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AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
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KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME,
MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ,
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(88) Date of publication of the international search report:
29 January 2015

(54) Title: COMPOSITIONS COMPRISING DOCOSAPENTAENOIC ACID AND METHODS OF USE

(57) Abstract: Orally administrable composition comprising fatty acids comprising docosapentaenoic acid (DPA) and docosahex-
aenoic acid (DHA). The compositions can be used for the treatment or prophylaxis of a variety of conditions, including liver-related
conditions.



WO 2014/165190 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 14/24712

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A23L 1/23 (2014.01)

CPC - C11C 3/10; C12P 7/6454; A23L 1/193

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(8): A23L 1/23 (2014.01)

CPC: C11C 3/10; C12P 7/6454; A23L 1/193

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)

Thomson innovation (US Grant, AU Innov, CA App, US App, AU Grant, FR App, EP Grant, AU App, DE Util, EP App, GB App, DE Grant, WO App, CA Grant, DE App, JP App, KR Grant, KR App, Other, JP Util, KR Util, CN Util, JP Grant), Google, sciencedirect. Search Terms Used: proprotein convertase subtilisin, docosapentaenoic acid, proprotein convertase sub

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 2010/0062107 A1 (Yoon et al.) 11 March 2010 (11.03.2010) entire document especially para [0038]; [0039]; [0047]; table 1-2	1-12 and 20 13-19
Y	US 2009/0054329 A1 (Willemsen et al.) 26 February 2009 (26.02.2009) entire document especially claims 1 and 22	13-14 and 19
Y	US 2013/0005757 A1 (Osterloh et al.) 03 January 2013 (03.01.2013) entire document especially claim 1; para [0023]; [0030]	15-18

☐ Further documents are listed in the continuation of Box C.

* 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 another 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

30 September 2014 (30.09.2014)

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 14/24712

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:

—please see supplemental box —

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 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.:

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.

Box III: lack of unity:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I: claims 1-12, directed to pharmaceutical composition comprising docosapentaenoic acid (DPA) and docosahexaenoic acid (DHA)

Group II: claim 13-20, directed to methods of treating, preventing, reducing the occurrence of, and improving symptoms associated with a liver-related disease or condition in a subject in need thereof, comprising administering to the subject a composition.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

Special technical features:

The special technical feature of Groups II is the method of treatment which is not required by group I

Common technical features:

Groups I-II share the technical feature of a composition of claim 1. However, this shared technical feature does not provide a contribution over the prior art because these shared technical features are anticipated by US 2010/0062107 A1 to Yoon et al. (hereafter 'Yoon').

Yoon teaches pharmaceutical composition (para [0039]) comprising docosapentaenoic acid (DPA) and docosahexaenoic acid (DHA) (para [0039]; [0047]) in an amount of at least 60% of the total amount of the fatty acids present in the composition (para [0038]; [0047]; triglyceride containing docosahexaenoic acid (DHA) and docosapentaenoic acid (DPA) with a content of 45 to 95%), wherein the ratio of DPA to DHA (DPA:DHA) is between about 10:1 to about 1:10 (para [0038], weight ratio of docosahexaenoic acid (DHA)/docosapentaenoic acid (DPA) is 0.5 to 8).

Groups I-II, therefore, lack unity under PCT Rule 13.2, because they do not share a same or corresponding special technical feature providing a contribution over the prior art.