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[Continued on next page]

(54) Title: PEPTIDYL-TRNA HYDROLASE OF ENTEROCOCCUS FAECALIS



(57) Abstract: The present invention relates to novel drug targets for pathogenic bacteria. Accordingly, the invention provides purified protein comprising the amino acid sequence set forth in SEQ ID NO: 4. The invention also provides biochemical and biophysical characteristics of the polypeptides of the invention.



CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 03/01128

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/55 C12N9/16 C12N15/62 C12N5/10 G01N33/50

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 G01N

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)

EPO-Internal, WPI Data, PAJ, SEQUENCE SEARCH, BIOSIS, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	WO 98 50555 A (HUMAN GENOME SCIENCES, INC.) 12 November 1998 (1998-11-12) contig ID NO: 338 ORF ID NO: 9 the whole document see especially: page 39, line 30 - line 31 page 42, line 9 - line 17 page 151; table 2 and SEQ ID NO: 338 page 1443 -page 1450 --- -/--	1-41, 55-69

☒ 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

26 February 2004

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15. 03. 2004

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 03/01128

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
L	DATABASE EMBL, HEIDELBERG, FRG [Online] SEQ ID NO: 338 of US2002120116, 18 December 2002 (2002-12-18) Database accession no. ABS99070 XP002271679 derived from <i>E. faecalis</i> cited to provide information on the relevant sequence disclosed in US2002120116 the whole document	
P,X	-& US 2002/120116 A1 (KUNSCH, C.A; DILLON, P.J. & BARASH, S.) 29 August 2002 (2002-08-29) contig ID NO: 338 ORF ID NO: 9 the whole document see especially: page 17, paragraph 183 page 18, paragraph 197 and page 66; table 2	1-41, 55-69
L	--- DATABASE EMBL, HEIDELBERG, FRG [Online] SEQ ID NO: 1440 of US6617156, 19 December 2003 (2003-12-19) Database accession no. AR395425 XP002271680 derived from <i>E. faecalis</i> cited to provide information on the relevant sequence disclosed in US6617156 the whole document	
E	-& US 6 617 156 B1 (DOUCETTE-STAMM, L.A. & BUSH, D.) 9 September 2003 (2003-09-09) SEQ ID NO: 1440 the whole document see especially: column 165 -column 166; table 2 and column 343 -column 344; table 3	1,26
A	--- DATABASE EMBL, HEIDELBERG, FRG [Online] 1 October 1994 (1994-10-01) OGASAWARA, N. ET AL.: "Peptidyl-tRNA hydrolase (EC 3.1.1.29) (PTH) (Stage V sporulation protein C)" Database accession no. P37470 XP002271681 derived from <i>B. subtilis</i> the whole document --- -/--	1-41, 55-69

INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 03/01128

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DATABASE EMBL, HEIDELBERG, FRG [Online] 1 March 1992 (1992-03-01) GARCIA-VILLEGAS, M.R. ET AL.: "Peptidyl-tRNA hydrolase (EC 3.1.1.29) (PTH)" Database accession no. P23932 XP002271682 derived from Escherichia coli the whole document	1-41, 55-69
A	SCHMITT, E. ET AL.: "Crystal structure at 1.2 Å resolution and active site mapping of Escherichia coli peptidyl-tRNA hydrolase" EMBO JOURNAL, vol. 16, no. 15, 1 August 1997 (1997-08-01), pages 4760-4769, XP002245990 cited in the application the whole document see especially: page 4764; table II	1-41, 55-69
A	FROMANT, M. ET AL.: "Receptor Site for the 5'-Phosphate of Elongator tRNAs Governs Substrate Selection by Peptidyl-tRNA Hydrolase" BIOCHEMISTRY, vol. 38, no. 16, 20 April 1999 (1999-04-20), pages 4982-4987, XP002271678 the whole document see especially: page 4984; table 1 and page 4985; table 2	1-41, 55-69
A	BRENNER, S.E.: "A tour of structural genomics" NATURE REVIEWS GENETICS, vol. 2, no. 10, October 2001 (2001-10), pages 801-809, XP002250126 the whole document	1-41, 55-69
A	ABOLA, E. ET AL.: "Automation of X-ray crystallography" NATURE STRUCTURAL BIOLOGY, vol. 7 suppl., November 2000 (2000-11), pages 973-977, XP001062873 the whole document	1-41, 55-69

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/CA 03/01128

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	BAGBY, S. ET AL.: "Optimization of Protein Solubility and Stability for Protein Nuclear Magnetic Resonance" METHODS IN ENZYMOLOGY, vol. 339, 2001, pages 20-41, XP001152932 the whole document	1-41, 55-69
A	KRAFT, P. ET AL.: "Infrared, Surface-Assisted Laser Desorption Ionization Mass Spectrometry on Frozen Aqueous Solutions of Proteins and Peptides Using Suspensions of Organic Solids" JOURNAL OF THE AMERICAN SOCIETY FOR MASS SPECTROMETRY, vol. 9, no. 9, September 1998 (1998-09), pages 912-924, XP004149186 the whole document	1-41, 55-69

INTERNATIONAL SEARCH REPORT

national application No.
PCT/CA 03/01128

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.: 42-54, 71-74 (all completely)
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(v) PCT - Presentation of information
2. ☒ Claims Nos.: 70 (completely)
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:
see FURTHER INFORMATION sheet PCT/ISA/210
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.:

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

Continuation of Box I.2

Claims Nos.: 70 (completely)

Present claim 70 relates to a compound defined by reference to a desirable characteristic or property, namely being "an inhibitor of peptidyl-tRNA hydrolase activity ... having been identified during a computer-assisted process".

The claim covers all compounds having this characteristic or property, whereas the application provides no support within the meaning of Article 6 PCT and/or no disclosure within the meaning of Article 5 PCT for such compounds. In the present case, the claim so lacks support, and the application so lacks disclosure, that a meaningful search is impossible. Independent of the above reasoning, the claim also lacks clarity (Article 6 PCT). An attempt is made to define the compound by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search impossible. Consequently, no search has been carried out for claim 70.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA 03/01128

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9850555	A	12-11-1998	
		AU 735444 B2	05-07-2001
		AU 7279398 A	27-11-1998
		AU 745787 B2	28-03-2002
		AU 7280598 A	27-11-1998
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		JP 2002529046 T	03-09-2002
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US 6617156	B1	09-09-2003	NONE
