SANTA CRUZ BIOTECHNOLOGY, INC.

O-GlcNAc (RL2): sc-59624

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

O-GlcNAc (O-linked N-acetylglucosamine) is a form of protein glycosylation found exclusively in the nucleus and cytoplasm of eukaryotic cells. Many proteins are modified at their serine and threonine hydroxyl groups by the attachment of O-GlcNAc. Proteins that regulate trafficking into and out of the nuclear pore are extensively O-GlcNAcylated. Phosphorylated O-GlcNAc proteins form reversible multimeric complexes with other proteins and these associations are often regulated by phosphorylation. O-GlcNAc proteins may play a key role in pathogenesis of tumors and various cancer cells. O-GlcNAc residues regulate the assembly of the preinitiation complex and are therefore important in transcriptional initiation. Cytoskeletal and membrane O-GlcNAc proteins maintain erythrocyte cell shape and regulate the degradation of proteins responsible for lesions in Alzheimer's disease.

SOURCE

O-GlcNAc (RL2) is a mouse monoclonal antibody raised against pore complex-lamina fraction purified from liver nuclear envelopes of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

O-GlcNAc (RL2) is available conjugated to agarose (sc-59624 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-59624 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-59624 PE), fluorescein (sc-59624 FITC), Alexa Fluor® 488 (sc-59624 AF488), Alexa Fluor® 546 (sc-59624 AF546), Alexa Fluor® 594 (sc-59624 AF594) or Alexa Fluor® 647 (sc-59624 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-59624 AF680) or Alexa Fluor® 790 (sc-59624 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

O-GlcNAc (RL2) is recommended for detection of O-GlcNAc in a broad range of species, including mammals, insects, worms, plants and filamentous fungi by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Positive Controls: HeLa nuclear extract: sc-2120, AT3B-1 whole cell lysate: sc-364372 or NIH/3T3 nuclear extract: sc-2138.

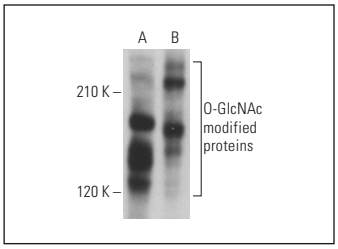
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

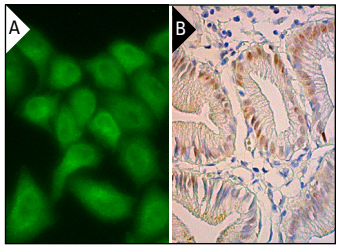
STORAGE

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

DATA



O-GlcNAc (RL2): sc-59624. Western blot analysis of O-GlcNAc modified proteins expression in AT3B-1 whole cell lysate (**A**) and NIH/3T3 nuclear extract (**B**).



O-GlcNAc (RL2): sc-59624. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear and cytoplasmic localization. Kindly provided by Yang Xiang, Ph.D., Division of Newborn Medicine, Boston Children's Hospital, Cell Biology Department, Harvard Medical School (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Sohn, K.C., et al. 2004. OGT functions as a catalytic chaperone under heat stress response: a unique defense role of OGT in hyperthermia. Biochem. Biophys. Res. Commun. 322: 1045-1051.
2. Kaushik, A.K., et al. 2016. Inhibition of the hexosamine biosynthetic pathway promotes castration-resistant prostate cancer. Nat. Commun. 7: 11612.
3. Qiu, H., et al. 2017. Modification of p27 with O-linked N-acetylglucosamine regulates cell proliferation in hepatocellular carcinoma. Mol. Carcinog. 56: 258-271.
4. Hu, J., et al. 2017. Augmented O-GlcNAc signaling via glucosamine attenuates oxidative stress and apoptosis following contrast-induced acute kidney injury in rats. Free Radic. Biol. Med. 103: 121-132.
5. Vasconcelos-Dos-Santos, A., et al. 2017. Hyperglycemia exacerbates colon cancer malignancy through hexosamine biosynthetic pathway. Oncogenesis 6: e306.
6. Kubota, Y., et al. 2017. WGA-based lectin affinity gel electrophoresis: a novel method for the detection of O-GlcNAc-modified proteins. PLoS ONE 12: e0180714.
7. Cox, N.J., et al. 2018. Dynamic glycosylation governs the vertebrate COPII protein trafficking pathway. Biochemistry 57: 91-107.
8. Kongkaew, T., et al. 2018. O-GlcNAcylation in oral squamous cell carcinoma. J. Oral Pathol. Med. 47: 260-267.
9. Draime, A., et al. 2018. The O-GlcNAc transferase OGT interacts with and post-translationally modifies the transcription factor HOXA1. FEBS Lett. 592: 1185-1201.

RESEARCH USE

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