PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶:
A61K 51/04, 47/48 // A61K 101:02,
121:00, 123:00

(11) International Publication Number:

WO 97/26919

(43) International Publication Date:

31 July 1997 (31.07.97)

(21) International Application Number:

PCT/US97/00251

A3

(22) International Filing Date:

2 January 1997 (02.01.97)

(30) Priority Data:

60/010,495

24 January 1996 (24.01.96)

US

(71) Applicant (for all designated States except US): WARNER-LAMBERT COMPANY [US/US]; 201 Tabor Road, Morris Plains, NJ 07950 (US).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): CAPRATHE, Bradley, William [US/US]; 31450 Myrna, Livonia, MI 48154 (US). GILMORE, John, Lodge [US/US]; Apartment 178C, 3695 Greenbrier Boulevard, Ann Arbor, MI 48105 (US). HAYS, Sheryl, Jeanne [US/US]; 2729 Aspen Road, Ann Arbor, MI 48108 (US). JAEN, Juan, Carlos [US/US]; 10680 Red Maple Drive, Plymouth, MI 48170 (US). LEVINE, Harry, III [US/US]; 3790 Bradford Square Drive, Ann Arbor, MI 48103 (US).
- (74) Agents: RYAN, M., Andrea; Warner-Lambert Company, 201 Tabor Road, Morris Plains, NJ 07950 (US) et al.

(81) Designated States: AL, AU, BA, BB, BG, BR, CA, CN, CZ, EE, GE, HU, IL, IS, JP, KE, KR, LC, LK, LR, LS, LT, LV, MG, MK, MN, MW, MX, NO, NZ, PL, RO, SD, SG, SI, SK, 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

With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(88) Date of publication of the international search report:
4 December 1997 (04.12.97)

(54) Title: METHOD OF IMAGING AMYLOID DEPOSITS

(57) Abstract

The present invention provides a method of imaging amyloid deposits and radiolabeled compounds useful in imaging amyloid deposits. The invention also provides a method of delivering a therapeutic agent to amyloid deposits, a method of inhibiting the aggregation of amyloid proteins to form amyloid deposits, and a method of determining a compound's ability to inhibit aggregation of amyloid proteins.

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.

AM	Armenia	GB	United Kingdom	MW	Malawi
AT'	Austria	GE	Georgia	MX	Mexico
ΑÜ	Australia	GN	Guinea	NE	Niger
BB	Barbados	GR	Greece	NL	Netherlands
BE	Belgium	HU	Hungary	NO	Norway
BF	Burkina Faso	IE	Ireland	NZ	New Zealand
BG	Bulgaria	IT	Italy	PL.	Poland
BJ	Benin	JP	Japan	PT	Portugal
BR	Brazil	KE	Kenya	RO	Romania
BY	Belarus	KG	Kyrgystan	RU	Russian Federation
CA	Canada	KP	Democratic People's Republic	SD	Sudan
CF	Central African Republic		of Korea	SE	Sweden
CG	Congo	KR	Republic of Korea	SG	Singapore
CH	Switzerland	KZ	Kazakhstan	SI	Slovenia
CI	Côte d'Ivoire	LI	Liechtenstein	SK	Slovakia
CM	Cameroon	LK	Sri Lanka	SN	Senegal
CN	China	LR	Liberia	SZ	Swaziland
CS	Czechoslovakia	LT	Lithuania	TD	Chad
CZ	Czech Republic	LU	Luxembourg	TG	Togo
DE	Germany	LV	Latvia	T.J	Tajikistan
DK	Denmark	MC	Monaco	TT	Trinidad and Tobago
EE	Estonia	MD	Republic of Moldova	UA	Ukraine
ES	Spain	MG	Madagascar	UG	Uganda
FI	Finland	ML	Mali	US	United States of America
FR	France	MN	Mongolia	UZ	Uzbekistan
GA	Gabon	MR	Mauritania	VN	Viet Nam

Intern ial Application No PCT/US 97/00251

A. CLASSIF IPC 6	FICATION OF SUBJECT MATTER A61K51/04 A61K47/48 //A61K10	01:02,A61K121:00,A61K12	3:00
According to	International Patent Classification (IPC) or to both national classifica	tion and IPC	
B. FIELDS	SEARCHED		
Minimum do IPC 6	cumentation searched (classification system followed by classificatio A61K	n symbols)	
Documentat	ion searched other than minimum documentation to the extent that su	ich documents are included in the fields sea	rched
Electronic d	ata base consulted during the international search (name of data bas	e and, where practical, search terms used)	
C. DOCUM	ENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the rele	evant passages	Relevant to claim No.
Y	LEVINE H: "THIOFLAVINE T INTERA SYNTHETIC ALZHEIMER'S DISEASE BE PEPTIDES: DETECTION OF AMYLOID A IN SOLUTION" PROTEIN SCIENCE, vol. 2, no. 3, pages 404-410, XP000613188 see abstract see page 408 - page 409, left-ha table 1	TA-AMYLOID GGREGATION	1-17
X Fur	ther documents are listed in the continuation of box C.	X Patent family members are listed	in annex.
"A" docum consi "E" earlier filing "L" docum which citatis "O" docum other "P" docum latter Date of the	nent defining the general state of the art which is not idered to be of particular relevance or document but published on or after the international date of the establish the publication date of another on or other special reason (as specified) ment referring to an oral disclosure, use, exhibition or or means of the international filling date but than the priority date claimed a actual completion of the international search	"T" later document published after the interest or priority date and not in conflict with cited to understand the principle or the invention. "X" document of particular relevance; the coannot be considered novel or cannot involve an inventive step when the description of the coannot be considered to involve an indocument is combined with one or ments, such combination being obvious in the art. "&" document member of the same patent. Date of mailing of the international sec.	i me application but becory underlying the claimed invention to be considered to coument is taken alone claimed invention mentive step when the core other such docupous to a person skilled
	14 October 1997	2 4. 10. 97 Authorized officer	
Name and	i mailing address of the ISA European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Eav. (431-70) 340-3016	Dullaart, A	

