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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, QA, RO, RS, RU, RW, 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))

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))

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

4 April 2013

(54) Title: A NUTRITIONAL APPROACH TO THE CONTROL OF ANEMIA, DIABETES AND OTHER DISEASES OR CONDITIONS AND PREVENTION OF ASSOCIATED COMORBID STATES WITH THE USE OF ERGOTHIONEINE

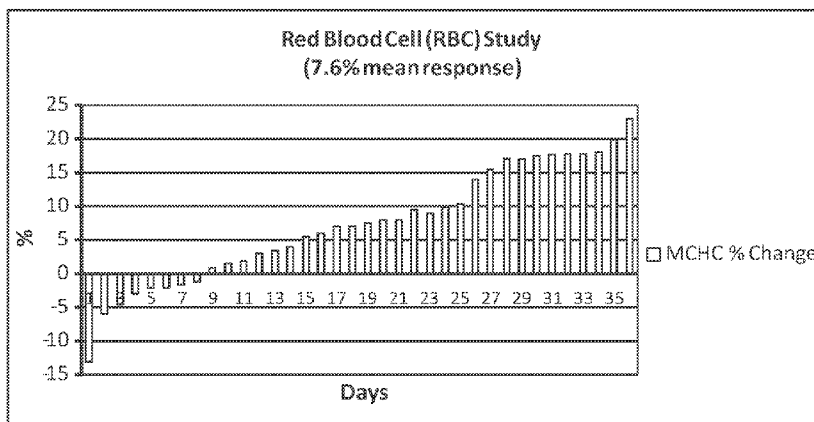


FIGURE 3

(57) Abstract: Nutritional products, compositions, pharmaceutical preparations and methods of use are disclosed for the prevention, suppression and treatment of anemia and/or diabetes and its various associated comorbidities. Uses of Ergothioneine to neutralize free radicals and/or cytokines, reduce oxidative stress, prevent inflammation, stimulate red blood cell production with increased levels of hemoglobin, and/or stabilize iron in its normal 2+ charge for proper oxygen binding and carrying are further disclosed. The extraction of Ergothioneine from whole food sources and bacterium for use in nutritional products, compositions, pharmaceutical preparations and treatments is also disclosed.

WO 2012/174035 A3

A. CLASSIFICATION OF SUBJECT MATTER*A61K 31/592(2006.01)i, A61K 31/593(2006.01)i, A61K 36/07(2006.01)i, A61P 3/10(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 31/592; A61K 33/04; A61K 35/12; A61K 31/415; A61K 31/385; A61K 36/06; A61K 35/78; A61P 25/28; A61K 35/70; A61K 38/06

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) & Keywords: anemia, diabetes, ergothioneine, vitamin D, erythropoietin, antioxidant, phytonutrient

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2011-0091579 A1 (HAUSMAN, M. S.) 21 April 2011 See claims 1, 3, 4, 6, and 12.	15-19
A	US 2011-0091433 A1 (ABULJADAYEL, I. M. S. S.) 21 April 2011 See claims 1, 2, 9, 20, 21, 23-25, 28, and 29.	15-19
A	US 2001-0021397 A1 (MIRSKY, N. et al.) 13 September 2001 See claims 12-16.	15-19
A	WO 03-099277 A1 (OXIS INTERNATIONAL, INC.) 04 December 2003 See claims 1, 6, and 7.	15-19
A	US 2002-0110604 A1 (BABISH, J. G. et al.) 15 August 2002 See claims 1, 6, and 10.	15-19
A	US 2005-0226947 A1 (KERN, D.) 13 October 2005 See claims 1, 14, 26, 41, and 43.	15-19

 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

28 JANUARY 2013 (28.01.2013)

Date of mailing of the international search report

29 JANUARY 2013 (29.01.2013)

Name and mailing address of the ISA/KR

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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.: 1-14
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 1-14 pertain to methods for treatment 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.:
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/US2012/042131

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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