



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : C12N 15/55, 15/12, 1/19, C12Q 1/44, 1/68	A3	(11) International Publication Number: WO 96/40939 (43) International Publication Date: 19 December 1996 (19.12.96)
(21) International Application Number: PCT/US96/10002 (22) International Filing Date: 7 June 1996 (07.06.96) (30) Priority Data: 08/481,632 7 June 1995 (07.06.95) US (60) Parent Application or Grant (63) Related by Continuation US 08/481,632 (CIP) Filed on 7 June 1995 (07.06.95) (71) Applicant (for all designated States except US): CADUS PHARMACEUTICAL CORPORATION [US/US]; 777 Old Saw Mill River Road, Tarrytown, NY 10591-6705 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): PAUL, Jeremy, I. [US/US]; 89 Depot Place, South Nyack, NY 10960 (US). BROACH, James, R. [US/US]; 6 Andrews Lane, Princeton, NJ 08540 (US). (74) Agents: VINCENT, Matthew, P. et al.; Lahive & Cockfield, 60 State Street, Boston, MA 02109 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the</i> <i>claims and to be republished in the event of the receipt of</i> <i>amendments.</i> (88) Date of publication of the international search report: 23 January 1997 (23.01.97)
(54) Title: EXPRESSION OF FUNCTIONAL VERTEBRATE PHOSPHOLIPASES IN YEAST (57) Abstract <p>Yeast cells comprising a heterologous phospholipase C protein and methods for their use in drug screening assays to identify a modulator (i.e. agonist or antagonist) of a phospholipase C are described.</p>		

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FR	France	MR	Mauritania	UZ	Uzbekistan
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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 96/10002

A. CLASSIFICATION OF SUBJECT MATTER IPC 6 C12N15/55 C12N15/12 C12N1/19 C12Q1/44 C12Q1/68		
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 6 C12N C07K G01N		
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. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, vol. 90, March 1993, pages 1804-1808, XP002018652 YOKO-O, T. ET AL.: "The Putative Phosphoinositide-Specific Phospholipase C Gene, PLC1, of the Yeast <i>Saccharomyces cerevisiae</i> is important for Cell Growth" cited in the application	1-5,7, 17,24, 29-31, 33,49,50
Y	see the whole document <div style="text-align: center;">--- -/-</div>	4,8-11, 23-25, 29-32, 40,48-50
<div style="display: flex; justify-content: space-between;"> ☒ Further documents are listed in the continuation of box C. ☒ Patent family members are listed in annex. </div>		
<div style="display: flex;"> <div style="flex: 1;"> <p>* Special categories of cited documents :</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="flex: 1;"> <p>"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</p> <p>"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</p> <p>"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.</p> <p>"&" document member of the same patent family</p> </div> </div>		
Date of the actual completion of the international search <div style="text-align: center; font-size: 1.2em;">19 November 1996</div>		Date of mailing of the international search report <div style="text-align: center; font-size: 1.2em;">29. 11. 96</div>
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		Authorized officer <div style="text-align: center; font-size: 1.2em;">Holtorf, S</div>

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/US 96/10002

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MOLECULAR AND CELLULAR BIOLOGY, vol. 15, no. 3, March 1995, pages 1431-1438, XP000609196 ARKINSTALL, S. ET AL.: "Activation of Phospholipase Cgamma in Schizosaccharomyces pombe by Coexpression of Receptor or Nonreceptor Tyrosine Kinase" cited in the application	1,4,5, 12,16, 26,49,50
Y	see the whole document	13-15, 18-21, 34-36,41
X	FEBS LETTERS, vol. 364, May 1995, pages 45-50, XP002018653 ARKINSTALL, S. ET AL.: "Mapping Regions of Galphag Interacting with PLCbetal Using Multiple Overlapping Synthetic Peptides" see the whole document	1,4-6, 27,28, 49,50
P,X	FEBS LETTERS, vol. 375, November 1995, pages 183-187, XP002018654 ARKINSTALL, S. ET AL.: "Co-Expression of the Neurokinin NK2 Receptor and G-Protein Components in the Fission Yeast Schizosaccharomyces pombe" see the whole document	1,4-6, 49,50
P,Y	see the whole document	9
Y	WO,A,95 08624 (SHIONOGI & CO, LTD.) 30 March 1995 see the whole document & EP,A,0 731 164	4,8,49, 50
Y	WO,A,92 05244 (DUKE UNIVERSITY) 2 April 1992 see the whole document	9-11,18
Y	MOLECULAR AND CELLULAR BIOLOGY, vol. 13, no. 9, September 1993, pages 5861-5876, XP000609195 FLICK, J. S. AND THORNER, J.: "Genetic and Biochemical Characterization of a Phosphatidylinositol-Specific Phospholipase C in Saccharomyces cerevisiae" cited in the application see the whole document	23-25, 29-32
3 Y	WO,A,94 23025 (CADUS PHARMACEUTICALS, INC.) 13 October 1994 see the whole document	13-15, 21,34-36

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INTERNATIONAL SEARCH REPORT

Intern: 1 Application No

PCT/US 96/10002

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	DE,A,41 38 621 (BOEHRINGER INGELHEIM INTERNATIONAL GMBH) 17 June 1993 see the whole document ---	18-20, 40,41,48
P,Y	WO,A,95 21925 (AMERICAN CYANAMID COMPANY) 17 August 1995 see the whole document ---	13-15, 18-20, 35-37, 40,41
P,Y	WO,A,95 30012 (CADUS PHARMACEUTICAL CORPORATION, INC:) 9 November 1995 see the whole document ---	13-15, 18-20, 34-37, 40,41
A	TCM, vol. 4, no. 2, 1994, pages 88-95, XP000611204 BOYER, J. ET AL.: "G-Protein-Mediated Regulation of Phospholipase C - In volvement of beta / gamma Subunits" see the whole document ---	1-11
A	BIOCHIMICA AND BIOPHYSICA ACTA, vol. 1092, 1991, pages 49-71, XP000611209 MELDRUM, E. ET AL.: "The PtdIns-PLC Superfamily and Signal Transduction" cited in the application see the whole document -----	1-50

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 96/ 10002

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:
Please see Further Information sheet enclosed.
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/US 96/ 10002

FURTHER INFORMATION CONTINUED FROM PCT/ISA/210

Remark : The wording according to the non mammalian and mammalian aspect between claims 42 and 43 is inconsistent. The search for claim 43 was performed according to the wording of claim 42.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 96/10002

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO-A-9508624	30-03-95	EP-A- 0731164	11-09-96
WO-A-9205244	02-04-92	AU-B- 652576	01-09-94
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		EP-A- 0621901	02-11-94
		JP-T- 7505046	08-06-95
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		CA-A- 2183166	17-08-95
WO-A-9530012	09-11-95	AU-A- 2635495	29-11-95