



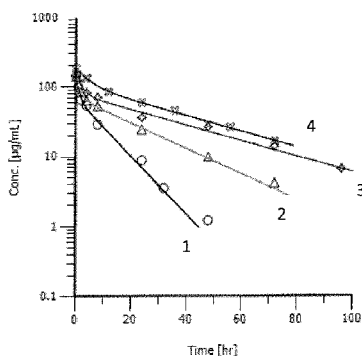
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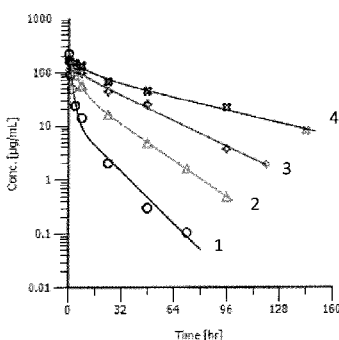
(54) Title: METHODS FOR PREVENTING OR TREATING DISORDERS BY INCREASING BIOAVAILABILITY OF IRON AND RELATED PHARMACEUTICAL FORMULATION

Figure 1

a. Mouse



b. Rat



(57) Abstract: The present disclosure relates to methods of treating, ameliorating or preventing a disorder comprising administering a therapeutically effective amount of a composition to a subject in need thereof, which composition contains a lipocalin mutein or a fragment or a variant thereof capable of increasing the bioavailability of iron in the subject.



TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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Published:

- with international search report (Art. 21(3))
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- with sequence listing part of description (Rule 5.2(a))

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12 September 2013

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/075135

A. CLASSIFICATION OF SUBJECT MATTER
INV. G01N33/68
ADD.

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)
G01N

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)
EPO-Internal, BIOSIS, EMBASE, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2011/149962 A1 (UNIV COLUMBIA [US]; BARASCH JONATHAN [US]; QIU ANDONG [US]) 1 December 2011 (2011-12-01) paragraphs [0042], [0127] paragraph [0090] - paragraph [0091]; sequence 193	1-14
X	WO 2010/033847 A1 (UNIV COLUMBIA [US]; BARASCH JONATHAN [US]; DENG SHIXIAN [US]; BAO GUAN) 25 March 2010 (2010-03-25) claims 1,7-12	1-8,14
X,P	WO 2012/022742 A1 (PIERIS AG [DE]; TRENTMANN STEFAN [DE]; MATSCHINER GABRIELE [DE]; SKERR) 23 February 2012 (2012-02-23) cited in the application claims 1,8,37-40,47; sequence 13	1-14
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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 3 April 2013	Date of mailing of the international search report 19/07/2013
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Gundlach, Björn
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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/075135

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>"Pieris Announces Preclinical In Vitro and In Vivo Data for its Anticalin™ PRS-080 Heparin Antagonist Drug Program", INTERNET CITATION, 23 May 2011 (2011-05-23), page 1, XP002661794, Retrieved from the Internet: URL:file:///C:/Documents%20and%20Settings/ ts03867/Desktop/2001-05-23-Pieris-Announce s-Preclinical-In-Vitro-and-In-Vivo-Data.ph p.htm [retrieved on 2011-10-20] the whole document</p>	1-14
A,P	<p>----- G. SRINIVASAN ET AL: "Lipocalin 2 Deficiency Dysregulates Iron Homeostasis and Exacerbates Endotoxin-Induced Sepsis", THE JOURNAL OF IMMUNOLOGY, vol. 189, no. 4, 11 July 2012 (2012-07-11) , pages 1911-1919, XP055058330, ISSN: 0022-1767, DOI: 10.4049/jimmunol.1200892 the whole document</p>	1-14
A	<p>----- HOHLBAUM ANDREAS M ET AL: "Discovery and Preclinical Characterization of a Novel Heparin Antagonist with Tunable PK/PD Properties for the Treatment of Anemia in Different Patient Populations", BLOOD, vol. 118, no. 21, November 2011 (2011-11), pages 314-315, XP008161147, & 53RD ANNUAL MEETING AND EXPOSITION OF THE AMERICAN-SOCIETY-OF-HEMATOLOGY (ASH); SAN DIEGO, CA, USA; DECEMBER 10 -13, 2011 the whole document</p> <p>-----</p>	1-14

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2012/075135

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.:
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:

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 fees, this Authority did not invite payment of 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.:

1-14

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-14

Lipocalin muteins capable of increasing iron availability
for use in treatment of patients in need thereof

2. claims: 15-17

Highly concentrated stable pharmaceutical formulation of a
lipocalin mutein

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2012/075135

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2011149962 A1	01-12-2011	EP 2576587 A1 WO 2011149962 A1	10-04-2013 01-12-2011

WO 2010033847 A1	25-03-2010	EP 2330897 A1 US 2011268818 A1 WO 2010033847 A1	15-06-2011 03-11-2011 25-03-2010

WO 2012022742 A1	23-02-2012	AU 2011290751 A1 CA 2808392 A1 CN 103154023 A EP 2606061 A1 SG 187695 A1 WO 2012022742 A1	21-02-2013 23-02-2012 12-06-2013 26-06-2013 28-03-2013 23-02-2012
