(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
13 September 2001 (13.09.2001)

PCT

(10) International Publication Number
WO 01/65923 A3

(51) International Patent Classification[7]: A01K 5/02, A23K 1/00, C12N 11/00, 1/04

(21) International Application Number: PCT/GB01/01062

(22) International Filing Date: 12 March 2001 (12.03.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

0005839.6	10 March 2000 (10.03.2000)	GB
60/190,858	20 March 2000 (20.03.2000)	US

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(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

(88) Date of publication of the international search report:
7 March 2002

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.

WO 01/65923 A3

(54) Title: STORAGE AND DELIVERY OF MICRO-ORGANISMS

(57) Abstract: We describe a method of delivering a micro-organism to an animal, the method comprising providing a formulation comprising a micro-organism suspended in or on a matrix; providing a feed stream for the animal; detaching micro-organisms from the matrix; and entraining detached micro-organisms into the feed stream. An apparatus for delivering a micro-organism to an animal is also described.

INTERNATIONAL SEARCH REPORT

Inter ›nal Application No
PCT/GB 01/01062

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A01K5/02 A23K1/00 C12N11/00 C12N1/04

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 A01K A23K 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)
EPO-Internal, WPI Data, PAJ, FSTA, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,Y	EP 1 005 788 A (EPENHUYSEN CHEM NV) 7 June 2000 (2000-06-07) column 3, line 56 -column 4, line 1 claim 1	1-9
X	US 4 138 498 A (DAS NABA K) 6 February 1979 (1979-02-06) column 8, line 8 -column 9, line 29 column 10, paragraph 2 -column 11, paragraph 2; claim 1	12,15, 16, 18-22, 27-29
Y		1-9

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[X] Further documents are listed in the continuation of box C.

[X] 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	Date of mailing of the international search report
15 October 2001	23. 10. 2001

Name and mailing address of the ISA	Authorized officer
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	Rooney, K

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Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 01/01062

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 748 752 A (MICROENCAPSULATION CENTRE) 21 November 1997 (1997-11-21) page 6, line 7,8,30-35 page 7, line 1-14 claims 1,5	12,13, 16-20
X	FR 2 714 575 A (RHONE POULENC NUTRITION ANIMAL) 7 July 1995 (1995-07-07) claims 1-4,8; example 1	12,13, 15,16, 18,19
A	US 5 283 059 A (SUZUKI MASAKI ET AL) 1 February 1994 (1994-02-01) column 2, paragraph 4 column 3, line 7 -column 4, line 54 claims 1-3,7	1-22
X	EP 0 203 708 A (AGRACETUS) 3 December 1986 (1986-12-03) page 6, line 1-29 claims 1,7	23-26
X	EP 0 259 739 A (MILES LAB) 16 March 1988 (1988-03-16) claims 1-4	23,25
X	US 6 033 887 A (CHARPENTIER MONIQUE) 7 March 2000 (2000-03-07) claims 1,18; example 3	23,25,30
X	EP 0 323 782 A (SANOFI SA) 12 July 1989 (1989-07-12) page 15, line 30-45 claims 1-12; examples 1-3	23,25,26

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 01/01062

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:

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:

see additional sheet

1. [X] 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.

[X] No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-22,27-29

   This invention is directed towards methods and apparatus for providing an animal with a microorganism suspended in or on a matrix.

2. Claims: 23-26,30

   This invention relates to a method of preservation of microorganisms in the presence of lactose and preserved compositions thereof.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/GB 01/01062

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