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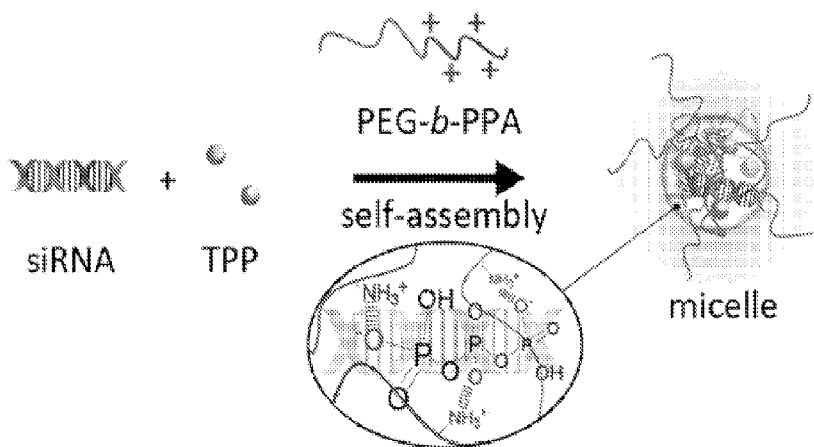
- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the
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amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

1 November 2012

(54) Title: STABILIZED POLYRIBONUCLEOTIDE NANOPARTICLES

FIGURE 2



(57) Abstract: One or more stabilized polymeric nanoparticles comprising: (a) polycationic polymers, (b) at least one or more polyribonucleotide molecules, and (c) an anionic stabilization reagent are provided. The stabilized polymeric nanoparticles exhibited high uniformity with small size, and showed increased stability in physiological ionic strength and serum containing medium. The transfection and gene silencing efficiency of the stabilized polymeric nanoparticles was markedly improved over nanoparticles which did not contain the stabilization reagent in serum-containing medium. Methods of making the stabilized polymeric nanoparticles, pharmaceutical compositions comprising same, and methods for their use are also provided.



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/020445**A. CLASSIFICATION OF SUBJECT MATTER***A61K 47/48(2006.01)i, A61K 9/16(2006.01)i, A61K 47/30(2006.01)i, A61K 48/00(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)

IPC: A61K 47; A61K 9; A61K 38; A61K 31

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)
eKOMPASS(KIPO internal), PUBMED**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2009-0226528 A1 (CZECH MICHAEL P. et al.) 10 September 2009 See abstract and whole claims.	1-2
X	WO 2009-133968 A1 (THE UNIVERSITY OF TOKYO et al.) 05 November 2009 See paragraphs [0069]-[0070],[0074],[0078]-[0081],[0091],[0121] and whole claims.	1-2
A	US 2010-0015232 A1 (BESENBACHER FLEMMING et al.) 21 January 2010 See whole document.	1-2

 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

24 AUGUST 2012 (24.08.2012)

Date of mailing of the international search report

27 AUGUST 2012 (27.08.2012)

Name and mailing address of the ISA/KR

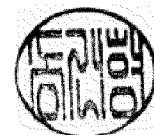
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2012/020445**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.: 14-17
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 14-17 pertain to methods for treatment or diagnostic of the human body by therapy, 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.: 3-5,9,11,15-16,19
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 3-5 are unclear since they limit the components which are not defined in claim 1 of the independent claim.
Claims 9, 11, 15-16 and 19 are unclear since it refers to each claim which is not searchable due to not being drafted in accordance with the third sentence of Rule 6.4(a).
3. Claims Nos.: 6-8,10,12-14,17-18,20
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/US2012/020445

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2009-0226528 A1	10.09.2009	CA 2704056 A1 EP 2222283 A2 JP 2011-517279 A WO 2009-058913 A2	07.05.2009 01.09.2010 02.06.2011 07.05.2009
WO 2009-133968 A1	05.11.2009	EP 2284210 A1 US 2011-0060123 A1	16.02.2011 10.03.2011
US 2010-0015232 A1	21.01.2010	AT 503469 T CA 2706124 A1 EP 2295045 A1 ES 2362376 T3 WO 2008-003329 A2	15.04.2011 10.01.2008 16.03.2011 04.07.2011 10.01.2008