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

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 7 January 2010 (07.01.2010)

(10) International Publication Number WO 2010/001409 A3

(51) International Patent Classification: A61K 39/12 (2006.01) C07K 14/025 (2006.01) A61K 39/285 (2006.01)

(21) International Application Number:

PCT/IN2009/000333

(22) International Filing Date:

9 June 2009 (09.06.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

9 June 2008 (09.06.2008) 1404/CHE/2008

IN

(71) Applicant (for all designated States except BHARAT BIOTECH INTERNATIONAL LIMITED [IN/IN]; Genome Valley, Turkapally, Shameerpet, Hyderabad 500 078 (IN).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): ELLA, Krishna, Murthy [IN/IN]; Bharat Biotech International Limited, Genome Valley, Turkapally Shameerpet, Hyderabad 500 078 (IN). SUMATHY, Kandaswamy [IN/IN]; Bharat Biotech International Limited, Genome Valley, Turkapally Shameerpet, Hyderabad 500 078 (IN).
- (74) Agent: BALASUBRAHMANYAM, Lakshmi; Corporate Law Group, 1106-1107, Kailash Building, 26, K.G. Marg, New Delhi 110 001 (IN).
- **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
- (88) Date of publication of the international search report:

27 May 2010



INTERNATIONAL SEARCH REPORT

International application No PCT/IN2009/000333

A. CLASSIFICATION OF SUBJECT MATTER INV. A61K39/12 A61K3 A61K39/285 C07K14/025 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) A61K 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, BIOSIS, EMBASE, WPI Data C. DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. X TINDLE R W ET AL: "CHIMERIC HEPATITIS B 1-4.CORE ANTIGEN PARTICLES CONTAINING B- AND 7-11,14, TH-EPITOPES OF HUMAN PAPILLOMAVIRUS TYPE 16 16 E7 PROTEIN INDUCE SPECIFIC ANTIBODY AND T-HELPER RESPONSES IN IMMUNISED MICE" VIROLOGY, ACADEMIC PRESS, ORLANDO, US vol. 200, 1 January 1994 (1994-01-01), pages 547-557, XP002074501 ISSN: 0042-6822 page 548 - column 1, paragraph 2 page 548, paragraph 3 - column 2, Υ 5-6. 12 - 13, 15paragraph 4 page 553; figure 5 page 555; figure 7 page 556, last paragraph X Further documents are listed in the continuation of Box C. See patent family annex. Special categories of cited documents : "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 "A" document defining the general state of the art which is not considered to be of particular relevance invention earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to "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) 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 "O" document referring to an oral disclosure, use, exhibition or document published prior to the international filing date but later than the priority date claimed 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 25 March 2010 31/03/2010 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, Fax: (+31–70) 340–3016 Fellows, Edward

INTERNATIONAL SEARCH REPORT

International application No
PCT/IN2009/000333

C(Continua	tion). DOCUMENTS CONSIDERED TO BE RELEVANT	FC1/ 1M2009/ 000333
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Υ	WO 01/17550 A2 (SMITHKLINE BEECHAM BIOLOG [BE]; WETTENDORFF MARTINE ANNE CECIL [BE]) 15 March 2001 (2001-03-15) page 10, line 15 - line 31 page 11, line 1 - line 12 page 9, line 4 - line 14 page 30, line 5 - line 12 page 6, line 30 - line 31 page 7, line 1 - line 17 page 7, line 27 - line 30 page 8, line 6 - line 9	5-6, 12-13,15
A	WO 2007/095320 A2 (FRAUNHOFER USA INC [US]; YUSIBOV VIDADI [US]; METT VADIM [US]) 23 August 2007 (2007-08-23) page 36, paragraph 142 - page 37	15
	i	

5

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/IN2009/000333

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 0117550	A2	15-03-2001	AT	323509 T	15-05-2006
			ΑT	414533 T	15-12-2008
			AU	765245 B2	
			ΑU	7284800 A	10-04-2001
			BR	0014172 A	14-05-2002
			CA	2381047 A1	
			CN	1390136 A	08-01-2003
			CZ	20020842 A3	
			DE	60027440 T2	2 19-10-2006
			DK	1210112 T3	3 14-08-2006
			EP	1210112 A2	
			ES	2261237 T3	
			ES	2314816 T3	3 16-03-2009
			GC	0000202 A	29-03-2006
			HK	1048436 A1	27-10-2006
			HU	0202826 A2	28-12-2002
			JP	2003508494 T	04-03-2003
			MX	PA02002483 A	28-08-2002
			NO	20021115 A	30-04-2002
			NZ	517622 A	26-09-2003
			PL	353923 A1	15-12-2003
			PΤ	1210112 E	31-08-2006
			TR	200200608 T2	21-08-2002
			US	2008118527 A1	22-05-2008
			US	2005123562 A1	09-06-2005
			ZA	200201834 A	28-04-2004
WO 2007095320	A2	23-08-2007	AU	2007215082 A1	
			CA	2642056 A1	
			CN	101395174 A	25-03-2009
			EP	1984388 A2	
			JP	2009526780 T	23-07-2009
			KR	20080106434 A	05-12-2008
			US	2008279877 A1	13-11-2008