2025 年汕尾市海洋产业海外知识产权纠纷预警分析

汕尾市海洋资源丰饶，海域面积 2.39 万平方公里，海岸线长 455 公里，拥有红海湾、碣石湾两大海湾及近 900 个海岛，素有“百岛十滩九湾”之称。其渔业资源突出，拥有汕尾港、甲子港等 10 座渔港和 3 个国家级海洋牧场示范区，风能条件优越，沿海年均风速 9.2 米/秒，风能密度超 500 瓦/平方米，是海上风电开发的“首选地”。[1]汕尾战略定位锚定“华南高品质海产品主产区”，通过《现代化海洋牧场建设规划（2024–2035 年）》构建“一带两湾四区”发展格局（马宫、红海湾、碣石湾、甲子四大联动区），推动近岸向深远海转型，科学划设了 22 片总面积 743 平方公里的海上养殖区。同时推行“拿海即开工”的高效审批模式，已有 19 片海域完成部门协调，13.2 平方公里“生海”转化为“熟海”，汕尾海洋环境适宜养殖，近岸一类水质占比 93.33%，年均水温 17.8–31.9℃，适宜石斑鱼、海鲷鱼、牡蛎等高价值品种养殖 。[2]

一、Neptune Technologies &Bio Resources Inc、Acasti Pharma Inc 诉 Aker Biomarine 专利诉讼案

2023 年 7 月，Neptune Technologies & Bioresources Inc. 与 Acasti Pharma Inc. 在美国特拉华联邦地区法院（U.S. District Court for the District of Delaware）以专利侵权为由起诉 Aker Biomarine Antarctic AS，并向美国国际贸易委员会（ITC）提交申诉（调查号 337-TA-1372），要求禁止侵权产品进口3。原告索赔金额覆盖 Aker 侵权期间全球销售额分成，预估超 2.5 亿美元，并寻求永久禁令。2024 年 1 月 Aker 在挪威奥斯陆法院反诉 Neptune 专利无效，主张其工艺属于现有技术。

（一）当事人简介

原告：Neptune Technologies & Bio Resources Inc.及 Acasti Pharma Inc.

Neptune Technologies & Bio Resources Inc.后更名为 Neptune Wellness Sol

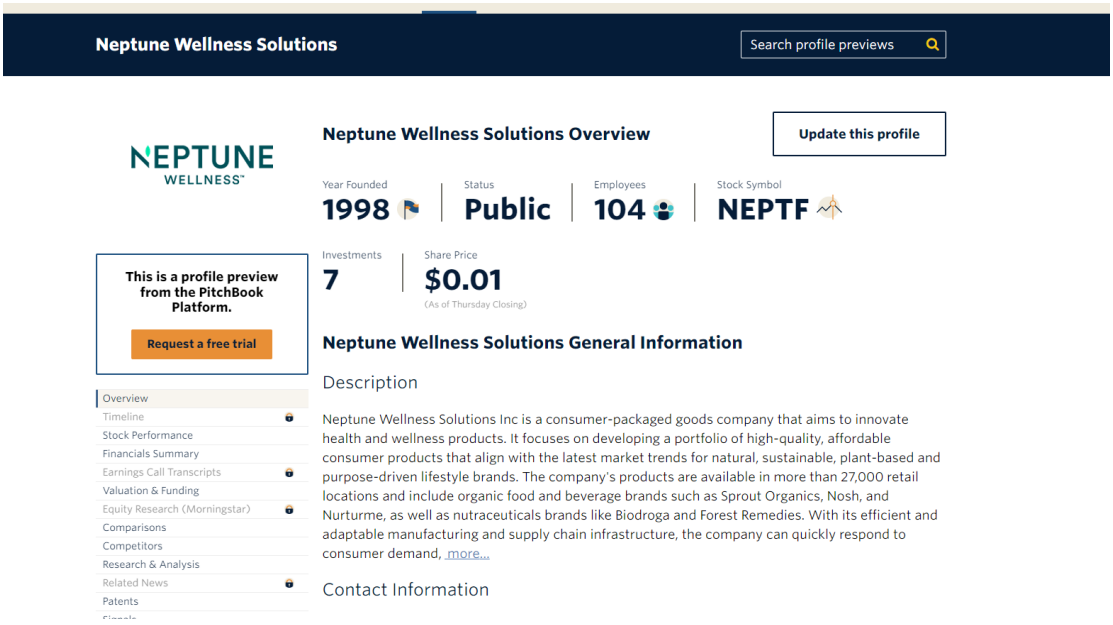
[1] https://www.shanwei.gov.cn/shanwei/zwgk/jcxx/zwdt/rdgz/content/post_893868.html

