

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
6 July 2006 (06.07.2006)

PCT

(10) International Publication Number
WO 2006/070944 A3

(51) International Patent Classification:

C07K 14/34 (2006.01) C12P 13/14 (2006.01)
C07K 14/345 (2006.01)

(74) Agents: KAWAGUCHI, Yoshiyuki et al.; Acropolis 21
Building 6th floor, 4-10, Higashi Nihonbashi 3-chome,
Chuo-ku, Tokyo 1030004 (JP).

(21) International Application Number:

PCT/JP2005/024280

(22) International Filing Date:

28 December 2005 (28.12.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2004-378615	28 December 2004 (28.12.2004)	JP
2004-378604	28 December 2004 (28.12.2004)	JP
2005-262087	9 September 2005 (09.09.2005)	JP

(71) Applicant (for all designated States except US): **AJINOMOTO CO., INC.** [JP/JP]; 15-1, Kyobashi 1-chome,
Chuo-ku, Tokyo 1048315 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **NAKAMURA, Jun**
[JP/JP]; c/o AJINOMOTO CO., INC., 1-1, Suzuki-cho,
Kawasaki-ku, Kawasaki-shi, Kanagawa 2108681 (JP).
HIRANO, Seiko [JP/JP]; c/o AJINOMOTO CO., INC.,
1-1, Suzuki-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa
2108681 (JP). **ITO, Hisao** [JP/JP]; c/o AJINOMOTO
CO., INC., 1-1, Suzuki-cho, Kawasaki-ku, Kawasaki-shi,
Kanagawa 2108681 (JP).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG,
KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY,
MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO,
NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,
SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT,
RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

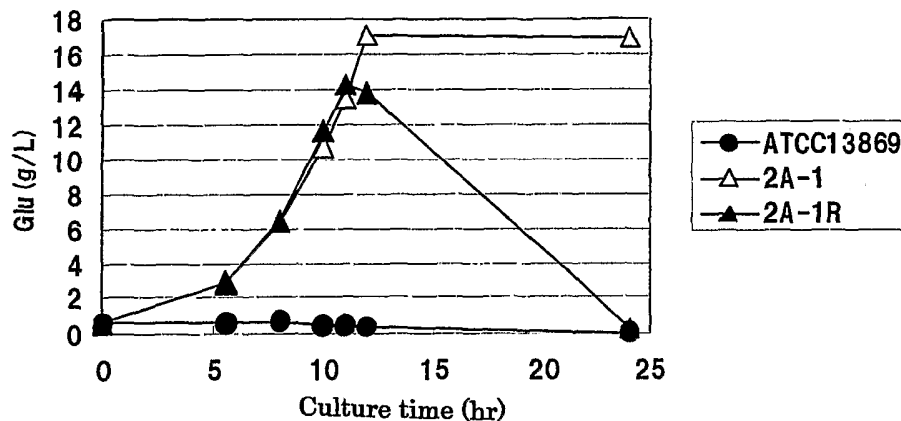
Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
14 September 2006

[Continued on next page]

(54) Title: L-GLUTAMIC ACID-PRODUCING MICROORGANISM AND A METHOD FOR PRODUCING L-GLUTAMIC ACID



(57) Abstract: A coryneform bacterium that is modified by using a *yggB* gene so that L-glutamic acid-producing ability is enhanced as compared to a non-modified strains is cultured in a medium to cause accumulation of L-glutamic acid in the medium or bacterial cells, and L-glutamic acid is collected from the medium or cells.



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.

INTERNATIONAL SEARCH REPORT

International application No
PCT/JP2005/024280

A. CLASSIFICATION OF SUBJECT MATTER

INV. C07K14/34 C07K14/345 C12P13/14

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)

C12P C07K

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, PAJ, BIOSIS, Sequence Search, WPI Data, EMBASE, MEDLINE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KALINOWSKI J ET AL: "THE COMPLETE CORYNEBACTERIUM GLUTAMICUM ATCC 13032 GENOME SEQUENCE AND ITS IMPACT ON THE PRODUCTION OF L-ASPARTATE-DERIVED AMINO ACIDS AND VITAMINS" JOURNAL OF BIOTECHNOLOGY, ELSEVIER SCIENCE PUBLISHERS B.V., AMSTERDAM, NL, vol. 104, no. 1-3, 4 September 2003 (2003-09-04), pages 5-25, XP001184752 ISSN: 0168-1656 abstract -/--	1-3, 21, 23

☒ Further documents are listed in the continuation of Box C.

☒ See patent family 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

29 June 2006

Date of mailing of the international search report

14/07/2006

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

Pilat, D

INTERNATIONAL SEARCH REPORT

International application No
PCT/JP2005/024280

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	& DATABASE EMBL [Online] 22 January 2004 (2004-01-22), "Corynebacterium glutamicum ATCC 13032, IS fingerprint type 4-5, complete genome; segment 4/10" XP002387852 retrieved from EBI accession no. EM_PRO:BX927151 Database accession no. BX927151	
X	WO 03/046123 A (BASF AKTIENGESELLSCHAFT; ZELDER, OSKAR; POMPEJUS, MARKUS; SCHROEDER, H) 5 June 2003 (2003-06-05) table 1; sequences 339,340	1-3,21, 23
X	EP 1 108 790 A (KYOWA HAKKO KOGYO CO., LTD) 20 June 2001 (2001-06-20) sequences 1401, 4901,7063 & DATABASE EMBL [Online] 10 May 2001 (2001-05-10), "Sequence 7063 from Patent EP1108790." retrieved from EBI accession no. EM_PAT:AX127147 Database accession no. AX127147	1-3,21, 23
X	DATABASE EMBL [Online] 22 January 2003 (2003-01-22), "Novel polynucleotide." XP002387853 retrieved from EBI accession no. EM_PAT:BD163602 Database accession no. BD163602 abstract & JP 2002 191370 A (KYOWA HAKKO KOGYO CO LTD) 9 July 2002 (2002-07-09)	1-3,21, 23
X	NISHIO YOUSUKE ET AL: "Comparative complete genome sequence analysis of the amino acid replacements responsible for the thermostability of Corynebacterium efficiens." GENOME RESEARCH. JUL 2003, vol. 13, no. 7, July 2003 (2003-07), pages 1572-1579, XP002387831 ISSN: 1088-9051 abstract	1-3
	----- -/--	

INTERNATIONAL SEARCH REPORT

International application No
PCT/JP2005/024280

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	NOTTEBROCK DANIEL ET AL: "Molecular and biochemical characterization of mechanosensitive channels in <i>Corynebacterium glutamicum</i>." FEMS MICROBIOLOGY LETTERS, vol. 218, no. 2, 28 January 2003 (2003-01-28), pages 305-309, XP002387832 ISSN: 0378-1097 cited in the application table 1 -----	1-3,6-8, 12,14, 17,21

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/024280

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
 - a. type of material
 - ☒ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material
 - ☒ on paper
 - ☐ in electronic form
 - c. time of filing/furnishing
 - ☒ contained in the international application as filed
 - ☐ filed together with the international application in electronic form
 - ☒ furnished subsequently to this Authority for the purpose of search
2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/JP2005/024280

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03046123	A	05-06-2003	AU 2002365499 A1	10-06-2003
			BR 0213779 A	13-10-2004
			CN 1582300 A	16-02-2005
			DE 10154177 A1	08-05-2003
			EP 1446421 A2	18-08-2004
			US 2005003494 A1	06-01-2005
EP 1108790	A	20-06-2001	US 2002197605 A1	26-12-2002
JP 2002191370	A	09-07-2002	NONE	