



'351 Patent

 US008278351B2	
(12) United States Patent Sampalis	(10) Patent No.: US 8,278,351 B2 (45) Date of Patent: *Oct. 2, 2012



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ISSUE DATE: October 02, 2012

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AKER8771TC00070546

SUMMARY OF THE INVENTION

In one aspect, the invention provides novel wherein the two fatty acids chains of the phospholipid occupied by eicosapentanoic acid (EPA) and docosahexaenoic acid (DHA) simultaneously, within the same molecule as a phospholipid of the general formula (I):

Cited in Brenna Dec

The novel phospholipids and the novel fatty acid compound are derived from an extract from a marine biomass.

Refer

Ground 1: Claims 1-94 are unpatentable under 35 U.S.C. 102(b) over Beaudoin I (Ex. 1002).....	15
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Ground 3: Claims 1-13, 19-36, 42-59, 65-83, and 89-94 are unpatentable under 35 U.S.C. 102(b) over Maruyama (Ex. 1004).....	28
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Ground 9: Claims 1-94 are unpatentable under 35 USC 103(a) over Fujita (Ex. 1005) in view of Watanabe (Ex. 1039), and further in view of Itano (Ex. 1009) and Yasawa (Ex. 1015).....	54
Ground 10: Claims 1-94 are unpatentable under 35 USC 103(a) over Fricke (Ex. 1006) in view of Bergelson (Ex. 1017), and further in view of Yasawa (Ex. 1015), Itano (Ex. 1009) the WHO Bulletin (Ex. 1018).....	57

Petition at i-ii

Neptune's Expert

23 Q Are -- the claimed phospholipids exist in
24 krill in nature; correct?
25 A Correct.

Ex. 1093 (J. Jaczynski 10/15/13 Dep. Tr.) at 57:23-25
Cited in Reply at 5

2 Q Do you know of any polar solvents that
3 would not extract the claimed phospholipids from
4 krill?
5 A No.

Ex. 1093 (J. Jaczynski 10/15/13 Dep. Tr.) at 60:2-5
Cited in Reply at 12

Free Fatty Acid Concentration (Claims 5

As used herein and in the claims, where the term “about” is used with a numerical value, the numerical value may vary by at least $\pm 50\%$. Preferably, the variation will be $\pm 40\%$ or $\pm 30\%$

Ex. 1001 ('351 Patent) at 21:61-64
Cited in Petition at 10; Reply at 3

Free fatty acids are present in the extract in an amount of at least 4% w/w and preferably at least 5% w/w. Polyunsatu-

Ex. 1001 ('351 Patent) at 16:46-47
Cited in Reply at 3

TABLE 5	
Lipid composition, vitamins A and E, pigments and flavonoids of the extract	
Monoglycerides (MG) (g/100 g sample)	≥ 0.7
Triglycerides (TG) (g/100 g sample)	≥ 3.00
Free Fatty Acids (FFA) (g/100 g sample)	≥ 5.00
Cholesterol (g/100 g sample)	≥ 2.00
Total Phospholipids (PL) (g/100 g sample)	≥ 40.00
Phosphatidyl Ethanolamine (PE)	
Phosphatidyl Inositol (PI) (g/100 g sample)	≥ 0.20
Phosphatidyl Serine (PS) (g/100 g sample)	≥ 35.00
Phosphatidyl Choline (PC) (g/100 g sample)	≥ 0.50
Sphingomyelin (g/100 g sample)	$\geq 1,400$
Vitamin A ($\mu\text{g}/100 \text{ ml}$)	≥ 15
Vitamin E ($\mu\text{g}/100 \text{ ml}$)	$\geq 1,600$
Beta-Carotene ($\mu\text{g}/100 \text{ ml}$)	≥ 10
Astaxanthin (mg/100 ml)	≥ 10
Canthaxanthin (mg/100 ml)	≥ 7.0
Flavonoid (mg/100 ml)	

Ex. 1001 ('351 Patent) at Table 5 (17:52-18:6)
Cited in Reply at 3

Suitable For Human Consumption

When the phospholipid extract of the inventions is used as a nutraceutical, it can be in the form of foods, beverages, energy bars, sports drinks, supplements or other forms all as are known in the art.

As noted above, the phospholipid extract of the invention is also useful in cosmetic preparations, e.g., moisturizing creams, sun-block products and other topical cosmetic products as known in the art.

Ex. 1001 ('351 Patent) at 20:34-41
Cited in Reply at 2

70. A cosmetic preparation comprising:
prising: a phospholipid of the formula

* * *

wherein the extract is suitable for human consumption

Ex. 1001

7 Q Do you as one of ordinary skill in the art believe that claim, claim 1, requires orally ingest the krill extract?
8
9
10 A Again, it requires with the krill extract.
11 Q That's not an answer to the question.
12 Does, does it require that you orally ingest the claimed krill extract? And I think the answers are "yes," "no" or "I don't know."
13
14
15 A Well, it requires a cosmetic preparation.
16
17 Q And cosmetic preparations can be orally ingested, right?
18
19 A They don't need to be orally ingested.

Ex. 1097 (J. Jaczynski 8/2/01)

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