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(54) Title: 32132, A NOVEL FUCOSYLTRANSFERASE FAMILY MEMBER AND USES THEREFOR

(57) Abstract: The invention provides isolated nucleic acids molecules, designated 32132 nucleic acid molecules, which encode novel fucosyltransferase family members. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 32132 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which a 32132 gene has been introduced or disrupted. The invention still further provides isolated 32132 proteins, fusion proteins, antigenic peptides and anti-32132 antibodies. Diagnostic methods utilizing compositions of the invention are also provided.

INTERNATIONAL SEARCH REPORT

Inter. nal Application No
PCT/US 01/13805

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12N15/54 C12N9/10 C12N5/10 C07K16/40 G01N33/68
C12Q1/68 A61K38/43

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EMBL, EPO-Internal, WPI Data, PAJ, BIOSIS, MEDLINE, CHEM ABS Data, EMBASE, SCISEARCH, LIFESCIENCES

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL 'Online! EBI; AC: AC022400, 4 February 2000 (2000-02-04) SMITH DR: "Homo sapiens chromosome 10 clone RP11-574K11" XP002189870 region: 129830-130900 abstract --- DATABASE EMBL 'Online!	1,2,8,9
X	EBI; AC: AC037447, 9 February 2000 (2000-02-09) BIRREN B ET AL: "Homo sapiens chromosome 2 clone RP11-459P11 map 2" XP002189871 region 68000-69070 abstract --- -/--	1,2,8,9

[X] Further documents are listed in the continuation of box C. [ ] Patent family members are listed in annex.

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11 February 2002	01/03/2002

Name and mailing address of the ISA	Authorized officer
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL 'Online! EBI; AC: AI990404, 9 September 1999 (1999-09-09) STRAUSBERG R: "ws20h09.x1 NCI_CGAP_GC6 Homo sapiens cDNA clone" XP002189872 abstract --- DATABASE EMBL 'Online! EBI; AC: AI172124, 8 October 1998 (1998-10-08) LEE NH ET AL: "EST218119 Normalized rat muscle, Bento Soares Rattus sp. cDNA clone RMUBV23 3' end" XP002189873 abstract	1,2,8,9
X	DATABASE EMBL 'Online! EBI; AC: AI172124, 8 October 1998 (1998-10-08) LEE NH ET AL: "EST218119 Normalized rat muscle, Bento Soares Rattus sp. cDNA clone RMUBV23 3' end" XP002189873 abstract --- STAUDACHER E ET AL: "FUCOSE IN N-GLYCANS: FROM PLANT TO MAN" BIOCHIMICA ET BIOPHYSICA ACTA, AMSTERDAM, NL, vol. 1473, no. 1, 1999, pages 216-236, XP000921407 ISSN: 0006-3002 the whole document, in particular p.216-221	1,2,8,9
A	STAUDACHER E ET AL: "FUCOSE IN N-GLYCANS: FROM PLANT TO MAN" BIOCHIMICA ET BIOPHYSICA ACTA, AMSTERDAM, NL, vol. 1473, no. 1, 1999, pages 216-236, XP000921407 ISSN: 0006-3002 the whole document, in particular p.216-221 --- DATABASE EMBL 'Online! EBI; AC: AK014029, 8 February 2001 (2001-02-08) ADACHI J ET AL. : "Mus musculus 13 days embryo head cDNA, alpha-(1,3)-fucosyltransferase" XP002189874 abstract	
P,X	DATABASE EMBL 'Online! EBI; AC: AK014029, 8 February 2001 (2001-02-08) ADACHI J ET AL. : "Mus musculus 13 days embryo head cDNA, alpha-(1,3)-fucosyltransferase" XP002189874 abstract --- DATABASE EMBL 'Online! EBI; AC: BG282610, 23 February 2001 (2001-02-23) STRAUSBERG R: "602406279F1 NIH_MGC_91 Homo sapiens cDNA clone" XP002189875 abstract	1,2,8,9
P,X	DATABASE EMBL 'Online! EBI; AC: BG282610, 23 February 2001 (2001-02-23) STRAUSBERG R: "602406279F1 NIH_MGC_91 Homo sapiens cDNA clone" XP002189875 abstract --- DATABASE EMBL 'Online! EBI; AC: BE911642, 1 October 2000 (2000-10-01) STRAUSBERG R: "601663326F1 NCI_CGAP_Mam1 Mus musculus cDNA clone " XP002189876 abstract	1,2,8,9
P,X	DATABASE EMBL 'Online! EBI; AC: BE911642, 1 October 2000 (2000-10-01) STRAUSBERG R: "601663326F1 NCI_CGAP_Mam1 Mus musculus cDNA clone " XP002189876 abstract --- -/--	1,2,8,9

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
P,X	DATABASE EMBL 'Online! EBI; AC: AW773285, 7 May 2000 (2000-05-07) NEIMAN PE AND RUDDELL AR: "EST00191 DT40subNB Gallus gallus cDNA clone 4D7" XP002189877 abstract ---	1,2,8,9
P,X	DATABASE EMBL 'Online! EBI; AC: BE140006, 1 July 2000 (2000-07-01) NEIMAN PE AND RUDDELL AR: "EST00509 DTsubNB Gallus gallus cDNA clone 10F9" XP002189878 abstract -----	1,2,8,9

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