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61/327,909	26 April 2010 (26.04.2010)	US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:

US	61/222,289 (CON)
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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, 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, 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, PE, PG, PH, PL, PT, RO, RS, RU, 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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[Continued on next page]

(54) **Title:** NANOPARTICLE AND POLYMER FORMULATIONS FOR THYROID HORMONE, ANALOGS, ANTAGONISTS, AND FORMULATIONS AND USES THEREOF

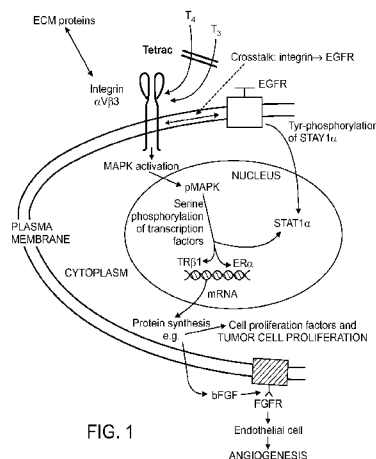


FIG. 1

(57) **Abstract:** Disclosed are methods of treating subjects having conditions related to angiogenesis including administering an effective amount of a polymeric nanoparticle form of thyroid hormone agonist, partial agonist or an antagonist thereof, to promote or inhibit angiogenesis in the subject. Nanoparticle forms of thyroid hormone or thyroid hormone analogs as well as uses thereof are also disclosed.



LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK,
SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

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Published:

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

(15) Information about Correction:

Previous Correction:
see Notice of 24 March 2011

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/038700**A. CLASSIFICATION OF SUBJECT MATTER****A61K 9/32(2006.01)i, A61K 9/20(2006.01)i, A61K 47/30(2006.01)i, A61K 38/22(2006.01)i, A61K 31/195(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)

A61K 9/32; A61P 35/00; A61K 31/192; A61K 31/198; A61K 47/48

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), GOOGLE, PUBMED

Keywords: thyroid hormone, nanoparticle, alpha-v-beta3, Tetrac, PVA, PEG

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2008-051291 A2 (ORDWAY RESEARCH INSTITUTE et al.) 02 May 2008 See abstract; figures 20A-20D; claims 1-30.	1-24
X	WO 2008-140507 A2 (CLF MEDICAL TECHNOLOGY ACCELERATION et al.) 20 November 2008 See abstract; claims 1-18.	1-24
X	WO 2006-031922 A2 (ORDWAY RESEARCH INSTITUTE et al.) 23 March 2006 See abstract; figures 20A-20D; claims 22-40.	1-24
A	BERGH, J.J. et al., "Integrin alpha-v-beta3 contains a cell surface receptor site for thyroid hormone that is linked to activation of mitogen-activated protein kinase and induction of angiogenesis". 2005 Endocrinology 146(7): 2864-2871. See the whole document.	1-24



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 MARCH 2011 (21.03.2011)

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Name and mailing address of the ISA/KR

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2010/038700**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.: 25-41
because they relate to subject matter not required to be searched by this Authority, namely:
The subject-matter of claims 25-41 pertain to the method for treatment of the human body by therapy, as well as diagnostic methods, and thus relate to a subject matter which this International Searching Authority is not required to search under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT.
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:

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/US2010/038700

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2008-051291 A2	02.05.2008	AU 2007-309727 A1 CA 2648243 A1 EP 2018186 A2 JP 2009-533453 A WO 2008-051291 A3 WO 2008-051291 A3	02.05.2008 02.05.2008 28.01.2009 17.09.2009 02.05.2008 24.12.2008
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