

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RIMFROST AS,
Petitioner,

v.

AKER BIOMARINE ANTARCTIC AS,
Patent Owner.

IPR2020-01533
Patent 9,816,046 B2

Before ERICA A. FRANKLIN, JON B. TORNQUIST, and
MICHAEL A. VALEK, *Administrative Patent Judges*.

TORNQUIST, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. *Background and Summary*

Rimfrost AS (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–19 of U.S. Patent No. 9,816,046 B2 (Ex. 1001, “the ’046 patent”). Aker Biomarine Antarctic AS (“Patent Owner”) did not file a Preliminary Response to the Petition. Upon review of Petitioner’s arguments and evidence, we instituted an *inter partes* review of all claims and grounds asserted in the Petition (Paper 6, “Institution Decision” or “Inst. Dec.”).

Patent Owner subsequently filed a Response (Paper 9, “PO Resp.”), to which Petitioner filed a Reply (Paper 15, “Pet. Reply”), and Patent Owner filed a Sur-Reply (Paper 18, “Sur-Reply”). With authorization, Patent Owner also filed a paper identifying arguments and evidence in Petitioner’s Reply that it considers to be improper (Paper 19), to which Petitioner filed a response (Paper 21).

Petitioner also filed a motion to exclude certain evidence relied upon by Patent Owner (Paper 25), to which Patent Owner filed an opposition (Paper 26), and Petitioner filed a reply (Paper 28).

In support of their respective positions, Petitioner relies upon the declaration and reply declaration of Dr. Stephen J. Tallon (Exs. 1006, 1086), and Patent Owner relies upon the declaration of Dr. Jacek Jaczynski (Ex. 2015).

An oral hearing was held on January 12, 2022, and a transcript of the hearing is included in the record (Paper 32, “Tr.”).

B. Real Parties-in-Interest

Petitioner identifies itself, Olympic Holding AS, Emerald Fisheries AS, Rimfrost USA, LLC, Rimfrost New Zealand Limited, and Bioriginal Food and Science Corp. as real parties-in-interest. Pet. 3. Based on various ownership interests, and out of “an abundance of caution,” Petitioner also identifies Stig Remøy, SRR Invest AS, Rimfrost Holdings AS, and Omega Protein Corporation as real parties-in-interest. *Id.*

Patent Owner identifies itself as the real party-in-interest in this proceeding. Paper 5, 1.

C. Related Matters

The parties identify as a related matter *Aker Biomarine Antarctic AS v. Olympic Holding AS*, 1:16-CV-00035-LPS-CJB (D. Del.), which involved U.S. Patent Nos. 9,028,877 B2 (“the ’877 patent”) and 9,078,905 B2 (“the ’905 patent”). Pet. 3–4; Paper 5, 1. The parties further identify Investigation No. 337-TA-1019 by the United States International Trade Commission, which involved the ’877 and ’905 patents, as well as U.S. Patent No. 9,320,765 (“the ’765 patent”), U.S. Patent No. 9,375,453 (“the ’453 patent”), and U.S. Patent No. 9,072,752 (“the ’752 patent”). Pet. 4; Paper 5, 1–2.

The parties also identify the following Board proceedings as related matters:

- IPR2017-00745 and IPR2017-00747, which requested review of the ’905 patent (all challenged claims found unpatentable (Ex. 1103), decision affirmed on appeal (Ex. 1154));
- IPR2017-00746 and IPR2017-00748, which requested review of the ’877 patent (all challenged claims found unpatentable (Ex. 1104), decision affirmed on appeal (Ex. 1154));

- IPR2018-00295, which requested review of the '765 patent (all challenged claims found unpatentable (Ex. 1129));
- PGR2018-00033, which requested review of U.S. Patent No. 9,644,170 (institution denied because the challenged patent was not eligible for post grant review);
- IPR2018-01178 and IPR2018-01179, which requested review of the '453 patent (all challenged claims found unpatentable (Exs. 1157, 1158));
- IPR2018-01730, which requested review of the '752 patent (all challenged claims found unpatentable (Ex. 1159)); and
- IPR2020-01532, which requested review of U.S. Patent No. 9,644,169 B2 (pending).

Pet. 4–7; Paper 5, 2–4.

D. The '046 Patent

The '046 patent discloses extracts from Antarctic krill that include bioactive fatty acids. Ex. 1001, 1:24–25. The '046 patent explains that krill oil compositions, including compositions having up to 60% w/w phospholipid content and as much as 35% w/w EPA/DHA¹ content, were known in the art. *Id.* at 1:59–62. The '046 patent further explains 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

¹ According to the '046 patent, “EPA” is 5,8,11,14,17-eicosapentaenoic acid and “DHA” is 4,7,10,13,16,19-docosahexanoic acid. Ex. 1001, 9:13–16.

symptoms of premenstrual symptoms or controlling blood glucose levels in a patient.” *Id.* at 1:51–57.

According to the ’046 patent, lipases and phospholipases within krill can result in the decomposition of glycerides and phospholipids, such as phosphatidylcholine, during transport of frozen krill from the Southern Ocean to a processing site. *Id.* at 2:11–18, 9:61–63. To avoid the problem of enzymatic decomposition of krill products, the ’046 patent describes a method of thermally denaturing the lipases and phospholipases in fresh-caught krill prior to storage and processing. *Id.* at 9:63–10:11, 10:45–50. The ’046 patent reports that these denaturing steps allow for the storage of krill material “for from about 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, or 12 months to about 24 to 36 months prior to processing.” *Id.* at 10:36–44.

The ’046 patent describes an embodiment wherein krill oil is subsequently extracted from the stored krill product using a polar solvent and/or supercritical carbon dioxide. *Id.* at 10:2–4. In Example 7 of the ’046 patent, “[k]rill lipids were extracted from krill meal (a food grade powder) using supercritical fluid extraction with co-solvent.” *Id.* at 32:15–16.

Initially, 300 bar pressure, 333°K and 5% ethanol (ethanol:CO₂, w/w) were utilized for 60 minutes in order to remove neutral lipids and astaxanthin from the krill meal. Next, the ethanol content was increased to 23% and the extraction was maintained for 3 hours and 40 minutes. The extract was then evaporated using a falling film evaporator and the resulting krill oil was finally filtered.

Id. at 32:17–24.

In Example 8, krill oil prepared using the same method described in Example 7 was analyzed using ³¹P NMR to identify and quantify the phospholipids in the oil. *Id.* at 32:48–51. It was determined that “[t]he main

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.