

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
25 August 2005 (25.08.2005)

PCT

(10) International Publication Number
WO 2005/077962 A3

(51) International Patent Classification⁷: **C07F 13/00**,
A61K 51/00

(21) International Application Number:
PCT/US2005/004872

(22) International Filing Date: 10 February 2005 (10.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/543,176 10 February 2004 (10.02.2004) US

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(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, 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, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
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TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, HU, IE, IS, IT, LT, LU, MC, NL, 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:
15 December 2005

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: CROWNED DITHIOCARBAMATE METAL COMPLEXES AND METHODS FOR THEIR USE

(57) Abstract: Compositions containing crowned dithiocarbamate metal complexes and methods of using these compositions; neu-
tral and cationic radioactive metal-nitrido complexes of crowned dithiocarbamates (DTCs) and methods of using these complexes as
radiopharmaceuticals for diagnosis and treatment of cardiovascular disorders, infectious diseases, and cancer; tripodal chelatormetal
complexes of crowned DTCs and methods of using these complexes for treating diseases such as those characterized by nitric oxide
overproduction; and methods of using crowned DTCs for heavy metal detoxification are described.



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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2005/004872

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07F13/00 A61K51/00

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 C07F

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, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE CA 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; BERRY, NEIL G. ET AL: "Heteroditopic transition metal dithiocarbamate receptors for binding cation-anion ion pairs" XP002332544 retrieved from STN Database accession no. 2003:732428 abstract & JOURNAL OF SUPRAMOLECULAR CHEMISTRY , VOLUME DATE 2002, 2(1-3), 89-92 CODEN: JSCOC9; ISSN: 1472-7862, 2003, ----- -/--	43



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

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"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

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Date of the actual completion of the international search

11 July 2005

Date of mailing of the international search report

18 10. 2005

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2005/004872

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE CA 'Online! CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; GRANELL, JAUME ET AL: "Studies on the synthesis and electrochemistry of crown ether dithiocarbamates and the molecular dynamics of bis(aza-15-crown- 5)thiuram disulfide. Crystal structure of cobalt tris'(aza-15-crown-5)dithiocarbamate!" XP002332545 retrieved from STN Database accession no. 1990:490225 abstract	43
X	& JOURNAL OF THE CHEMICAL SOCIETY, DALTON TRANSACTIONS: INORGANIC CHEMISTRY (1972-1999) , (2), 605-14 CODEN: JCOTBI; ISSN: 0300-9246, 1990, cited in the application	43
A	-& DATABASE BEILSTEIN 'Online! BEILSTEIN INSTITUTE FOR ORGANIC CHEMISTRY, FRANKFURT-MAIN, DE; 23 October 1991 (1991-10-23), XP002332644 Database accession no. BRN 3580252; BRN3582715 abstract	49
A	----- US 6 322 771 B1 (LINDEN JOEL M ET AL) 27 November 2001 (2001-11-27) example 18	1
A	----- SCHRAMM D ET AL: "SYNTHESIS OF CATIONIC HYDROTRIS(PYRAZOLYL)BORATE ZIRCONIUM COMPOUNDS" INTERNATIONAL CONFERENCE ON ORGANOMETALLIC CHEMISTRY. BOOK OF ABSTRACTS, 16 August 1998 (1998-08-16), page A150, XP002249590	42
A	----- DIAZ ET AL.: "Interactions of nitric oxide with copper (II) dithiocarbamates in aqueous solution" JOURNAL OF INORGANIC BIOCHEMISTRY, no. 95, 2003, pages 283-290, XP002335489 Scheme 1 page 288	43,48
A	----- CAMERON, B ET AL.: "Ruthenium (III) Triazacyclononane Dithiocarbamate..." INORGANIC CHEMISTRY, vol. 42, no. 13, 2003, pages 4102-4108, XP002335490 the whole document ----- -/--	43,48

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2005/004872

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	VÖGTLE, FRITZ, NEUMANN, PETER: "Stereochemie im Innern cyclischer Verbindungen: Kronenäther, Katapinate und Kryptate" CHEMIKER-ZEITUNG, vol. 97, no. 11, 1973, pages 600-610, XP002335491 7. Anwendungen und Ausblick; footnotes 139 and 43 page 608, column 2 -----	49

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2005/004872

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

Box 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:

see additional sheet

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.:

1-42, 44-47, 49

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-42,44-47,49

composition comprising crowned dithiocarbamate nitrido transition metal complex and diagnostic use thereof . Therapeutic use of crowned dithiocarbamate

1.1. claims: partly: 43, 48

composition comprising crowned dithiocarbamate transition metal complex having the structure shown in claim 43 ($p' = 1$ or 2). Therapeutic use of the composition.

2. claims: partly: 43,48

composition comprising a tripodal chelator/transition metal complex having the structure shown in claim 43 ($p' = 0$). Therapeutic use of the composition.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2005/004872

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