



# SZABO SCANDIC

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# Cosmc (H-10): sc-271829

## BACKGROUND

Cosmc, or C1GALT1-specific chaperone 1, is a 318 amino acid protein encoded by the human gene C1GALT1C1. Cosmc is believed to be a chaperone required for the generation of 1 O-glycan Gal- $\beta$ 1-3GalNAc- $\alpha$ 1-Ser/Thr (Tn antigen), which is a precursor for many extended O-glycans in glycoproteins. Cosmc may also function as a specific molecular chaperone assisting the folding/stability of core 1  $\beta$ -3-galactosyltransferase (C1GALT1). Cosmc is a single-pass type II membrane protein. Cosmc is ubiquitously expressed in all tissue types. It is most abundantly expressed in small intestine, stomach, salivary gland, kidney and testis, and at intermediate levels in whole brain, cerebellum, spinal cord, thymus, spleen, trachea, lung, pancreas, ovary and uterus. Defects in C1GALT1C1 are the cause of Tn syndrome, a rare autoimmune disease caused by somatic mutation in the C1GALT1C1 gene in which subpopulations of blood cells of all lineages carry an incompletely glycosylated Tn antigen, effecting red cells and platelets and leading to anemia, leukopenia and thrombocytopenia. Tn-polyagglutinability is sometimes associated with leukemia or is a preleukemic state.

## CHROMOSOMAL LOCATION

Genetic locus: C1GALT1C1 (human) mapping to Xq24.

## SOURCE

Cosmc (H-10) is a mouse monoclonal antibody raised against amino acids 1-270 mapping at the N-terminus of Cosmc of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cosmc (H-10) is available conjugated to agarose (sc-271829 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271829 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271829 PE), fluorescein (sc-271829 FITC), Alexa Fluor® 488 (sc-271829 AF488), Alexa Fluor® 546 (sc-271829 AF546), Alexa Fluor® 594 (sc-271829 AF594) or Alexa Fluor® 647 (sc-271829 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271829 AF680) or Alexa Fluor® 790 (sc-271829 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, Cosmc (H-10) is available conjugated to biotin (sc-271829 B), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA.

## APPLICATIONS

Cosmc (H-10) is recommended for detection of Cosmc of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

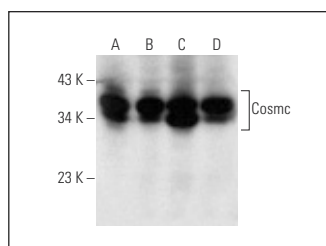
Suitable for use as control antibody for Cosmc siRNA (h): sc-62148, Cosmc shRNA Plasmid (h): sc-62148-SH and Cosmc shRNA (h) Lentiviral Particles: sc-62148-V.

Molecular Weight of Cosmc: 36 kDa.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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



Cosmc (H-10): sc-271829. Western blot analysis of Cosmc expression in MIA PaCa-2 (A), HEK293 (B), Hep G2 (C) and HeLa (D) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Kudelka, M.R., et al. 2016. Cosmc is an X-linked inflammatory bowel disease risk gene that spatially regulates gut microbiota and contributes to sex-specific risk. *Proc. Natl. Acad. Sci. USA* 113: 14787-14792.
- Jiang, Y., et al. 2018. Aberrant O-glycosylation contributes to tumorigenesis in human colorectal cancer. *J. Cell. Mol. Med.* 22: 4875-4885.
- Liu, Z., et al. 2019. Tn antigen promotes human colorectal cancer metastasis via H-Ras mediated epithelial-mesenchymal transition activation. *J. Cell. Mol. Med.* 23: 2083-2092.
- Xu, F., et al. 2020. Demethylation of the Cosmc promoter alleviates the progression of breast cancer through downregulation of the Tn and Sialyl-Tn antigens. *Cancer Manag. Res.* 12: 1017-1027.
- Liu, J., et al. 2020. Overexpression of Cosmc suppresses cell migration and invasion in different subtypes of breast cancer cells via Tn and T glycans. *Biosci. Rep.* 40: BSR20191062.
- Gollamudi, S., et al. 2020. Cosmc mutations reduce T-synthase activity in advanced Alzheimer's disease. *Alzheimers Dement.* 6: e12040.

## STORAGE

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

## RESEARCH USE

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

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