

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
6 November 2008 (06.11.2008)

PCT

(10) International Publication Number
WO 2008/134618 A3

(51) International Patent Classification:

A61K 51/00 (2006.01) A61K 31/426 (2006.01)
A61K 31/44 (2006.01) A61B 5/055 (2006.01)
A61K 49/00 (2006.01)

(21) International Application Number:

PCT/US2008/061742

(22) International Filing Date: 28 April 2008 (28.04.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/924,053 27 April 2007 (27.04.2007) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (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:
24 December 2008

(54) Title: NOVEL IMAGING TRACERS FOR EARLY DETECTION AND TREATMENT OF AMYLOID PLAQUES CAUSED BY ALZHEIMER'S DISEASE AND RELATED DISORDERS

(57) Abstract: The present invention relates to compounds and methods for imaging and treating Alzheimer's disease or an amyloidosis-associated pathological condition that utilize a novel amyloid imaging tracer for detecting amyloid deposits in a subject suffering from these conditions. In certain embodiments, the invention relates to [N-2[18F]fluoropropyl]-2-(4'-(methylamino)-phenyl)-6-hydroxybenzothiazole (F-18MHT) and dimers thereof.



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A. CLASSIFICATION OF SUBJECT MATTER*A61K 51/00(2006.01)i, A61K 31/44(2006.01)i, A61K 49/00(2006.01)i, A61K 31/426(2006.01)i, A61B 5/055(2006.01)i*

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 8 A61K 51/00, 31/44, 48/00, 31/426, A61B 5/055, A61M 36/14

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 practicable, search terms used)

eKIPASS(KIPO internal), PubMed, JPO, USPTO, Google

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,696,039 B2 (HANK F. KUNG et. al) 24 FEBRUARY 2004 See Abstract, Fig. 1A, 1B, Column 1 line 29 - Column 3 line 34	1 - 46
A	US 2004-0204344 A1 (XUDONG HUANG) 14 OCTOBER 2004 See Abstract, Fig. 4A, 4B, Claims 61 and 66	1 - 46
A	Siegemund T. et al, 'Thioflavins released from nanoparticles target fibrillar amyloid β in the hippocampus of APP/PS1 transgenic mice', Int J Dev Neurosci. Vol. 24 pp. 195-201, 2006 Apr-May See Abstract, Pages 196 - 197 (Materials and Methods)	1 - 46

 Further documents are listed in the continuation of Box C. See patent family 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 application or patent 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 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

21 OCTOBER 2008 (21.10.2008)

Date of mailing of the international search report

21 OCTOBER 2008 (21.10.2008)

Name and mailing address of the ISA/KR

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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:

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.: 47
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 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 and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2008/061742

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6696039 B2	24.02.2004	US 6946116 B2 US 7425318 B2 US 2003-0059369 A1	20.09.2005 16.09.2008 27.03.2003
US 2004-204344 A1	14.10.2004	ZA 0506629 A WO 04064869 A3 WO 04064869 A2 US 2006-0035946 A1 RU 512642 A JP 2006515630 T2 EP 1587547 A2 CN 177426 A AU 4206956 AA	30.08.2005 22.01.2005 05.08.2004 16.02.2006 10.02.2006 01.06.2006 26.10.2005 17.05.2006 05.08.2004