

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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RIMFROST AS,  
Petitioner,

v.

AKER BIOMARINE ANTARCTIC AS,  
Patent Owner.

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Case IPR2017-00747  
Patent 9,078,905 B2

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Before LORA M. GREEN, ERICA A. FRANKLIN, and  
JACQUELINE T. HARLOW, *Administrative Patent Judges*.

HARLOW, *Administrative Patent Judge*.

DECISION  
Institution of *Inter Partes* Review  
37 C.F.R. § 42.108

## I. INTRODUCTION

Rimfrost AS (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–20 of U.S. Patent No. 9,078,905 B2 (Ex. 1001, “the ’905 patent”). Paper 2 (“Pet.”). Aker Biomarine Antarctic AS (“Patent Owner”) declined to file a Preliminary Response. We have authority to determine whether to institute an *inter partes* review under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the petition “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

For the reasons set forth below, we institute an *inter partes* review of claims 1–20 of the ’905 patent.

### A. Related Matters

The ’905 patent is asserted in *Aker Biomarine Antarctic AS v. Olympic Holding AS*, Case No. 1:16-CV-00035-LPS-CJB (D. Del.). Pet. 2; Paper 3, 1. Petitioner has additionally challenged the claims of the ’905 patent in IPR2017-00745.<sup>1</sup> Paper 5, 2. The parties have not identified any further, currently pending, related proceedings concerning the ’905 patent.<sup>2</sup>

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<sup>1</sup> Petitioner also challenges U.S. Patent No. 9,028,877 B2 in IPR2017-00746 and IPR2017-00748. Paper 5, 2. Both the ’905 patent and the ’877 patent are continuations of Application No. 12/057,775, filed March 28, 2008.

<sup>2</sup> The ’905 patent was also asserted in *In the Matter of Certain Krill Oil Products and Krill Meal for Production of Krill Oil Products*, Investigation No. 337-TA-1019 (USITC) (Pet. 2–3; Paper 3, 1); however, Petitioner states that the investigation has been terminated with regard to the ’905 patent.

*B. The '905 Patent*

The '905 patent, titled “Bioeffective Krill Oil Compositions,” issued July 14, 2015, from U.S. Patent Application No. 14/490,221, filed September 18, 2014. Ex. 1001, at [54], [45], [21], [22]. The '905 patent is a continuation of U.S. Patent Application No. 12/057,775, filed March 28, 2008. *Id.* at [63]. The '905 patent claims priority to U.S. Provisional Patent Application No. 60/920,483, filed March 28, 2007; U.S. Provisional Patent Application No. 60/975,058, filed September 25, 2007; U.S. Provisional Patent Application No. 60/983,446, filed October 29, 2007; and U.S. Provisional Patent Application No. 61/024,072, filed January 28, 2008. *Id.* at [60].

The '905 patent describes extracts from Antarctic krill that include bioactive fatty acids. Ex. 1001, 1:19–20. In particular, the '905 patent discloses krill oil compositions having “high levels of astaxanthin, phospholipids, includ[ing] enriched quantities of ether phospholipids, and omega-3 fatty acids.” *Id.* at 9:28–31. The '905 patent purports to improve upon known krill oil extraction techniques and the resulting products by disclosing a method for performing extraction on krill meal, in order to eliminate the need to transport frozen krill over long distances prior to processing. *Id.* at 1:65–2:16, 9:31–43.

The '905 patent acknowledges that krill oil compositions, including compositions having up to 60% w/w phospholipid content and as much as 35% w/w EPA/DHA content, were known in the art prior to the time of

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Pet. 3, n.1.

invention. *Id.* at 1:52–57. The '905 patent also indicates that supercritical fluid extraction with solvent modifier was known to be a useful method for extracting marine phospholipids from salmon roe. *Id.* at 1:65–67.

In addition, the '905 patent recognizes that myriad health benefits have been attributed to krill oil in the prior art. For example, the '905 patent states that “[k]rill oil compositions have been described as being effective for decreasing cholesterol, inhibiting platelet adhesion, inhibiting artery plaque formation, preventing hypertension, controlling arthritis symptoms, preventing skin cancer, enhancing transdermal transport, reducing the symptoms of premenstrual symptoms or controlling blood glucose levels in a patient.” *Id.* at 1:46–52.

### *C. Illustrative Claim*

Independent claim 1, reproduced below, is illustrative of the claimed subject matter.

1. Encapsulated krill oil comprising:  
a capsule containing an effective amount of krill oil,  
said krill oil comprising from about 3% to about 15% w/w  
ether phospholipids.

Ex. 1001, 35:47–50. Independent claims 12 and 18 further specify the lipid composition of the krill oil, the type of krill used, and the material in which the krill oil is encapsulated. *Id.* at 36:29–36, 36:48–56.

*D. Prior Art Relied Upon*

Petitioner relies upon the following as prior art references (Pet. 8):

Randolph      US 2005/0058728 A1      Mar. 17, 2005      (Ex. 1011)

Bottino, *The Fatty Acids of Antarctic Phytoplankton and Euphausiids. Fatty Acid Exchange among Trophic Levels of the Ross Sea*, 27 MARINE BIOLOGY, 197–204 (1974) (Ex. 1007).

Fricke et al., *Lipid, Sterol and Fatty Acid Composition of Antarctic Krill (Euphausia superba Dana)*, 19(11) LIPIDS 821–827 (1984) (Ex. 1010).

Sampalis et al., *Evaluation of the Effects of Neptune Krill Oil™ on the Management of Premenstrual Syndrome and Dysmenorrhea*, 8(2) ALT. MED. REV. 171–179 (2003) (Ex. 1012).

Tanaka et al., *Platelet-Activating Factor (PAF)-Like Phospholipids Formed During Peroxidation of Phosphatidylcholines from Different Foodstuffs*, 59(8) BIOSCI. BIOTECH. BIOCHEM. 1389–1393 (1995) (Ex. 1014).

Petitioner also relies on the Declaration of Stephen J. Tallon, Ph.D. (Ex. 1006).

*E. The Asserted Grounds of Unpatentability*

Petitioner challenges the patentability of claims 1–20 of the '905 patent on the following grounds (Pet. 6–7):

Claim(s)	Basis	References
1–4, 6, 9, 10, 12, 15, 16, and 18	§ 103(a)	Sampalis, Tanaka, and Fricke
5	§ 103(a)	Sampalis, Tanaka, Fricke, and Randolph
7, 8, 11, 13, 14, 17, 19, and 20	§ 103(a)	Sampalis, Tanaka, Fricke, and Bottino

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