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C07C 15/24 (2006.01) *A61P 35/00* (2006.01)
A61K 31/14 (2006.01)

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English

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English

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AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, 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, IR, IS, JP, KE, KG, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- of inventorship (Rule 4.17(iv))

Published:

- with international search report (Art. 21(3))

[Continued on next page]

(54) Title: N-(4-(BIS(4-(DIMETHYLAMINO)PHENYL)METHYLENE)-8-(DIMETHYLAMINO) NAPHTHALEN-1(4H)-YLIDENE)-N-METHYLMETHANAMINIUM, DERIVATIVES, AND THEIR USE IN TREATING CANCER

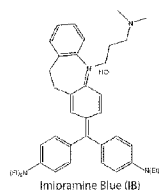
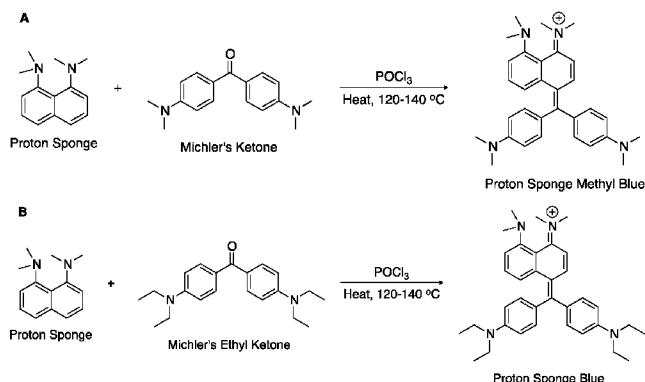


FIG. 2A-B

(57) Abstract: This disclosure relates to N-(4-(bis(4-(dimethylamino)phenyl)methylene)-8-(dimethylamino)naphthalen-1(4H)-ylidene)-N-methylmethanaminium, derivative and uses related thereto. In certain embodiments, the disclosure relates to compounds of formula I. In certain embodiments, the disclosure relates to methods of treating or preventing Nox related diseases and conditions comprising administering an effective amount of compounds disclosed herein to a subject in need thereof. In certain embodiments, the Nox related disease or condition is cancer.



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:
17 March 2016

A. CLASSIFICATION OF SUBJECT MATTER**C07C 211/64(2006.01)i, C07C 15/24(2006.01)i, A61K 31/14(2006.01)i, A61K 31/13(2006.01)i, A61P 35/00(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)

C07C 211/64; A61K 31/135; A61K 31/662; C07D 223/28; C07C 15/24; A61K 31/14; A61P 35/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords:N -(4-(bis(4-(dimethyl amino)phenyl)methylene)-8-(dimethyl amino)naphthalen-1 (4 H)-ylidene)- N -methylmethanaminium, cancer

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009-0176745 A1 (ARBISER JACK L.) 09 July 2009 See abstract, paragraphs [0003], [0097] and claims 11, 50.	1-5
X	RENATA CELI CARVALHO DE SOUZA PIETRA et al., `Triphenylmethane Derivatives Have High In Vitro and In Vivo Activity against the Main Causative Agents of Cutaneous Leishmaniasis`, PLOS ONE, 2013, Vol.8(1), e51864 See Table 1, compound TPM9 and Figure 1.	5
A	US 2002-0123531 A1 (GUILHERME LUIZ INDIG et al.) 05 September 2002 See claims.	1-5



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 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

01 February 2016 (01.02.2016)

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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.: 9-13
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 9-13 pertain to methods for treatment of the human or animal body by therapy, as well as diagnostic method, and thus relate to a subject matter which this International Searching Authority is not required, under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT, to search.
2. ☒ Claims Nos.: 7,8 and 10-13
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:
Claims 7, 8 and 10-13 are unsearchable because they are worded in reference to multiple dependent claims.
3. ☒ Claims Nos.: 6 and 9
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 fees, this Authority did not invite payment of any additional fees.
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/US2014/035470

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		EP 2237785 A4	23/11/2011
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