[2] https://www.shanwei.gov.cn/swsnnj/attachment/0/67/67463/1119179.pdf

[3] https://www.sec.gov/Archives/edgar/data/1401395/000117184313000325/newsrelease.htm

utions，是一家专注于海洋生物资源开发和健康产品创新的生物技术公司。Acasti Pharma Inc.是 Neptune Technologies & Bio Resources Inc.的子公司。

Neptune Wellness Solutions Inc.是一家专注于海洋生物活性成分研发与健康解决方案创新的国际化生物技术企业，总部位于加拿大魁北克省拉瓦尔市。公司核心业务涵盖高纯度海洋生物提取物（以南极磷虾油 Omega-3 产品线 NKO®和 ECOKRILL®为代表）、医药研发（通过子公司 Acasti Pharma 推进心血管药物开发）。Neptune Wellness Solutions 的专利技术 OceanExtract™，专注于从南极磷虾（krill）等海洋生物中提取高纯度 omega-3 多不饱和脂肪酸（PUFAs），主要用于膳食补充剂市场。Neptune Wellness Solutions 通过子公司 Acasti Pharma（持股 49%—57%）开发处方药，核心产品 CaPre®是从磷虾油提纯的高浓度 omega-3 磷脂复合物，针对高甘油三酯血症等心脑血管疾病。

