

# $\beta$ -1,4-Gal-T5 (N-19)-R: sc-22289-R

## BACKGROUND

$\beta$ -1,4-galactosyltransferases ( $\beta$ -1,4-Gal-T) are type II membrane-bound glycoproteins that are substrate-specific and function to transfer galactose in a  $\beta$ -1,4 linkage to an acceptor sugar. There are seven members of the  $\beta$ -1, 4-Gal-T family, all of which are directed to the Golgi apparatus through a hydrophobic sequence at the N-terminus.  $\beta$ -1,4-Gal-T5 ( $\beta$ -1,4-galactosyltransferase 5) is a member of the  $\beta$ -1,4-Gal-T protein family and is localized to the *trans*-cisternae of the Golgi stack. Expressed throughout the body,  $\beta$ -1, 4-Gal-T5 is responsible for the synthesis of both N-linked oligosaccharides and the various carbohydrates found in glycolipids.  $\beta$ -1,4-Gal-T5 is thought to preferentially galactosylate oligosaccharides that are upregulated in astrocytoma cells, suggesting a possible role in carcinogenesis.

## REFERENCES

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2. Xu, S., et al. 2002. Overexpression of  $\beta$ -1,4-galactosyltransferase V increases the growth of astrocytoma cell line. *J. Exp. Clin. Cancer Res.* 21: 409-414.
3. Sato, T. and Furukawa, K. 2004. Transcriptional regulation of the human  $\beta$ -1,4-galactosyltransferase V gene in cancer cells: essential role of transcription factor Sp1. *J. Biol. Chem.* 279: 39574-39583.
4. Zaidi, S.H., et al. 2005. A family exhibiting arterial tortuosity syndrome displays homozygosity for markers in the arterial tortuosity locus at chromosome 20q13. *Clin. Genet.* 67: 183-188.
5. Jiang, J., et al. 2006.  $\beta$ 1,4-galactosyltransferase V functions as a positive growth regulator in glioma. *J. Biol. Chem.* 281: 9482-9489.
6. Jiang, J., et al. 2006. Down-regulation of  $\beta$ 1,4-galactosyltransferase V is a critical part of etoposide-induced apoptotic process and could be mediated by decreasing Sp1 levels in human glioma cells. *Glycobiology* 16: 1045-1051.
7. Sato, T. and Furukawa, K. 2007. Sequential action of Ets-1 and Sp1 in the activation of the human  $\beta$ -1,4-galactosyltransferase V gene involved in abnormal glycosylation characteristic of cancer cells. *J. Biol. Chem.* 282: 27702-27712.

## CHROMOSOMAL LOCATION

Genetic locus: B4GALT5 (human) mapping to 20q13.13; B4galt5 (mouse) mapping to 2 H3.

## SOURCE

$\beta$ -1,4-Gal-T5 (N-19)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of  $\beta$ -1,4-Gal-T5 of human origin.

## STORAGE

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

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-22289 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

$\beta$ -1,4-Gal-T5 (N-19)-R is recommended for detection of  $\beta$ -1,4-Gal-T5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

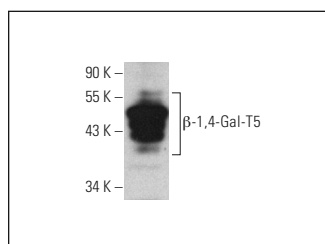
$\beta$ -1,4-Gal-T5 (N-19)-R is also recommended for detection of  $\beta$ -1,4-Gal-T5 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for  $\beta$ -1,4-Gal-T5 siRNA (h): sc-72405,  $\beta$ -1,4-Gal-T5 siRNA (m): sc-108225,  $\beta$ -1,4-Gal-T5 shRNA Plasmid (h): sc-72405-SH,  $\beta$ -1,4-Gal-T5 shRNA Plasmid (m): sc-108225-SH,  $\beta$ -1,4-Gal-T5 shRNA (h) Lentiviral Particles: sc-72405-V and  $\beta$ -1,4-Gal-T5 shRNA (m) Lentiviral Particles: sc-108225-V.

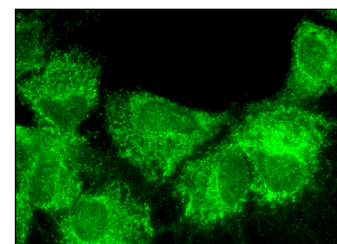
Molecular Weight of  $\beta$ -1,4-Gal-T5: 45 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

## DATA



$\beta$ -1,4-Gal-T5 (N-19)-R: sc-22289-R. Western blot analysis of  $\beta$ -1,4-Gal-T5 expression in HeLa whole cell lysate.



$\beta$ -1,4-Gal-T5 (N-19)-R: sc-22289-R. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.