## RIMFROST AS,

Petitioner,

V.

## AKER BIOMARINE ANTARCTIC AS,

Patent Owner.

IPR2020-01532 U.S. Patent No. 9,644,169

IPR2020-01533 U.S. Patent No. 9,816,046

### PETITIONER'S DEMONSTRATIVES

For Petitioner

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## '169 Patent Invalidity Grounds

'169 Petition, IPR2020-01532, Paper 2, p. 10

TABLE I				
Ground	Reference(s)	Basis	Claims Challenged	
1	Breivik II (EX1037) Catchpole (EX1009) Budziński (EX1008) Fricke (EX1010) Randolph (EX1011)	35 U.S.C. § 103(a)	1-5, 7-15, 17-2	
2	Breivik II (EX1037) Catchpole (EX1009) Budziński (EX1008) Fricke (EX1010) Randolph (EX1011) Sampalis I (EX1012)	35 U.S.C. § 103(a)	6, 16	



## **'046 Patent Invalidity Grounds**

'046 Petition, IPR2020-01533, Paper 2, pp. 10-11

	TA	BLE II	
Ground	References	Basis	Claims Cha
1	Breivik II (EX1037), Yoshitomi (EX1033), Budziński (EX1008), Fricke (EX1010), Bottino II (EX1038), Sampalis I (EX1012)	35 U.S.C. §103(a)	1-10
2	Breivik II (EX1037), Yoshitomi (EX1033), Budziński (EX1008), Fricke (EX1010), Bottino II (EX1038), Randolph (EX1011)	35 U.S.C. §103(a)	11, 12
3	Breivik II (EX1037), Yoshitomi (EX1033), Budziński (EX1008), Fricke (EX1010), Bottino II (EX1038), Randolph (EX1011), Sampalis I (EX1012)	35 U.S.C. §103(a)	13-19



Independent Claims for '169 Patent   Independent Claims for '046 Patent			
Claims 1 and 12	Claims 1 and 13		
Claims I and 12	Ciamis I and 13		
1. A method of production of krill oil	1. A method of production of krill oil		
comprising:	comprising:		
a) providing <b>krill</b> ;	obtaining a <b>krill meal</b> produced by a		
	process comprising		
b) treating said krill to denature	treating krill to destroy the activity		
lipases and phospholipases in said	of lipases and phospholipases		
krill to provide a denatured krill	naturally present in krill and		
product;			
c) storing said denatured krill product	wherein said <b>krill meal</b> has been		
for a storage period of from 1 to 24	stored for period of from 1 to 36		
months;	months; and		
d) after said storage period, extracting	extracting krill oil from said krill		
oil from said denatured krill product	meal that has been stored from 1 to 36		
	months		
with a polar solvent to provide a krill	with a polar solvent to provide a krill		
oil with	oil with		
on with	on with		
from about 3% to about 15% ether	greater than 30%		
phospholipids w/w of said krill oil	phosphatidylcholine w/w of said krill		
	oil and		
astaxanthin esters in amount of			
greater than about 100 mg/kg of said	astaxanthin esters.		
krill oil.			



Independent Claims for '169 Patent Claims 1 and 12	Independent Claims for '046 Patent Claims 1 and 13
12. A method of <b>production of krill</b> oil comprising:	13. A method of <b>production of</b> <i>Euphausia superba</i> krill oil comprising:
a) obtaining a denatured krill product produced by treating freshly harvested krill krill to denature lipases and phospholipases in said krill and that has been stored from 1 to 24 months; and	a) obtaining a Euphausia superba krill meal produced by a process comprising treating Euphausia superba to destroy the activity of lipases and phospholipases naturally present in Euphausia superba and wherein said Euphausia superba krill meal has been stored from 1 to 36 months; and
b) extracting oil from said denatured krill product that has been stored from 1 to 24 months	b) extracting Euphausia superba oil from said krill meal that has been stored from 1 to 36 months
with a polar solvent to <b>provide a krill</b> oil with	with a polar solvent to provide a  Euphausia superba krill oil comprising
from about 3% to about 15% ether phospholipids w/w of said krill oil	greater than 30% phosphatidylcholine w/w of said Euphausia superba krill oil,
	less than 3% free fatty acids w/w of said <i>Euphausia superba</i> krill oil, and
astaxanthin esters in amount of greater than about 100 mg/kg of said krill oil.	at least 100 mg/kg astaxanthin esters.



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