

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

**RIMFROST AS  
Petitioner**

v.

**AKER BIOMARINE ANTARCTIC AS  
Patent Owner**

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**CASE No.: IPR2018-00295**

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**U.S. Patent No. 9,320,765**

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**Patent Owner's Response to Petition for *Inter Partes Review of*  
U.S. Patent No. 9,320,765**

TABLE OF CONTENTS

I.	INTRODUCTION.....	3
II.	SUMMARY OF ARGUMENT .....	4
III.	BACKGROUND .....	6
A.	THE ‘765 PATENT CLAIMS .....	6
B.	TECHNOLOGY OVERVIEW.....	6
IV.	LEGAL STANDARDS .....	8
V.	CLAIM CONSTRUCTION.....	9
VII.	CLAIMS 1 - 48 ARE NOT OBVIOUS OVER THE COMBINED REFERENCES.....	14
A.	Ground 1: Claims 1-4, 7, 9-11, 14, 18-20, 24-28, 31, 33-35, 38, 42-44 and 47 are not obvious over the combination of Sampalis I (Ex. 1012), Catchpole (Ex. 1009), Fricke (Ex. 1010), and Breivik II (Ex. 1037). .....	14
B.	Ground 2: Claims 5-6, 12-13, 15-16, 21-23, 29-30, 36-37, 39-40 and 45-46 are not obvious over the combination of Sampalis I (Ex. 1012), Catchpole (Ex. 1009), Fricke (Ex. 1010), Breivik II (Ex. 1037), and Bottino I (Ex. 1007). .....	29
C.	Ground 3: Claims 8, 17, 24, 32, 41 and 48 are not obvious over the combination of Sampalis I (Ex. 1012), Catchpole (Ex. 1009), Fricke (Ex. 1010), Breivik II (Ex. 1037), Bottino I (Ex. 1007) and Randolph (Ex. 1011). .....	30
VIII.	CERTIFICATE OF COMPLIANCE.....	30
IX.	CONCLUSION .....	31
	CERTIFICATE OF SERVICE .....	32

## I. INTRODUCTION

Pursuant to 37 C.F.R. § 42.120, Patent Owner Aker BioMarine Antarctic AS (“Patent Owner” or “Aker”) Responds to the Petition for *Inter Partes* Review (“Petition”) of U.S. Patent No. 9,320,765 (“the ‘765 Patent”) filed by Rimfrost AS (“Petitioner” or “Rimfrost”). On June 14, 2018 the Patent Trial and Appeal Board instituted this *Inter Partes* review of claims 1 – 48 of the ‘765 Patent based on Rimfrost’s Petition. In Response, Patent Owner relies on the Declaration of Dr. Nils Hoem (Ex. 2001) and the additional exhibits in the Exhibit Listing *that* is filed concurrently herewith. The following grounds of alleged unpatentability are at issue:

**Ground 1:** Claims 1-4, 7, 9-11, 14, 18-20, 24-28, 31, 33-35, 38, 42-44 and 47 are obvious over the combination of Sampalis I (Ex. 1012), Catchpole (Ex. 1009), Fricke (Ex. 1010), and Breivik II (Ex. 1037).

**Ground 2:** Claims 5-6, 12-13, 15-16, 21-23, 29-30, 36-37, 39-40 and 45-46 are obvious over the combination of Sampalis I (Ex. 1012), Catchpole (Ex. 1009), Fricke (Ex. 1010), Breivik II (Ex. 1037), and Bottino I (Ex. 1007).

**Ground 3:** Claims 8, 17, 24, 32, 41 and 48 are obvious over the combination of Sampalis I (Ex. 1012), Catchpole (Ex. 1009), Fricke (Ex. 1010), Breivik II (Ex. 1037), Bottino I (Ex. 1007) and Randolph (Ex. 1011).

## **II. SUMMARY OF ARGUMENT**

Petitioner fails to establish by a preponderance of the evidence that it's cited prior art renders any patented claim obvious.

First, there is no motivation to combine the references to arrive at the claimed krill oil compositions. Hoem Decl. (Ex. 2001), ¶¶32, 48-54. The claims of the '765 patent are directed to krill oils with specific content ranges for multiple components including ether phospholipids, non-ether phospholipids, triglycerides, and astaxanthin esters. These lipids differ in terms of their polarity and extractability in different solvent systems. The phospholipids are polar lipids and while triglycerides are neutral lipids. A POSITA would not combine ranges for polar lipids obtained from a reference using an extraction technique that is selective for polar lipids such as Catchpole with ranges for neutral lipids such as triglycerides from a reference disclosing a non-selective extraction technique such as Fricke 1984 to provide a specifically defined krill oil as claimed. *Id.*

Second, Claim 25 and the claims dependent thereon specify that the ether phospholipid content be greater than about 3%, claim 33 and the claims dependent

thereon specify that the ether phospholipid content be greater than about 4%, and claim 42 and the claims dependent thereon specify that the ether phospholipid content be greater than about 5%. Ether phospholipids, especially marine ether phospholipids rich in long chain polyunsaturated fatty acids such as docosahexaenoic acid (DHA) were known in the art prior to the priority date of the ‘765 patent to be precursors for compounds with potent Platelet Activating Factor (PAF) activity. Hoem Decl. (Ex. 2001), ¶¶33, 55-59. The prior art expressed real concern that when ingested and adsorbed into the body, these ether phospholipids and their metabolites would be subject to uncontrolled peroxidation generating pro-inflammatory PAF-like molecules. *Id.* Thus, a POSITA would have been led by the prior art to limit the amount ether phospholipids in krill oil that is encapsulated for oral consumption and intended to treat conditions associated with inflammation such as is taught in Sampalis I.

Third, claims 18 to 24 and claims 42 to 48 all require that the krill oil contain “greater than about 5% w/w ether phospholipids.” The broadest reasonable interpretation for this claim term is “greater than 4.95% ether phospholipids.” Hoem Decl. (Ex. 2001), ¶¶33, 60-63. Applying this definition, the combined references do not teach each element of the claims as Catchpole (Ex. 1009), which is relied on by Petitioner for the ether phospholipid limitation, teaches at most 4.8% ether phospholipids which is outside of the claimed range.

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