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Blood Group Antigen Lewis B Antibody - With BSA and Azide

Mouse Monoclonal Antibody [Clone SPM194]
Catalog # AH11267

Product Information

Application	IHC, IF
Primary Accession	P21217
Other Accession	2525, 169238
Reactivity	Human, Guinea Pig
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG1, kappa
Clone Names	SPM194
Calculated MW	42117

Additional Information

Gene ID	2525
Other Names	Galactoside 3(4)-L-fucosyltransferase, 2.4.1.65, Blood group Lewis alpha-4-fucosyltransferase, Lewis FT, Fucosyltransferase 3, Fucosyltransferase III, FucT-III, FUT3, FT3B, LE
Application Note	IHC~~1:100~500 IF~~1:50~200
Storage	Store at 2 to 8°C.Antibody is stable for 24 months.
Precautions	Blood Group Antigen Lewis B Antibody - With BSA and Azide is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	FUT3 (HGNC:4014)
Synonyms	FT3B, LE
Function	Catalyzes the transfer of L-fucose, from a guanosine diphosphate-beta-L-fucose, to both the subterminal N-acetyl glucosamine (GlcNAc) of type 1 chain (beta-D-Gal-(1->3)-beta-D-GlcNAc) glycolipids and oligosaccharides via an alpha(1,4) linkage, and the subterminal glucose (Glc) or GlcNAc of type 2 chain (beta-D-Gal-(1->4)-beta-D- GlcNAc) oligosaccharides via an alpha(1,3) linkage, independently of the presence of terminal alpha-L-fucosyl-(1,2) moieties on the terminal galactose of these acceptors (PubMed:11058871, PubMed:12668675, PubMed:1977660). Through its catalytic activity, participates in the synthesis of antigens of the Lewis blood

	group system, i.e. Lewis a (Le(a)), lewis b (Le(b)), Lewis x/SSEA-1 (Le(x)) and lewis y (Le(y)) antigens (PubMed:11058871, PubMed:12668675, PubMed:1977660). Also catalyzes the transfer of L-fucose to subterminal GlcNAc of sialyl- and disialyl-lactotetraosylceramide to produce sialyl Lewis a (sLe(a)) and disialyl Lewis a via an alpha(1,4) linkage and therefore may regulate cell surface sLe(a) expression and consequently regulates adhesive properties to E-selectin, cell proliferation and migration (PubMed:11058871, PubMed:12668675, PubMed:27453266). Catalyzes the transfer of an L-fucose to 3'-sialyl-N-acetyllactosamine by an alpha(1,3) linkage, which allows the formation of sialyl-Lewis x structure and therefore may regulate the sialyl-Lewis x surface antigen expression and consequently adhesive properties to E-selectin (PubMed:11058871, PubMed:29593094). Prefers type 1 chain over type 2 acceptors (PubMed:7721776). Type 1 tetrasaccharide is a better acceptor than type 1 disaccharide suggesting that a beta anomeric configuration of GlcNAc in the substrate is preferred (PubMed:7721776). Lewis- positive (Le(+)) individuals have an active enzyme while Lewis-negative (Le(-)) individuals have an inactive enzyme (PubMed:1977660).
Cellular Location	Golgi apparatus, Golgi stack membrane; Single- pass type II membrane protein Note=Membrane-bound form in trans cisternae of Golgi
Tissue Location	Highly expressed in stomach, colon, small intestine, lung and kidney and to a lesser extent in salivary gland, bladder, uterus and liver.

Background

The Lewis histo-blood group system comprises a set of fucosylated glycosphingolipids that are synthesized by exocrine epithelial cells and circulate in body fluids. The glycosphingolipids function in embryogenesis, tissue differentiation, tumor metastasis, inflammation, and bacterial adhesion. They are secondarily absorbed to red blood cells giving rise to their Lewis phenotype. This gene is a member of the fucosyltransferase family, which catalyzes the addition of fucose to precursor polysaccharides in the last step of Lewis antigen biosynthesis. It encodes an enzyme with alpha(1,3)-fucosyltransferase and alpha(1,4)-fucosyltransferase activities. Lewis blood group antigens are carbohydrate moieties structurally integrated in mucous secretions. Lewis antigen system alterations have been described in gastric carcinoma and associated lesions. Anomalous expression of Lewis B antigen has been found in some non-secretory gastric carcinomas and colorectal cancers.

References

Richman, P.I. et al. 1987. Monoclonal antibodies to human colorectal epithelium: markers for differentiation and tumour characterization. Int. J. Cancer. 39: 317-328. | Rouger, P.h., et al, eds. 1987. Proceedings of the first international work- shop on monoclonal antibodies against human red blood cells and related antigens (Paris, 1987). Blood Transfusion Immunohaematology 30: 353- 720. | Bara, J. et al. 1988. Immunochemical characterization of mucins. Polypeptide (M1) and polysaccharide (A and Leb) antigens. Biochem. J. 254: 185-193. | Torrado J, Correa P, Ruiz B, Bernardi P, Zavala D, Bara J. Lewis antigen alterations in gastric cancer precursors. Gastroenterology. 1992 Feb;102(2):424-30. | Creuzot-Garcher C, Guerzider V, Assem M, Bron AM, Delannoy P, Bara. Alteration of sialyl Lewis epitope expression in pterygium. J.Invest Ophthalmol Vis Sci. 1999 Jul;40(8):1631. |