosci.* 8: 780865.
- Yu, F., et al. 2022. Dynamic O-GlcNAcylation coordinates ferritinophagy and mitophagy to activate ferroptosis. *Cell Discov.* 8: 40.
- Ping, X., et al. 2022. O-GlcNAc transferase is important for homology-directed repair. *DNA Repair* 119: 103394.
- Blankenship, C., et al. 2023. A novel binding site on the cryptic intervening domain is a motif-dependent regulator of O-GlcNAc transferase. *Res. Sq.* E-published.
- Yang, S., et al. 2023. O-GlcNAcylation regulates phagocytosis by promoting Ezrin localization at the cell cortex. *J. Genet. Genomics.* E-published.

PROTOCOLS

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

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