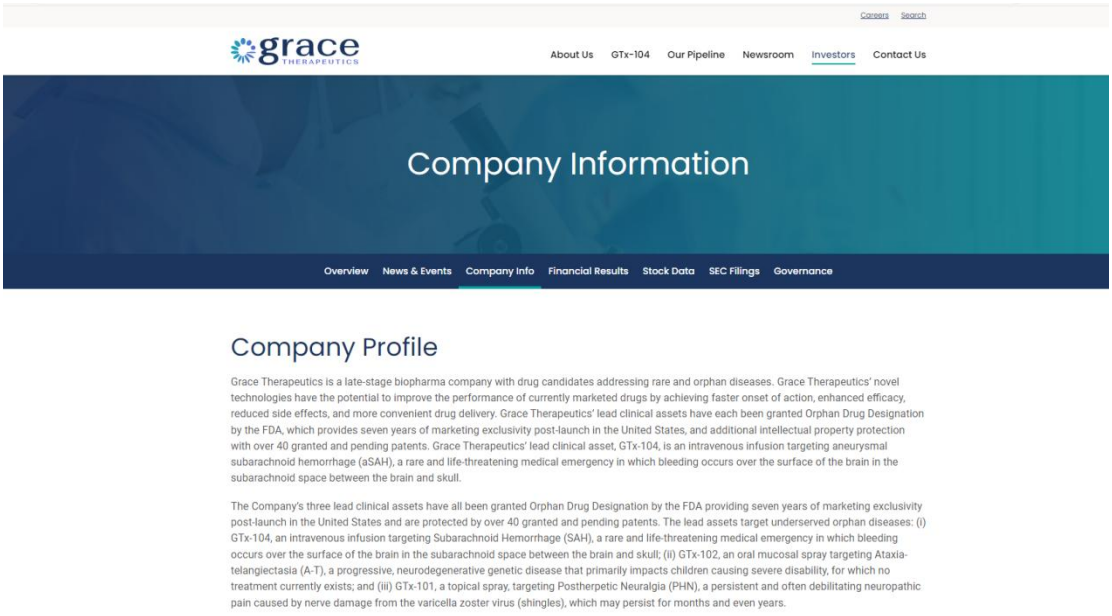


Neptune Wellness Solutions 公司简介

Neptune Wellness Solutions 拥有专利技术 OceanExtract™低温丙酮萃取工艺，能够在≤10℃、≤1.5 bar 条件下高效分离磷脂复合物并保持生物活性。公司高度重视知识产权布局，累计持有多项全球专利（包括磷虾油成分组合物、提取工艺及医药应用专利），覆盖生物提取技术、制剂配方及治疗方法等关键领域，并积极参与国际生物技术标准研究。Neptune 于多伦多证券交易所上市（股票代码：NEPT），后扩展至纳斯达克，通过持续技术迭代和业务转型应对工厂爆炸事故（2012 年）及核心药物 CaPre®临床试验失败（2023 年）等挑战，2023 年 Q2 营

收达 1198.7 万美元但持续亏损（每股收益-0.79 美元），市值约 5.46 亿元人民币。

Acasti Pharma Inc.后更名为 Grace Therapeutics, Inc.，是一家专注于罕见病与孤儿药的后期生物制药公司，前身为 Acasti Pharma。公司通过新型药物递送技术改良已上市药物，提升疗效并降低副作用。其研发策略聚焦于 cardiometabolic 疾病（如动脉瘤性蛛网膜下腔出血）及神经退行性疾病领域。采用“老药新用”技术平台，通过纳米颗粒技术、喷雾给药系统等改造现有化合物（如尼莫地平），解决口服制剂在危重症患者中的吞咽困难、生物利用度低等的局限性。Grace Therapeutics 研发的 GTx-104 的纳米递送系统将难溶性尼莫地平转化为水溶性制剂，支持标准静脉输注，显著降低药代动力学变异。目前，该公司拥有 40+项已授权及待批专利，覆盖药物配方、递送系统及适应症用途，核心专利围绕纳米颗粒制剂技术（如 GTx-104 的静脉注射配方）、黏膜喷雾给药装置（GTx-102/GTx-101）。



Grace Therapeutics 主页

被告：Aker Biomarine

Aker Biomarine 是挪威生物科技公司，全球最大的磷虾捕捞企业之一，业务覆盖磷虾捕捞、加工及销售磷虾油产品，与 Neptune 存在直接竞争关系。Aker Biomarine 临床研究投入中累计支持 50+项人体临床试验，发表 200+篇论文，证实磷虾油对心血管、关节健康及抗衰老的益处。其拥有 90+项全球专利，在美国、

欧洲、亚洲等多地注册专利，形成技术壁垒，专利覆盖磷虾捕捞、加工工艺、制剂配方及终端应用。早在 2016 年，Aker 在美国特拉华州法院及国际贸易委员会（ITC）起诉挪威 Rimfrost AS 等竞争对手，最终诉讼失败后，Rimfrost 进入美国市场，动摇 Aker 垄断地位，2025 年调整知识产权保护策略，发布声明打击冒用品牌及专利行为，重点监控电商平台侵权商品。

（二）案件背景

Neptune Technologies & Bioresources 及其子公司 Acasti Pharma 与 Aker BioMarine 的专利诉讼主要围绕磷虾油（krill oil）相关技术的核心专利展开，Neptune Technologies 公司拥有美国专利号 US8,278,351（简称'351 专利），该专利的技术关键点在于低温萃取技术，旨在保留成分活性并提高产物纯度。该案诉讼焦点是专利有效性以及侵权认定。关于专利有效性，Aker BioMarine 主张 Neptune 的提取工艺专利缺乏创造性，认为其与早前鱼类油提取技术（如乙醇分离法）高度相似，仅替换溶剂种类。针对组合物专利，Aker 指出磷脂比例属自然存在状态，不符合专利法要求的“人为技术创造”。关于侵权认定，Neptune 指控 Aker 的磷虾油产品覆盖其专利全部技术特征，构成等同侵权，其方式、功能、效果均一致，Aker 抗辩称其产品磷脂含量低于 40%，未落入保护范围，且技术手段（超临界 CO_2）与专利的丙酮法不构成等同。同时，Neptune 指控 Aker 在 2017 年收购其客户名单后，非法获取提取工艺参数用于生产竞争性产品。

