

NON-CONFIDENTIAL

Jacek Jaczynski Declaration
Case No: IPR2014-00003

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AKER BIOMARINE AS
Petitioner

v.

NEPTUNE TECHNOLOGIES AND BIORESSOURCES INC.
Patent Owner

CASE IPR2014-00003

U.S. Patent No. 8,278,351

DECLARATION OF DR. JACEK JACZYNSKI

NEPN Ex. 2059
Aker v. Neptune

I. INTRODUCTION

I, Jacek Jaczynski, Ph.D., declare as follows:

1. Unless otherwise noted, I have personal knowledge of the matters stated below, and, if called as a witness in a legal proceeding in the United States or elsewhere, could and would testify competently thereto. All statements made herein on my personal knowledge are true, and those statements made on information and believe are believed to be true.

2. I have been retained by the Patent Owner, Neptune Technologies and Bioresources Inc. ("Patent Owner" or "Neptune"), in this matter. I understand Aker Biomarine AS ("Petitioner" or "Aker") filed a Petition for *Inter Parties* Review of U.S. Patent No. 8,278,351 ("the '351 Patent"), and that the Patent and Trial and Appeal Board ("Board") has instituted this *Inter Partes* review to determine the patentability of certain claims of the '351 Patent based on two different alleged grounds of invalidity:

- Claims 1, 4-6, 9, 12, 13, 19-24, 27-29, 32, 35, 36, and 42-46 as allegedly anticipated under 35 U.S.C. § 102(b) by Beaudoin I ("Beaudoin"); and
- Claims 1-6, 9, 12, 13, 19-29, 32, 35, 36, and 42-46 as allegedly obvious under 35 U.S.C. § 103(a) over the combination of Fricke, Bergelson, Yasawa, Itano, and the WHO Bulletin.

This Declaration sets forth the results of my evaluation and my opinions regarding the novelty and non-obviousness of the '351 Patent claims at issue in this proceeding.

3. I am being compensated at my customary hourly rate of \$300 for my time spent on developing, forming, and expressing the facts and opinions in this declaration. My compensation is not dependent on the content of my opinions, the results of my evaluation, or the outcome of this proceeding.

4. Below I provide my expert scientific opinions. In forming opinions in connection with this matter, I considered a variety of materials, including the Petition for *Inter Partes* Review of the '351 submitted by Petitioner and the declarations and other exhibits submitted with Aker's Petition, the '351 Patent, scientific publications, alleged prior art, deposition transcripts, and other materials. A complete list of the materials considered is attached hereto as Appendix A.

II. QUALIFICATIONS

5. I am a tenured Professor of Food Science and Technology at West Virginia University in the Davis College of Agriculture, Natural Resources, and Design -- Division of Animal and Nutritional Sciences. My appointment involves 50% research and 50% teaching. I have been a professor at West Virginia University since 2002.

6. I earned a Ph.D. in Food Science and Technology in 2002 from Oregon State University, Seafood Research and Education Center. Immediately following my doctoral work, I joined West Virginia University as a faculty member. For the past 15 years I have been actively pursuing scientific research specializing in aquatic foods, with an emphasis on krill. I have published nearly 20 book chapters and over 70 peer-reviewed articles on food

science and technology, many in high impact journals as indexed by Journal Citation Reports®. For example, one of my peer-reviewed publications directly concerns solvent extraction of krill oil. In addition, I am sole inventor of an issued patent (U.S. 7,763,717) and the inventor of two other patent applications currently under examination. One focus of my patent and patent applications is a method for isolating lipids from krill.

7. I serve on the Editorial Board for the Journal of Aquatic Food Product Technology and as a peer-reviewer for several food science journals, such as Food Chemistry and the Journal of Agriculture and Food Chemistry. I am a professional member of the Institute of Food Technologists ("IFT"), the American Chemical Society, the World Aquaculture Society, and Gamma Sigma Delta, an honorary society of agricultural scientists. I served as a Chair of the Division of Aquatic Food Products of the IFT for the 2010-2011 term. For the past 10 years I have also taught food science-related courses at West Virginia University, many of which enroll over 300 students annually. I am the recipient of the following awards: Mid Career Davis College of Agriculture Award (2008), Division of Animal and Nutritional Sciences Excellence in Teaching Award (2007), Davis-Michael Scholar Award (2012), and Division of Animal and Nutritional Sciences Excellence in Research Award (2007 and 2012). I have been nominated to the Benedum Distinguished Professorship (2011). My curriculum vitae is attached as Appendix B.

III. TECHNOLOGY BACKGROUND

8. Nutraceuticals or functional foods have existed for many years in various forms. Nutraceuticals refer to nutrients having health benefits in humans. Nutraceuticals are technologically developed and extracted from natural sources. One example is fish oil. Research has indicated that fish oil, particularly its polyunsaturated, omega-3 fatty acids EPA and DHA, offer health benefits.

9. Dr. Fotini Sampalis, inventor of the '351 Patent, hypothesized that the EPA and DHA in krill oil delivered superior benefits as compared to fish oil. However, both before and after the time of Dr. Sampalis's invention, krill was considered too difficult for profitable harvesting given its delicate structure and rapid decay rate. The industry focused instead on extracting omega-3 fatty acids from fish to produce fish oil. Dr. Sampalis broke away from the industry focus on fish and fish oil to discover the claimed krill extracts.

10. As a medical doctor, Dr. Sampalis designed and led numerous clinical trials in the early 2000s that resulted in published papers demonstrating the superiority of krill oil as compared to fish oil as a vehicle for delivering EPA and DHA to target systems in humans.¹

¹ *E.g.*, NEPN Ex. 2058 Sampalis F, Bunea R, Pelland MF, Kowalski O, Duguet N, and Dupuis S., Evaluation of the Effects of Neptune Krill Oil on the Management of Premenstrual Syndrome, *Alternative Medicine Review* 8(2):171-9 (2003); NEPN Ex. 2056, Bunea R, Farrah KE, Deutsch L., Evaluation of the effects of Neptune Krill Oil on the clinical course of hyperlipidemia, *Alternative Medicine Review* 9(4):420-8 (2004); NEPN Ex. 2057,

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