(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 31 July 2003 (31.07.2003)

PCT

(10) International Publication Number WO 03/062445 A3

(51) International Patent Classification⁷: C12Q 1/68, C12P 19/34, C07H 21/04

(21) International Application Number: PCT/US02/39564

(22) International Filing Date:

10 December 2002 (10.12.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/351,637 23 January 2002 (23.01.2002) US 10/165,410 6 June 2002 (06.06.2002) US

(71) Applicant (for all designated States except US): EPOCH BIOSCIENCES, INC. [US/US]; 21720 23rd Drive SE, Suite 150, Bothell, WA 98021 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): BELOUSOV, Yevgeniy, S. [RU/US]; 2717 144th Court SE, Mill Creek, WA 98012 (US). AFONINA, Irina, A. [US/US]; 2717 144th Court SE, Mill Creek, WA 98012 (US).

(74) Agents: KEZER, William, B. et al.; Townsend And Townsend And Crew LLP, Two Embarcadero Center, Eighth Floor, San Francisco, CA 94111 (US).

(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, SC, SD, SE, SG, 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, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

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: 18 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.

03/062445 A3

(54) Title: REAL-TIME LINEAR DETECTION PROBES: SENSITIVE 5'-MINOR GROOVE BINDER-CONTAINING PROBES FOR PCR ANALYSIS

(57) Abstract: Oligonucleotide probes/conjugates are provided along with method for their use in assays to monitor amplification wherein the signal produced does not rely on 5' nuclease digestion.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/39564

	SSIFICATION OF SUBJECT MATTER						
IPC(7) : C12Q 1/68; C12P 19/34; C07H 21/04							
US CL : 435/6, 91.2, 91.21; 536/ 24.31, 24.33 According to International Patent Classification (IPC) or to both national classification and IPC							
B. FIELDS SEARCHED							
Minimum do U.S.: 4	cumentation searched (classification system followed 35/6, 91.2, 91.21; 536/24.31, 24.33	l by classifi	cation symbols)				
Documentati	on searched other than minimum documentation to the	ne extent tha	t such documents	are include	d in the fields searched		
Electronic da Please See C	ata base consulted during the international search (national solution Sheet	me of data	pase and, where pr	acticable, s	earch terms used)		
	UMENTS CONSIDERED TO BE RELEVANT						
Category *	Citation of document, with indication, where a	ppropriate,	of the relevant pa	ssages	Relevant to claim No.		
χ	US 6,312,894 B1 (HEDGPETH et al) 06 November 2001 (6.11.2001), entire document, 1-39 especially columns 84, 112-116						
X _	US 6,492,346 B1 (HEDGPETH et al) 10 December 2002, entire document. 34-38			34-38			
Y	US 5,801,155 B1 (KUTYAVIN et al) 01 September 1998 (1.9.1998), entire document,			1-39			
Further	documents are listed in the continuation of Box C.		See patent family	annex.			
"A" document be of part	pecial categories of cited documents: t defining the general state of the art which is not considered to ticular relevance plication or patent published on or after the international filing	*X*	priority date and not i understand the princip document of particula	n conflict with le or theory ur r relevance; the annot be consid	temational filing date or the application but cited to aderlying the invention claimed invention cannot be dered to involve an inventive		
	t which may throw doubts on priority claim(s) or which is cited sh the publication date of another citation or other special reason fied)	*Y*	considered to involve combined with one or	an inventive st more other suc			
"O" document	t referring to an oral disclosure, use, exhibition or other means	-& "	document member of	-			
"P" document published prior to the international filing date but later than the			document member of	ne same patent	iamiy		
			ailing of the inter	national sea	rch report		
20 February 2003 (20.02.2003)			PO OCE	LVVV	/		
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT			d officer	4	Mr allin		
Was	shington, D.C. 20231	1	bha Chunduru		Mr. orest		
Facsimile No. (703)305-3230 Telephone No. 703-308-0196							
orm PCT/ISA	A/210 (second sheet) (July 1998)				(

	PCT/US02/39564			
INTERNATIONAL SEARCH REPORT	101/00/2/07004			
A 12 DA WAS CEARCII REI ON I				
·				
	<u> </u>			
Continuation of B. FIELDS SEARCHED Item 3:				
Biosis, Medline, Embase, Caplus, Lifesci, EAST databases search terms: MGB conjugate primer, amplification, real time PCR				
search terms: MGB conjugate primer, amplification, real time PCR				
}				

Form PCT/ISA/210 (second sheet) (July 1998)