EX-99 2 newsrelease.htm PRESS RELEASE

EXHIBIT 99.1

Neptune Files ITC Complaint Against Competitors Aker, Enzymotec, Rimfrost, Olympic and Others

LAVAL, Quebec, Jan. 30, 2013 (GLOBE NEWSWIRE) -- Neptune Technologies & Bioressources Inc. (**"Neptune"**) (Nasdaq:NEPT) (TSX:NTB) announces that it has filed a complaint under Section 337 of the US Tariff Act of 1930 (the "Complaint") with the United States International Trade Commission (the "ITC") alleging that Aker BioMarine AS, Aker BioMarine Antarctic USA, Inc., Aker BioMarine Antarctic AS, Enzymotec Limited, Enzymotec USA, Inc., Olympic Seafood AS, Olympic Biotec Ltd., Rimfrost USA, LLC, Bioriginal Food & Science Corp. and Avoca, Inc., a division of Pharmachem Laboratories Inc. (the "Respondents") are engaging in unfair trade practices by, at least, the importation, sale for importation, and sale after importation of certain krill-based products, namely krill paste and krill oils, that directly or indirectly infringe one or more claims of Neptune's U.S. Patent No. 8,278,351 (**"the '351 Patent"**).

"Neptune's patent estate reflects its position as the pioneer and market leader in the field. The filing of the Complaint is consistent with our philosophy that infringing competitors must be held accountable for their actions," said Mr. Henri Harland, Neptune's CEO and President. "This approach will enhance our business position as the leader and the innovator in this market."

Neptune is seeking an order prohibiting the Respondents, their subsidiaries, related companies and agents from engaging in the importation, sale for importation, marketing and/or advertising, distribution, offering for sale, sale, sale after importation, or other transfer within the United States of certain krill-based products that infringe one or more claims of the '351 Patent. Neptune expects that the ITC investigation will formally commence within the next month or so, and that the case will take a total of about 15 to 18 months to conclude.

"The ITC is one of the fastest means for judicial resolution of a patent dispute in the United States and it has the power to issue broad and severe remedies," added Mr. Harland. "When a company infringes our patents, without our permission or a license, we owe it to our shareholders and investors to protect the patents through every means available to us," he concluded.

About Neptune Technologies & Bioressources Inc.

Neptune is a biotechnology company engaged primarily in the development and commercialization of marine-derived omega-3 polyunsaturated fatty acids, or PUFAs. Neptune has a patented process of extracting oils from Antarctic krill, which omega-3 PUFAs are then principally sold as bulk oil to Neptune's distributors who commercialize them under their private label primarily in the U.S., European and Asian neutraceutical markets. Neptune's lead products, Neptune Krill Oil (NKO®) and ECOKRILL Oil (EKO™), generally come in capsule form and serve as a dietary supplement to consumers.

Through its subsidiaries Acasti Pharma Inc. ("Acasti") (TSX-V:APO) (Nasdaq:ACST) and NeuroBioPharm Inc. ("NeuroBioPharm"), in which Neptune respectively holds 57% and 96% of the voting rights, Neptune is also pursuing opportunities in the medical food and prescription drug markets. Acasti and NeuroBioPharm respectively focus on the research and development of safe and therapeutically effective compounds for highly prevalent atherosclerotic conditions, such as cardiometabolic disorders and cardiovascular diseases, and for neurodegenerative and inflammation related conditions. Acasti's lead prescription drug candidate is CaPre®, a purified high omega-3 phospholipid concentrate derived from Neptune krill oil being developed to address the prevention and treatment of cardiometabolic disorders, including hypertriglyceridemia, which is characterized by abnormally high levels of triglycerides.

