

glypican-3 (1G12): sc-65443

BACKGROUND

Glypican-3 (GPC3) is an integral membrane protein that is mutated in the Simpson-Golabi-Behmel syndrome (SGBS). SGBS is characterized by pre- and post-natal overgrowth and is a recessive X-linked condition. Glypican-3, also designated OCI-5 in rat, is a member of the glypican family of heparan sulfate proteoglycans, which attach to the cell membrane via a glycosyl-phosphatidylinositol (GPI) anchor. Expression of glypican-3 is detected in embryonic mesodermal lung, liver and kidney tissues. Glypican-3 is thought to regulate tissue and organ growth through interactions with growth factors such as Insulin-like growth factor-II (IGF-II) or fibroblast growth factor-2 (FGF-2). Glypican-3 may be downregulated by various means, including promoter hypermethylation or the repression of specific transcription factors.

REFERENCES

1. Pilia, G., et al. 1996. Mutations in GPC3, a glypican gene, cause the Simpson-Golabi-Behmel overgrowth syndrome. *Nat. Genet.* 12: 241-247.
2. Song, H.H., et al. 1997. OCI-5/rat glypican-3 binds to fibroblast growth factor-2 but not to Insulin-like growth factor-2. *J. Biol. Chem.* 272: 7574-7577.

CHROMOSOMAL LOCATION

Genetic locus: GPC3 (human) mapping to Xq26.2.

SOURCE

glypican-3 (1G12) is a mouse monoclonal antibody raised against a fragment containing amino acids 511-580 of glypican-3 of human origin.

PRODUCT

Each vial contains 15 µg IgG₁ in 100 µl of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

glypican-3 (1G12) is recommended for detection of glypican-3 of human origin 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for glypican-3 siRNA (h): sc-40640, glypican-3 shRNA Plasmid (h): sc-40640-SH and glypican-3 shRNA (h) Lentiviral Particles: sc-40640-V.

Molecular Weight of glypican-3: 67 kDa.

Positive Controls: glypican-3 (h): 293T Lysate: sc-176285, IMR-32 cell lysate: sc-2409 or SH-SY5Y cell lysate: sc-3812.

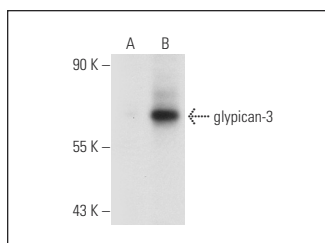
STORAGE

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.

DATA



glypican-3 (1G12): sc-65443. Western blot analysis of glypican-3 expression in non-transfected: sc-117752 (A) and human glypican-3 transfected: sc-176285 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Liu, H., et al. 2010. Diagnostic value of glypican-3 in serum and liver for primary hepatocellular carcinoma. *World J. Gastroenterol.* 16: 4410-4415.
2. Ho, M. and Kim, H. 2011. Glypican-3: a new target for cancer immunotherapy. *Eur. J. Cancer* 47: 333-338.
3. Zhang, L., et al. 2012. Glypican-3 as a potential differential diagnosis marker for hepatocellular carcinoma: a tissue microarray-based study. *Acta Histochem.* 114: 547-552.
4. Fu, S.J., et al. 2013. Glypican-3 is a potential prognostic biomarker for hepatocellular carcinoma after curative resection. *Surgery* 154: 536-544.
5. Feng, M., et al. 2013. Therapeutically targeting glypican-3 via a conformation-specific single-domain antibody in hepatocellular carcinoma. *Proc. Natl. Acad. Sci. USA* 110: E1083-E1091.
6. Yip, C.W., et al. 2014. Granulin-epithelin precursor interacts with heparan sulfate on liver cancer cells. *Carcinogenesis* 35: 2485-2494.
7. Sideras, K., et al. 2015. Tumour antigen expression in hepatocellular carcinoma in a low-endemic western area. *Br. J. Cancer* 112: 1911-1120.
8. Montalbano, M., et al. 2018. Role of glypican-3 in the growth, migration and invasion of primary hepatocytes isolated from patients with hepatocellular carcinoma. *Cell. Oncol.* 41: 169-184.
9. Duo, J., et al. 2018. Slow off-rate modified aptamer (SOMAmer) as a novel reagent in immunoassay development for accurate soluble glypican-3 quantification in clinical samples. *Anal. Chem.* 90: 5162-5170.
10. Li, Y.C., et al. 2018. Low glucose metabolism in hepatocellular carcinoma with GPC3 expression. *World J. Gastroenterol.* 24: 494-503.

CONJUGATES

See **glypican-3 (F-3): sc-390587** for glypican-3 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.