

FUT2 (9T-8): sc-100742

BACKGROUND

All human blood, with rare exception, carries the red cell H antigen. The H blood group locus determines expression of the H antigen in the erythroid lineage, whereas a unique locus (the SE (secretion) locus) controls H expression in a variety of secretory epithelia and in saliva. Individuals of the Bombay phenotype lack H antigen, whereas individuals of the para-Bombay phenotype synthesize H determinants (essential precursors to A and B antigens) in their secretory epithelia but not in the erythroid lineage. The H and SE loci, which may have arisen by gene duplication from a common ancestral gene, are known as FUT1 and FUT2, respectively, and are tightly linked on chromosome 19q13.3. FUT1 and FUT2 encode two distinct α -2-L-fucosyltransferases in human serum. The FUT2 locus (SE or ABO-secretor locus) exhibits extensive polymorphism showing high heterogeneity and overt ethnic specificity. For this reason, mutations or polymorphisms of the FUT2 gene are used as markers for investigating population genetics. FUT2 is expressed on the surface of several human tumor cell lines such as BEL-7404, SPC-A-1 and SGC-7901.

REFERENCES

1. Kelly, R.J., et al. 1994. Molecular basis for H blood group deficiency in Bombay (Oh) and para-Bombay individuals. *Proc. Natl. Acad. Sci. USA* 91: 5843-5847.
2. Koda, Y., et al. 1997. Missense mutation of FUT1 and deletion of FUT2 are responsible for Indian Bombay phenotype of ABO blood group system. *Biochem. Biophys. Res. Commun.* 238: 21-25.
3. Wang, B., et al. 1997. Two missense mutations of H type α (1,2)fucosyltransferase gene (FUT1) responsible for para-Bombay phenotype. *Vox. Sang.* 72: 31-35.
4. Saunier, K., et al. 2001. Organization of the bovine α 2-fucosyltransferase gene cluster suggests that the Sec1 gene might have been shaped through a nonautonomous L1-retrotransposition event within the same locus. *Mol. Biol. Evol.* 18: 2083-2091.
5. Domino, S.E., et al. 2001. Molecular cloning, genomic mapping, and expression of two secretor blood group α (1,2)fucosyltransferase genes differentially regulated in mouse uterine epithelium and gastrointestinal tract. *J. Biol. Chem.* 276: 23748-23756.
6. Pang, H., et al. 2001. Polymorphism of the human ABO-secretor locus (FUT2) in four populations in Asia: indication of distinct Asian subpopulations. *Ann. Hum. Genet.* 65: 429-437.

CHROMOSOMAL LOCATION

Genetic locus: FUT2 (human) mapping to 19q13.33; Fut2 (mouse) mapping to 7 B4.

SOURCE

FUT2 (9T-8) is a mouse monoclonal antibody raised against recombinant FUT2 of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

FUT2 (9T-8) is recommended for detection of FUT2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for FUT2 siRNA (h): sc-40593, FUT2 siRNA (m): sc-40594, FUT2 shRNA Plasmid (h): sc-40593-SH, FUT2 shRNA Plasmid (m): sc-40594-SH, FUT2 shRNA (h) Lentiviral Particles: sc-40593-V and FUT2 shRNA (m) Lentiviral Particles: sc-40594-V.

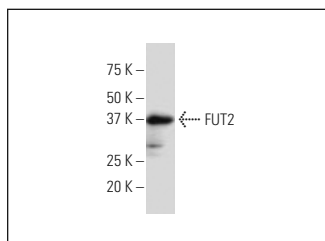
Molecular Weight of FUT2: 39 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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).

DATA



FUT2 (9T-8): sc-100742. Western blot analysis of FUT2 expression in NIH/3T3 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Wang, J., et al. 2021. High-risk HPV16 E6 activates the cGMP/PKG pathway through glycosyltransferase ST6GAL1 in cervical cancer cells. *Front. Oncol.* 11: 716246.
2. Zhang, Y., et al. 2022. FUT2 facilitates autophagy and suppresses apoptosis via p53 and JNK signaling in lung adenocarcinoma cells. *Cells* 11: 4031.
3. Liu, P., et al. 2023. FUT2 promotes the tumorigenicity and metastasis of colorectal cancer cells via the Wnt/ β -catenin pathway. *Int. J. Oncol.* 62: 35.

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.