Forward Looking Statements

Certain statements included in this press release may be considered forward-looking information within the meaning of Canadian securities laws and forward-looking statements within the meaning of U.S. federal securities laws, both of which we refer to as forward-looking statements. Such statements involve known and unknown risks, uncertainties and other factors that may cause results, performance or achievements to be materially different from those implied by such statements, and therefore these statements should not be read as guarantees of future performance or results. All forward-looking statements are based on Neptune's current beliefs as well as assumptions made by and information currently available to Neptune and relate to, among other things, Neptune's strategy, strategic goals, research and development activities, research and clinical testing outcome, future operations, future financial position, future revenues/results, projected costs, prospects and plans and objectives of management.

Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this press release. Due to risks and uncertainties, including the risks and uncertainties identified by Neptune in its amended and restated annual information form dated September 11, 2012, in its press release announcing an action plan to resume operations and supply customers dated November 26, 2012 and in its other public securities filings available at www.sedar.com and www.sec.gov/edgar.shtml, actual events may differ materially from current expectations. Except as required by law, Neptune disclaims any intention or obligation to update or revise any forward-looking statements.

CONTACT: Neptune Contact:
Neptune Technologies & Bioressources Inc.
Andre Godin, CFO
+1, 450. 687. 2262

（三）案件概况

2019—2021 年，Aker 在欧美多地成功申请撤销 Neptune 部分专利，理由为

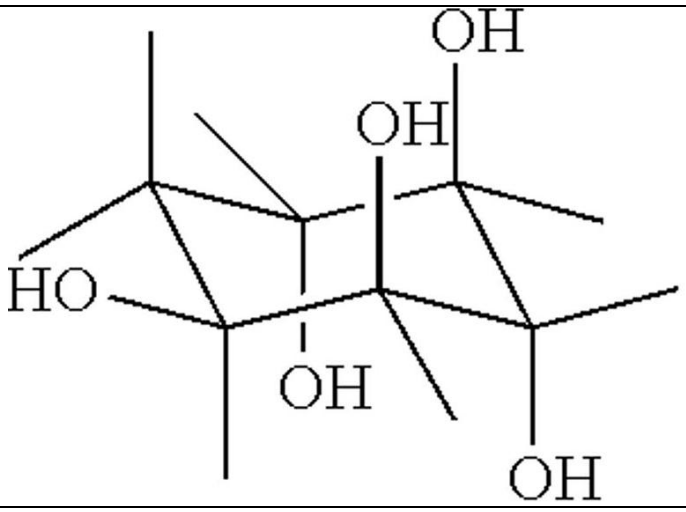
创造性不足。

2023 年，Neptune Technologies & Bioresources Inc. 与 Acasti Pharma Inc. 在美国特拉华联邦地区法院以专利侵权为由提起诉讼。

2024 年，Neptune 向美国国际贸易委员会（ITC）提交申诉，指控 Aker BioMarine 及其关联公司侵犯'351 专利。被诉方在美销售的磷虾油产品，如磷虾膏、磷虾油胶囊等，使用了与'351 专利相同的工艺。全球磷虾油市场规模超 3 亿美元，该产品主要应用于心血管健康、关节护理等保健品领域，Aker BioMarine 占据约 40%的市场份额，与 Neptune 形成直接竞争。此案中的被告关联公司范围较大，包括 Aker BioMarine 全球供应链中的美国子公司 Aker BioMarine Antarctic USA、以色列公司 Enzymotec、挪威企业 Olympic Seafood 等 9 家实体。

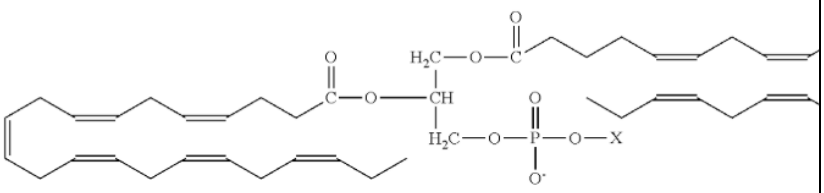
（四）涉案专利

专利 1：US8278351 Natural marine source phospholipids comprising polyun saturated fatty acids and their applications

