SANTA CRUZ BIOTECHNOLOGY, INC.

O-GlcNAc (6D93): sc-71736

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.

REFERENCES

1. Haltiwanger, R.S., et al. 1992. Glycosylation of nuclear and cytoplasmic proteins. Purification and characterization of a uridine diphospho-N-acetyl-glucosamine:polypeptide β-N-acetylglucosaminyltransferase. J. Biol. Chem. 267: 9005-9013.
2. Kreppel, L.K., et al. 1997. Dynamic glycosylation of nuclear and cytosolic proteins. Cloning and characterization of a unique O-GlcNAc transferase with multiple tetratricopeptide repeats. J. Biol. Chem. 272: 9308-9315.
3. Lubas, W.A., et al. 1997. O-linked GlcNAc transferase is a conserved nucleocytoplasmic protein containing tetratricopeptide repeats. J. Biol. Chem. 272: 9316-3624.
4. Shafi, R., et al. 2000. The O-GlcNAc transferase gene resides on the X chromosome and is essential for embryonic stem cell viability and mouse ontogeny. Proc. Natl. Acad. Sci. USA 97: 5735-5739.
5. Akimoto, Y., et al. 2003. Localization of the O-GlcNAc transferase and O-GlcNAc-modified proteins in rat cerebellar cortex. Brain Res. 966: 194-205.
6. Chen, D., et al. 2005. Identification of secret agent as the O-GlcNAc transferase that participates in Plum pox virus infection. J. Virol. 79: 9381-9387.
7. Leavy, T.M. and Bertozzi, C.R. 2007. A high-throughput assay for O-GlcNAc transferase detects primary sequence preferences in peptide substrates. Bioorg. Med. Chem. Lett. 17: 3851-3854.

SOURCE

O-GlcNAc (6D93) 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.

STORAGE

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

APPLICATIONS

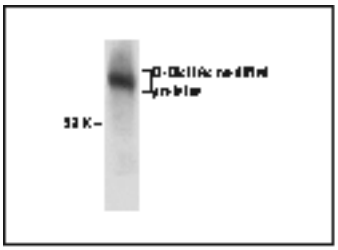
O-GlcNAc (6D93) is recommended for detection of O-GlcNAc in a broad range of species, including mammals, insects, worms, plants and filamentous fungi, by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

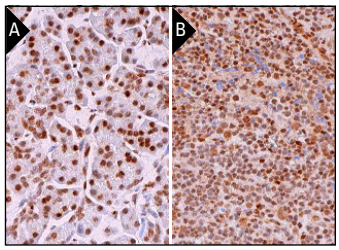
Positive Controls: HeLa nuclear extract: sc-2120, A549 cell lysate: sc-2413 or mouse brain extract: sc-2253.

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.

DATA





O-GlcNAc (6D93): sc-71736. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing nuclear staining of exocrine glandular cells and Islets of Langerhans (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing nuclear staining of cells in non-germinal center (**B**).

SELECT PRODUCT CITATIONS

1. Sakaidani, Y., et al. 2010. O-GlcNAc modification of the extracellular domain of Notch receptors. Methods Enzymol. 480: 355-373.
2. Borghgraef, P., et al. 2013. Increasing brain protein O-GlcNAc-ylation mitigates breathing defects and mortality of Tau.P301L mice. PLoS ONE 8: e84442.

RESEARCH USE

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

CONJUGATES

See **O-GlcNAc (RL2): sc-59624** for O-GlcNAc antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.