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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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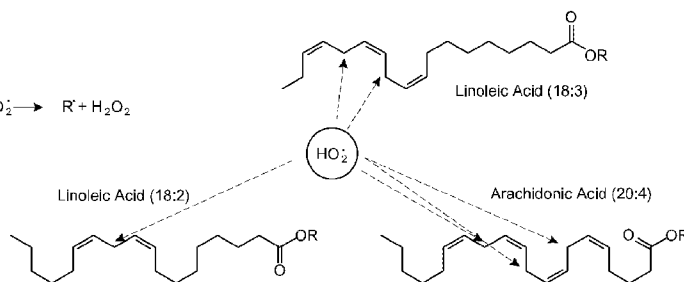
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

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(54) Title: IMPAIRED ENERGY PROCESSING DISORDERS AND MITOCHONDRIAL DEFICIENCY

FIG. 1A



(57) Abstract: Some aspects of the invention provide for a method of treating Impaired Energy Processing Disorders and Mitochondrial Deficiencies using polyunsaturated fatty acids which are modified in certain positions to attenuate oxidative damage by Reactive Oxygen Species (ROS) and/or suppress the rate of formation of reactive products and toxic compounds.

A. CLASSIFICATION OF SUBJECT MATTER*A61K 31/20(2006.01)i, A61K 31/202(2006.01)i, A61K 31/192(2006.01)i, A61K 31/122(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 31/20; A61K 36/16; A61K 31/205; A61K 31/202; A23L 1/30; A61P 1/00

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), Pubmed and Keywords: "polyunsaturated", "fatty acid", "PUFA", "oxidation", "isotope", "deuterium", "coenzyme Q", "antioxidant", "energy processing disorder", "mitochondrial deficiency"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HILL, S. et al. Isotope-reinforced polyunsaturated fatty acids protect yeast cells from oxidative stress. Free Radical Biology & Medicine, 1 January 2011, Vol. 50, pp. 130-138. See abstract; page 131, left column, paragraph 3 - right column, paragraph 1; page 133, left column, paragraph 2 - right column, paragraph 2; figures 1,4-7; page 137, right column, paragraph 2.	1-15
A	WO 2010-132347 A2 (UNIVERSITY OF MARYLAND, BALTIMORE) 18 November 2010 See the whole document.	1-15
A	WO 2010-143053 A1 (ENERGY4LIFE AG) 16 December 2010 See the whole document.	1-15
A	EP 1961311 A1 (EGG SCIENCE & TECHNOLOGY) 27 August 2008 See the whole document.	1-15
A	US 2009-0232916 A1 (SHULMAN, A. et al.) 17 September 2009 See the whole document.	1-15



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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"P" document published prior to the international filing date but later than the priority date claimed

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"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

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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