摘要附图	
公开（公告）号	US08278351B2
标题-中文	包含多不饱和脂肪酸的天然海源磷脂及其应用
申请号	US13189714
申请日	2011-07-25
摘要-中文	现有的磷脂组合物不将二十碳五烯酸（EPA）和二十二碳六烯酸（DHA）掺入同一分子上，也不包含有益于各种健康和美容应用的黄酮类化合物。开发同一分子内含有 EPA 和 DHA 链的新型磷脂，与源自海洋或水生生物质的类黄酮化合物相结

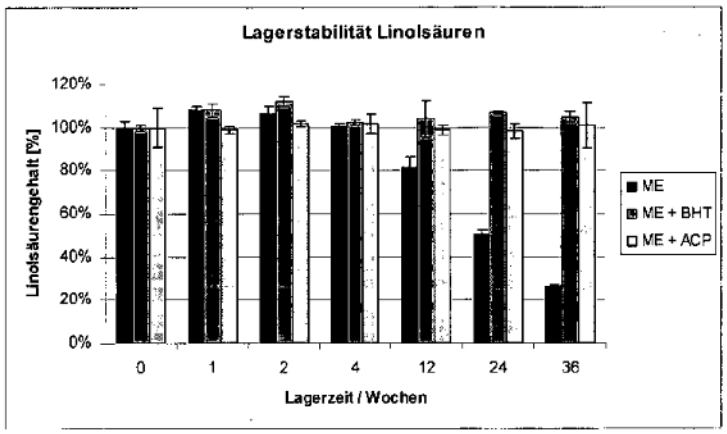
	合，用于药物、营养保健品和化妆品组合物。新型磷脂和类黄酮化合物通过解决各种疾病状态、改善细胞和膜功能、提供卓越的多不饱和脂肪酸和抗氧化特性，提供增强的健康益处和美观效果。
全球法律状态	失效
申请人	Fontini Sampalis
专利权人	Neptune Technologies & Bioressources, Inc.
失效日	2024.11.26

专利 2：US8383675 Natural marine source phospholipids comprising polyunsaturated fatty acids and their applications

摘要附图	
公开（公告）号	US8383675B2
标题-中文	包含多不饱和脂肪酸的天然海洋来源磷脂及其应用
申请号	US13545830
申请日	2012-07-10
摘要-中文	来自海洋或水生生物质的磷脂提取物具有治疗特性。磷脂提取物包含多种磷脂、脂肪酸、金属和一种新型黄酮类化合物。开发在同一分子上含有 EPA 和 DHA 的新型磷脂，与源自海洋或水生生物质的新型黄酮类化合物相结合，用于可治疗各种疾病状态并增强美观的组合物。新型磷脂和类黄酮化合物提供了优质的多不饱和脂肪酸，特别是含有 EPA 和 DHA，通过促进细胞功能和膜稳定性提供增强的健康益处和美观效果。

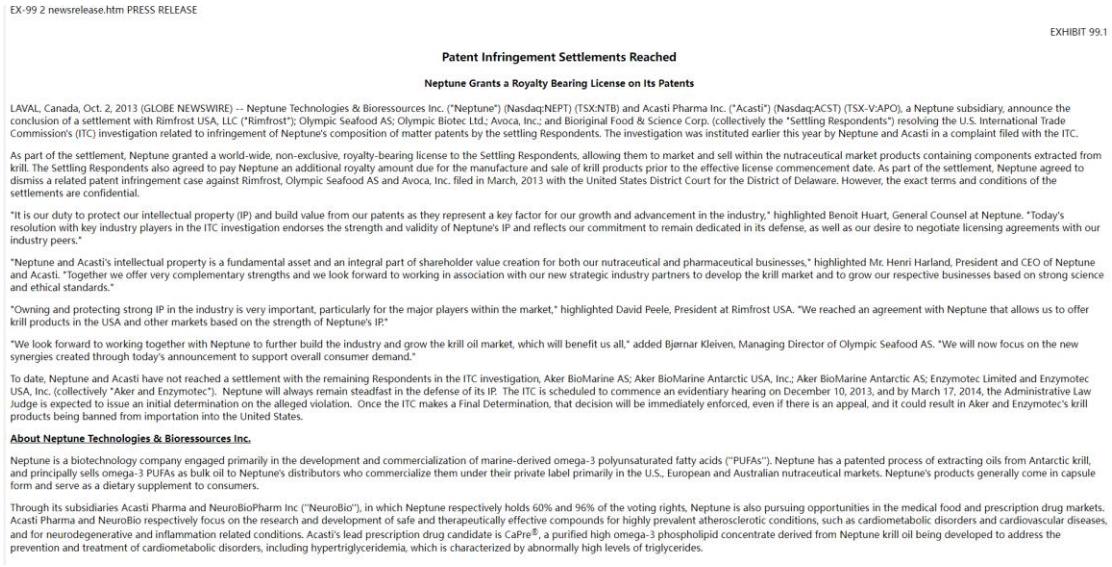
全球法律状态	有效
申请人	Aker Biomarine Antarctic AS、 DTI Group Ltd.
专利权人	AKER BIOMARINE ANTARCTIC AS
（预计）失效日	2032-07-09

