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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CARBOHYDRATE-MODIFYING ENZYMES

(57) Abstract: The invention provides human carbohydrate-modifying enzymes (CME) and polynucleotides which identify and encode CME. The invention also provides expression vectors, host cells, antibodies, agonists, and antagonists. The invention also provides methods for diagnosing, treating, or preventing disorders associated with expression of CME.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC 7 C12N9/00 C12N15/00		
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)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MÜNSTER ANJA-K ET AL: "Mammalian cytidine 5'-monophosphate N-acetylneuraminic acid synthetase: A nuclear protein with evolutionarily conserved structural motifs." PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES, vol. 95, no. 16, 4 August 1998 (1998-08-04), pages 9140-9145, XP002153786 ISSN: 0027-8424 the whole document	1-11,14
A	--- WO 94 25061 A (GLYKO INC) 10 November 1994 (1994-11-10) abstract examples 1,3,5 --- -/--	1-23
☒ Further documents are listed in the continuation of box C. ☒ Patent family members are listed in annex.		
° Special categories of cited documents :		
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family		
Date of the actual completion of the international search 27 November 2000		Date of mailing of the international search report 05. 3. 01
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer Panzica, G

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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.
A	WO 90 07573 A (GENZYME CORP) 12 July 1990 (1990-07-12) abstract page 4, line 7 - line 12 ---	1-23
A	WO 94 14472 A (WICKS IAN ;CARSON DENNIS A (US); UNIV CALIFORNIA (US)) 7 July 1994 (1994-07-07) abstract examples ---	1-23
A	WO 94 23070 A (NEW YORK BLOOD CENTER INC) 13 October 1994 (1994-10-13) examples ---	1-23
A	EP 0 893 506 A (SEIKAGAKU KOGYO CO LTD) 27 January 1999 (1999-01-27) the whole document ---	1-23
A	EP 0 737 745 A (INST OF PHYSICAL & CHEMICAL RE) 16 October 1996 (1996-10-16) abstract page 21, line 5 - line 12 examples ---	1-23
A	NEHES V L ET AL: "HUMAN LYSOSOMAL ALPHA-MANNOSIDASE: ISOLATION AND NUCLEOTIDE SEQUENCE OF THE FULL-LENGTH CDNA1" BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS,US,ACADEMIC PRESS INC. ORLANDO, FL, vol. 200, no. 1, 15 April 1994 (1994-04-15), pages 239-245, XP000647751 ISSN: 0006-291X the whole document -----	1-23

INTERNATIONAL SEARCH REPORT

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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 16, 19 and 22 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-23 (in part)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-23 (in part)

An isolated polypeptide comprising an aminoacid sequence as set forth in Sel.Id.No.1, encoded by the ncleic acid sequence as set forth in Seq.Id.No.6

2. Claims: 1-23 (in part)

An isolated polypeptide comprising an aminoacid sequence as set forth in Sel.Id.No.2, encoded by the ncleic acid sequence as set forth in Seq.Id.No.7.

3. Claims: 1-23 (in part)

An isolated polypeptide comprising an aminoacid sequence as set forth in Sel.Id.No.3, encoded by the ncleic acid sequence as set forth in Seq.Id.No.8.

4. Claims: 1-23 (in part)

An isolated polypeptide comprising an aminoacid sequence as set forth in Sel.Id.No.4, encoded by the ncleic acid sequence as set forth in Seq.Id.No.9.

5. Claims: 1-23 (in part)

An isolated polypeptide comprising an aminoacid sequence as set forth in Sel.Id.No.5, encoded by the ncleic acid sequence as set forth in Seq.Id.No.10.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9425061 A	10-11-1994	NONE	
WO 9007573 A	12-07-1990	AT 138686 T CA 2006709 A DE 68926569 D DE 68926569 T EP 0401362 A ES 2093642 T JP 2893481 B US 5549892 A US 5236838 A	15-06-1996 23-06-1990 04-07-1996 26-09-1996 12-12-1990 01-01-1997 24-05-1999 27-08-1996 17-08-1993
WO 9414472 A	07-07-1994	NONE	
WO 9423070 A	13-10-1994	AU 688310 B AU 6417594 A CA 2159083 A EP 0694081 A JP 8508406 T	12-03-1998 24-10-1994 13-10-1994 31-01-1996 10-09-1996
EP 0893506 A	27-01-1999	US 6162908 A WO 9738113 A	19-12-2000 16-10-1997
EP 0737745 A	16-10-1996	JP 2895739 B JP 7255472 A JP 2854803 B JP 7289254 A US 5854042 A WO 9518217 A JP 2839232 B JP 7227280 A	24-05-1999 09-10-1995 10-02-1999 07-11-1995 29-12-1998 06-07-1995 16-12-1998 29-08-1995