



FucT-IV (MY-1): sc-59531

BACKGROUND

Fucosyltransferases (FucTs) catalyze the covalent association of fucose to different positional linkages on sugar acceptor molecules. The carbohydrate moieties that are generated are covalently attached to cell surfaces and are necessary to ensure a surface contour that satisfies a variety of physiological roles. FucT-IV, α -(1,3)-fucosyltransferase 4), also known as FUT4, FCT3A or ELFT, is a 405 amino acid single-pass type II membrane protein that localizes to Golgi stacks. During embryogenesis, FucT-IV is highly expressed in skin, liver, kidney, muscle and small intestine where it functions to catalyze the glycosidic attachment of α -Fucose to various molecules, such as N-acetylglucosamines. Via its catalytic activity, FucT-IV participates in the synthesis of carbohydrate molecules like the cell-adhesion antigen CD15 (also known as Lewis X), thereby playing a role in cell cycle events such as apoptosis and cell-cell binding. Overexpression of FucT-IV is implicated in epithelial cancers, suggesting a possible role for FucT-IV in carcinogenesis.

REFERENCES

1. Stocks, S.C., Albrechtsen, M. and Kerr, M.A. 1990. Expression of the CD15 differentiation antigen (3-fucosyl-N-acetyl-lactosamine, Le^x) on putative neutrophil adhesion molecules CR3 and NCA-160. *Biochem. J.* 268: 275-280.
2. Wagers, A.J. and Kansas, G.S. 2000. Potent induction of α (1,3)-fucosyltransferase VII in activated CD4⁺ T cells by TGF β 1 through a p38 mitogen-activated protein kinase-dependent pathway. *J. Immunol.* 165: 5011-5016.
3. Huang, M.C., Zollner, O., Moll, T., Maly, P., Thall, A.D., Lowe, J.B. and Vestweber, D. 2000. P-Selectin glycoprotein ligand-1 and E-Selectin ligand-1 are differentially modified by fucosyltransferases FucT-IV and FucT-VII in mouse neutrophils. *J. Biol. Chem.* 275: 31353-31360.
4. Withers, D.A. and Hakomori, S.I. 2000. Human α (1,3)-fucosyltransferase IV (FucT-IV) gene expression is regulated by Elk-1 in the U-937 cell line. *J. Biol. Chem.* 275: 40588-40593.
5. Taniguchi, A., Suga, R. and Matsumoto, K. 2000. Expression and transcriptional regulation of the human α 1, 3-fucosyltransferase 4 (FUT4) gene in myeloid and colon adenocarcinoma cell lines. *Biochem. Biophys. Res. Commun.* 273: 370-376.
6. Nakayama, F., Nishihara, S., Iwasaki, H., Kudo, T., Okubo, R., Kaneko, M., Nakamura, M., Karube, M., Sasaki, K. and Narimatsu, H. 2001. CD15 expression in mature granulocytes is determined by α 1,3-fucosyltransferase IX, but in promyelocytes and monocytes by α 1,3-fucosyltransferase IV. *J. Biol. Chem.* 276: 16100-16106.
7. Barry, S.M., Zisoulis, D.G., Neal, J.W., Clipstone, N.A. and Kansas, G.S. 2003. Induction of FucT-VII by the Ras/MAP kinase cascade in Jurkat T cells. *Blood* 102: 1771-1778.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

CHROMOSOMAL LOCATION

Genetic locus: FUT4 (human) mapping to 11q21.

SOURCE

FucT-IV (MY-1) is a mouse monoclonal antibody raised against purified neutrophils from peripheral blood of human origin.

PRODUCT

Each vial contains 500 μ l culture supernatant containing IgM with < 0.1% sodium azide.

APPLICATIONS

FucT-IV (MY-1) is recommended for detection of FucT-IV of human origin by immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:10-1:200); also recommended for detection of an antigen located on mature granulocytes and on Hodgkin and Reed Sternberg cells.

Suitable for use as control antibody for FucT-IV siRNA (h): sc-40585, FucT-IV shRNA Plasmid (h): sc-40585-SH and FucT-IV shRNA (h) Lentiviral Particles: sc-40585-V.

Molecular Weight of FucT-IV: 45 kDa.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.