



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : C12N 15/85, A61K 49/00, A01K 67/027		A3	(11) International Publication Number: WO 00/36106 (43) International Publication Date: 22 June 2000 (22.06.00)
(21) International Application Number: PCT/US99/30080			(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, 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, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, 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), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
(22) International Filing Date: 16 December 1999 (16.12.99)			
(30) Priority Data: 60/112,646 17 December 1998 (17.12.98) US 60/152,853 8 September 1999 (08.09.99) US			
(71) Applicant: XENOCORPORATION [US/US]; 860 Atlantic Avenue, Alameda, CA 94501 (US).			
(72) Inventors: CONTAG, Pamela, R.; Xenogen Corporation, 860 Atlantic Avenue, Alameda, CA 94501 (US). ZHANG, Ning; Xenogen Corporation, 860 Atlantic Avenue, Alameda, CA 94501 (US).			
(74) Agent: SHOLTZ, Charles, K.; Xenogen Corporation, 860 Atlantic Avenue, Alameda, CA 94501 (US).			
(54) Title: NON-INVASIVE EVALUATION OF PHYSIOLOGICAL RESPONSE IN A MAMMAL			
(57) Abstract			
<p>The present invention relates to panels of reporter expression cassettes and the generation of transgenic non-human animals, wherein said reporter expression cassettes have selected control elements operable linked to reporter genes. The invention includes methods of use thereof for the identification and characterization of the effects of compounds administered to the live transgenic non-human animals.</p>			

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/30080

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C12N15/85 A61K49/00 A01K67/027

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 7 C12N A01K

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 28971 A (LINK CHRISTOPHER ;UNIV TECHNOLOGY CORP (US)) 9 July 1998 (1998-07-09) page 11, line 24 -page 12, line 8 page 13, line 26 - line 18 page 26, line 24 - line 28; claims 1-5,919; figure 1; example 3	1,41,51, 56-59
Y	page 18, line 9 - line 13 ---	1-5,26, 36-43, 47,56-59
Y	WO 98 36081 A (ANGELIS DINO A DE ;SLOAN KETTERING INST CANCER (US); MIESENBOCK GE) 20 August 1998 (1998-08-20) the whole document ---	1-5, 16-26, 36-43, 47-49, 54-59
		-/-

Further documents are listed in the continuation of box C.

Patent family members are listed in 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 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 search report

26 June 2000

03/07/2000

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

Chambonnet, F

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/30080

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 93 23533 A (TSI CORP) 25 November 1993 (1993-11-25)	21-25, 36-41, 48,54-56
Y	page 27, paragraph 1; claims page 14, line 5 -page 17, line 8; table 8 ---	1-5, 16-26, 36-43, 47-49, 51,54-56
Y	CONTAG CH, ET AL.: "Visualizing gene expression in living mammals using a bioluminescent" PHOTOCHEMISTRY AND PHOTOBIOLOGY, (1997) VOL. 66, NO. 4, PP. 523-531., XP000920570 the whole document ---	1-5, 36-43, 47,54-59
Y	MAYERHOFER, R. ET AL.: "Monitoring of spatial expression of Firefly luciferase in transformed zebrafish" JOURNAL OF BIOLUMINESCENCE AND CHEMILUMINESCENCE, vol. 10, no. 5, September 1995 (1995-09), pages 271-275, XP000920515 the whole document ---	16-20, 36-43, 47-49, 54-59
P,X	WO 99 11772 A (BROMLEY PETER ;VEZZONI PAOLO (IT); ZECCA LUIGI (IT); CLERICI LIBER) 11 March 1999 (1999-03-11) the whole document ---	1-5,38, 40-43, 51,54
P,Y	the whole document ---	1-5, 16-20, 36,38, 40-43, 51,54
X,P	WO 99 37142 A (JORGENSEN TRINE NOERGAARD ;MICHELSEN BIRGITTE KOCH (DK); NOVONORDI) 29 July 1999 (1999-07-29) the whole document ---	1,26,36, 40-42, 47,50
T	ZHANG W, CONTAG PR, MADAN A, STEVENSON DK, CONTAG CH. : "Bioluminescence for biological sensing in living mammals." ADV EXP MED BIOL., vol. 471, 1999, pages 775-778, XP000920534 the whole document -----	1,11,45

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/30080

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
WO 9828971	A	09-07-1998	AU EP	5619298 A 0948612 A	31-07-1998 13-10-1999	
WO 9836081	A	20-08-1998	EP	0981633 A	01-03-2000	
WO 9323533	A	25-11-1993	AU	4240293 A	13-12-1993	
WO 9911772	A	11-03-1999	IT AU	1294450 B 8646998 A	25-03-1999 22-03-1999	
WO 9937142	A	29-07-1999	AU	2512299 A	09-08-1999	