(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 14 November 2002 (14.11.2002)

PCT

(10) International Publication Number WO 02/090992 A3

(51) International Patent Classification⁷: G01N 33/50, G12N 5/10, C12N 15/09, 15/12

(21) International Application Number: PCT/GB02/01946

(22) International Filing Date: 29 April 2002 (29.04.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

0111004.8 4 May 2001 (04.05.2001) GB

(71) Applicant (for all designated States except US): AXOR-DIA LTD. [GB/GB]; Fifth Court, Western Bank, Sheffield S10 2TN (GB).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): ANDREWS, Peter [GB/GB]; The University of Sheffield, Dpt of Biomedical Science, Western Bank, Sheffield S10 2TN (GB). DRAPER, Jon [GB/GB]; The University of Sheffield, Dpt of Biomedical Science, Western Bank, Sheffield S10 2TN (GB). WALSH, James [GB/GB]; The University of Sheffield, Dpt of Biomedical Science, Western Bank, Sheffield S10 2TN (GB).
- (74) Agent: HARRISON, Goddard, Foote; 31 St. Saviourgate, York YO1 8NQ (GB).

- (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, 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, 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, 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:
 4 December 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: SCREENING METHOD

(57) Abstract: A screening method is disclosed which enables the identification of biologically active agents which mediate their effects through the activation of genes. The method utilises promoter trap, enhancer trap and gene trap constructs, comprising a reporter molecule, which are transfected into cells which are then cloned into a cell array. The cell array is exposed to an agent(s) to be tested and the response of the cell array to the agent monitored. The method enables both the identification of agents and the genes through which the agents act.

Intern **Application No** PCT/GB 02/01946

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01N33/50 C12N5/10

C12N15/09

C12N15/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

 $\begin{array}{ccc} \text{Minimum documentation searched} & \text{(classification system followed by classification symbols)} \\ IPC & 7 & GO1N & C12N \end{array}$

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)

C. DOCUM	ENTS CONSIDERED TO BE RELEVANT	,			
Category °	Citation of document, with indication, where appropriate, of the	relevant passages	Relevant to claim No.		
Χ	WO 98 38490 A (BIODX INC ;DUNLAY R TERRY (US); GOUGH ALBERT H (US); GIULIANO KENN) 3 September 1998 (1998-09-03)		1-4, 9-14, 25-27, 29,30		
Υ	p. 10, lines 7 - 28, p. 24, line 26, line 15, examples 5, 7, 8, 6 3, 5	e 21 - p. 15			
Υ	WO 01 19855 A (AMERICAN HOME PROCORPORATION; BODINE PETER V.) 22 March 2001 (2001-03-22) p. 36, lines 1 - 15	DDUCTS	15		
X Furt	her documents are listed in the continuation of box C.	χ Patent family members are listed	in annex.		
"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 sea	arch report		

Authorized officer

Hoesel, H

3 June 2003 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

Internal Application No
PCT/GB 02/01946

		PC1/GB 02/01946	
<u> </u>	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	Relevant to claim No.	
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Helevant to claim No.	
X	WO 01 07891 A (ADAMS TERRI ; CELLOMICS INC (US); KAPUR RAVI (US)) 1 February 2001 (2001-02-01)	1-4, 9-14, 25-27, 29,30	
Y	p. 11, lines 15 - 22, p. 79, line 11 - p. 81, line 21, p. 84, line 11 - p. 86, line 15	15	
Υ	BAFICO ANNA ET AL: "Interaction of frizzled related protein (FRP) with Wnt ligands and the frizzled receptor suggests alternative mechanisms for FRP inhibition of Wnt signaling." JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 274, no. 23, 4 June 1999 (1999-06-04), pages 16180-16187, XP002243190 ISSN: 0021-9258 abstract, p. 16181, col. 1, lines 4 - 8, p. 16186, col. 2, last paragraph	15	
X	WO 97 45730 A (BIODX) 4 December 1997 (1997-12-04) 13, lines 12 - p. 14, line 11,p. 27, line 5 - p. 28, line 6, claims 1 - 8	1-9, 25-27, 29,30	

ional application No. PCT/GB 02/01946

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:
Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
2. X Claims Nos.: Claims Nos.: Decause 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: See FURTHER INFORMATION sheet PCT/ISA/210
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:
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 dld 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.: 1-19, 25-27, 29, 30 (all partially)
Remark on Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 24

Present claim 24 relate to a compound defined in terms of the screening method by which it may be identified, i.e. by generating in a cell based screening method a change in the activity/expression of a reporter molecule.

An attempt is made to define the compound by reference to a result to be achieved. This lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, in the absence of further limitations no the search has been carried out for this claim

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

Internat Application No
PCT/GB 02/01946

			
Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9838490 A	03-09-1998	US 5989835 A US 6103479 A AU 730100 B AU 6667898 A CA 2282658 C CA 2410688 A EP 0983498 A JP 2000509827 T JP 2002355090 A US 2003096322 A US 6416959 B US 6573039 B US 6548263 B AU 734704 B AU 3297197 A EP 0912892 A JP 2000512009 T	23-11-1999 15-08-2000 22-02-2001 18-09-1998 25-02-2003 03-09-1998 08-03-2000 02-08-2000 10-12-2002 22-05-2003 09-07-2002 03-06-2003 15-04-2003 21-06-2001 05-01-1998 06-05-1999 12-09-2000
WO 0119855 A	22-03-2001	AU 7131200 A BR 0014183 A CA 2383360 A CN 1387537 T CZ 20020903 A EP 1212355 A JP 2003512304 T	17-04-2001 14-05-2002 22-03-2001 25-12-2002 17-07-2002 12-06-2002 02-04-2003
WO 0107891 A	01-02-2001	US 6548263 B AU 6381100 A EP 1196774 A AU 6366200 A WO 0107889 A	15-04-2003 13-02-2001 17-04-2002 13-02-2001 01-02-2001
WO 9745730 A	04–12–1997	AU 734704 B AU 3297197 A EP 0912892 A JP 2000512009 T US 6103479 A	21-06-2001 05-01-1998 06-05-1999 12-09-2000 15-08-2000