2

Intern al Application No
PCT/US 97/00251

		PCT/US 97/00251		
C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT				
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
(A CUADRO ET AL.: "Styryl and azastyryl 1,3-benzazoles with anthelmintic activity." IL FARMACO, vol. 47, no. 4, April 1992, PAVIA, IT, pages 477-488, XP002043571 see paragraph CHEMISTRY see tables 1,2	1-17		
(US 5 039 511 A (QUAY STEVEN C ET AL) 13 August 1991 see abstract see examples	1-17		
1	US 4 454 107 A (ROLLESTON RICHARD E) 12 June 1984 see abstract see claims 1-4,9-12	1-17		
'	WO 95 06469 A (CANCER RES CAMPAIGN TECH;STEVENS MALCOLM FRANCIS GRAHAM (GB); MCC) 9 March 1995 see abstract see examples	1-17		
(NOBUHIRO KURAMOTO: "SYNTHESIS OF AMPHIPHILIC BENZOTHIAZOLIUM AZO DYES AND BEHAVIOR OF THEIR MONOLAYERS ON A WATER SURFACE" DYES AND PIGMENTS, vol. 21, no. 3, pages 159-171, XP000372883 see examples	1-17		
,	PETERS A T ET AL: "5,6-(6,7-)DICHLOROBENZOTHIAZOLYLAZO DYES FOR SYNTHETIC-POLYMER FIBRES" DYES AND PIGMENTS, vol. 18, no. 2, pages 115-123, XP000268097 see examples	1-17		
	HARTMANN H ET AL: "NUCLEOPHILIC SUBSTITUTION ON ARYLAZO COMPOUNDS: PART IV. REACTIONS OF CHLORO-SUBSTITUTED ARYLAZONAPHTHALENES WITH PRIMARY AND SECONDARY AMINES" DYES AND PIGMENTS, vol. 16, no. 2, pages 119-136, XP000208792 see examples	1-17		
	-/			

2

Intern val Application No PCT/US 97/00251

	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	Delayant to alsim his
ategory °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	WO 94 25029 A (JANSSEN PHARMACEUTICA NV;CLINCKE GILBERT HENRI CAMIEL (BE); TRITS) 10 November 1994 see abstract see examples	1-17

PCT/US 97/00251

Boxi	Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)
This Inte	emational Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1. X	Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely: see FURTHER INFORMATION sheet PCT/ISA/210
2. X	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: 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 inte	mational Searching Authonty 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 o	The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.

PCT/ISA/ 210 FURTHER INFORMATION CONTINUED FROM

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

Claims Nos.: 1-17 in part

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:

In view of the large number of compounds, which are defined by the general definition in the independent claims, the search had to be restricted for economic reasons. The search was limited to the compounds for which pharmacological data was given and/or the compounds mentioned in the claims, and to the general idea underlying the application (see guidelines, Chapter III, paragraph 2.3).

Remark: Although claim(s) 1-4 are directed to a diagnostic method practised on the human/animal body, and claims 5-12 to a method of treatment of the human/animal body, a search has been carried out, based on the alleged effects of the compound/composition.

information on patent family members

Interr nai Application No
PCT/US 97/00251

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5039511 A	13-08-91	US 5008099 A AU 620327 B AU 1441988 A CA 1302403 A DE 3874187 A EP 0287909 A JP 63290858 A US 4933156 A	16-04-91 20-02-92 13-10-88 02-06-92 08-10-92 26-10-88 28-11-88 12-06-90
US 4454107 A	12-06-84	CA 1230342 A CA 1222692 A EP 0107292 A JP 1705690 C JP 3074211 B JP 59065055 A	15-12-87 09-06-87 02-05-84 27-10-92 26-11-91 13-04-84
WO 9506469 A	09-03-95	AU 7504994 A CA 2170508 A EP 0721336 A JP 9501944 T	22-03-95 09-03-95 17-07-96 25-02-97
WO 9425029 A	10-11-94	AU 6678594 A CA 2160365 A EP 0696195 A HU 73634 A JP 8509477 T ZA 9402850 A	21-11-94 10-11-94 14-02-96 28-08-96 08-10-96 25-10-95