

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
5 June 2003 (05.06.2003)

PCT

(10) International Publication Number
WO 03/045272 A3

- (51) International Patent Classification⁷: A23K 1/18, 1/12, A61K 31/734
- (21) International Application Number: PCT/NO02/00432
- (22) International Filing Date:
21 November 2002 (21.11.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2001 5875 30 November 2001 (30.11.2001) NO
2002 2893 17 June 2002 (17.06.2002) NO
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, 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, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): FMC BIOPOLYMER AS [NO/NO]; Tomtegaten 36, N-3013 Drammen (NO).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): GÅSERØD, Olav [NO/NO]; Ole Friisesvei 17, N-3053 Steinberg (NO). DESSEN, Arne [NO/NO]; Ekornveien 25, N-3440 Røyken (NO). DALMO, Roy, Ambli [NO/NO]; Fiskeribølgen 3B, N-9037 Tromsø (NO).

(74) Agent: BRYN & AARFLOT AS; P.O.Box 449, N-0104 Oslo (NO).

Published:

— with international search report

(88) Date of publication of the international search report:

12 September 2003

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: ORAL IMMUNOSTIMULATION OF MAMMALS, BIRDS, FISH AND REPTILES FROM (1-4) LINKED β-D-MAN-NURONIC ACID

(57) Abstract: An oral, immunostimulating material for mammals, birds, fish, and reptiles comprising an immunostimulating amount of an alginate having a M content of at least 40 % and an acceptable carriers.



WO 03/045272 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/NO 02/00432

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: A23K 1/18, A23K 1/12, A61K 31/734

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)

IPC7: A23K, A61K

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

SE,DK,FI,NO classes as above

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

EPO-INTERNAL, CHEM. ABS DATA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Aquaculture, Volume 177, Issues 1-4, July 1999, Jorunn Skjermo et al: "Techniques for microbial control in the intensive rearing of marine larvae", retrieved on 2003-04-15, http://www.sciencedirect.com/science?_ob=Article URL&_udi=B6T4D-3WN6GV4-1 , page 333 - page 343, see part. page 6, paragraph 2.4 and 3	1-4,8-13, 16-41
Y	--	5-7,14-15
X	Aquaculture, Volume 155, 1997, Olav Vadstein: "The use of immunostimulation in marine larviculture: possibilities and challenges", page 401 - page 417, see part. page 409 and 411	1-4,8-13, 16-41
Y	--	5-7,14-15

 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 application or patent 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

16 April 2003

Date of mailing of the international search report

22-04-2003

Name and mailing address of the ISA/
Swedish Patent Office
Box 5055, S-102 42 STOCKHOLM
Facsimile No. +46 8 666 02 86

Authorized officer

Eva Johansson/EÖ
Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.,

PCT/NO 02/00432

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6121441 A (MERETHE KAMFJORD SIMENSEN ET AL), 19 Sept 2000 (19.09.00) --	5-7,14,15
A	Fish Physiology and Biochemistry, Volume 24, L.E.C. Conceicao et al: "Effect of an immunostimulating alginate on protein turnover of turbot (<i>Scophthalmus maximus</i> L.) larvae", page 207 - page 212 --	1-41
A	US 6090793 A (ULRICH ZIMMERMANN ET AL), 18 July 2000 (18.07.00), see part. the claims --	1-41
A	US 5169840 A (MARIT OTTERLEI ET AL), 8 December 1992 (08.12.92) --	1-41
A	DATABASE WPI Week 198802 Derwent Publications Ltd., London, GB; Class C03, AN 1988-011665 & JP 62275656 A (KIMITSU KAGAKU KENKYUSHO), 30 November 1987 (1987-11-30) abstract --	1-41
A	DATABASE WPI Week 199706 Derwent Publications Ltd., London, GB; Class D13, AN 1997-059639 & JP 83 08510 A (MARUHA CORP), 26 November 1996 (1996-11-26) abstract --	1-41

INTERNATIONAL SEARCH REPORT

International application No.:

PCT/NO 02/00432

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 WPI Week 198712 Derwent Publications Ltd., London, GB; Class C03, AN 1987-084094 & JP 62036152 A (NICHIDEN KAGAKU KK), 17 February 1987 (1987-02-17) abstract -- -----	1-41

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NO02/00432**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.: **9-13, 16-20, 25-28, 35-41**
because they relate to subject matter not required to be searched by this Authority, namely:
see next sheet
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.:

Remark on Protest

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

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NO02/00432

Claims 9-13, 16-20, 25-28, 35-41 relate to methods of treatment of the human or animal body by surgery or by therapy/ diagnostic methods practised on the human or animal body/Rule 39.1.(iv). Nevertheless, a search has been executed for these claims. The search has been based on the alleged effects of the compounds/compositions.

INTERNATIONAL SEARCH REPORT

Information on patent family members

29/03/03

International application No.

PCT/NO 02/00432

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6121441 A	19/09/00	AT 230763 T	15/01/03
		AU 737398 B	16/08/01
		AU 7457698 A	08/12/98
		BR 9809279 A	03/10/00
		CN 1090193 B	04/09/02
		CN 1261375 T	26/07/00
		DE 69810609 D	00/00/00
		EP 0980391 A,B	23/02/00
		JP 2002504937 T	12/02/02
		NO 305033 B	22/03/99
		NO 972136 A	10/11/98
		WO 9851710 A	19/11/98
US 6090793 A	18/07/00	AT 150469 T	15/04/97
		DE 4204012 A	19/08/93
		DE 59305882 D	00/00/00
		DK 626974 T	23/06/97
		EP 0626974 A,B	07/12/94
		SE 0626974 T3	
		ES 2101299 T	01/07/97
		GR 3023797 T	30/09/97
		JP 3217366 B	09/10/01
		JP 7503985 T	27/04/95
WO 9316111 A	19/08/93		
US 5169840 A	08/12/92	AT 147984 T	15/02/97
		DE 69216888 D,T	12/06/97
		DK 506326 T	14/07/97
		EP 0506326 A,B	30/09/92
		SE 0506326 T3	
		JP 6087751 A	29/03/94