专利 3： EP2301523 Galenische Formulierung in kolloidaler Form

摘要附图	 Figur 1
公开（公告）号	EP2301523A1
标题-中文	胶体药物制剂
申请号	EP09012046.0
申请日	2009-09-22
摘要-中文	胶体形式的 Galenic 制剂包含 0.1%～10％重量的亚油酸，5%～65％重量的包含表面活性剂和辅助表面活性剂的混合物和 20%～95％重量的水，其中表面活性剂和辅助表面活性剂包含非 - 阴离子表面活性剂。
全球法律状态	无效
申请人	Dr. August Wolff GmbH & Co. KG Arzneimittel
专利权人	Dr. August Wolff GmbH & Co. KG Arzneimittel
失效日	2011.4.28

（五）案件进程

2023 年 7 月，Neptune 与 Acasti 在特拉华法院提起诉讼，同步向 ITC 提交 337 调查申请 ；2024 年 1 月，Aker 在挪威奥斯陆法院反诉'351 专利无效，主张其技术属“现有技术”。2024 年 3 月，加拿大联邦法院批准 Neptune 临时禁令（File No. T-567-24），冻结 Aker 在北美销售涉诉产品；2024 年 6 月 ITC 启动技术验证程序，要求双方提交工艺比对报告。Neptune Technologies &Bio Resources Inc、Acasti Pharma Inc 诉 Aker Biomarine 案形成“四线并行”战局，在美国特拉华法院审理侵权赔偿+ITC 调查进口禁令，在加拿大临时销售禁令执行，在挪威进行专利无效反诉+反垄断交叉指控，在欧盟 EPO 专利异议程序。[4]其中，特拉华法院程序处于证据开示（Discovery）阶段，未公布庭审日期，预计 2025 年底前作出最终裁决，若支持禁令将立即执行（即使上诉）。该案是磷虾产业链核心技术与全球市场份额的终极争夺，Neptune 以'351 专利为武器，通过多国司法程序围堵 Aker；而 Aker 则试图以专利无效+反垄断反击破局。案件结果将直接决定价值 30 亿美元的磷虾油市场准入规则，并成为海洋生物资源领域知识产权攻防的标杆性战役。



EX-99 2 newsrelease.htm PRESS RELEASE

EXHIBIT 99.1

Patent Infringement Settlements Reached

Neptune Grants a Royalty Bearing License on Its Patents

LAVAL, Canada, Oct. 2, 2013 (GLOBE NEWSWIRE) -- Neptune Technologies & Bioressources Inc. ("Neptune") (Nasdaq:NEPT) (TSX:NTB) and Acasti Pharma Inc. ("Acasti") (Nasdaq:ACST) (TSX-V:APO), a Neptune subsidiary, announce the conclusion of a settlement with Rimfrost USA, LLC ("Rimfrost"); Olympic Seafood AS; Olympic Biotec Ltd.; Avoca, Inc.; and Bioriginal Food & Science Corp. (collectively the "Settling Respondents") resolving the U.S. International Trade Commission's (ITC) investigation related to infringement of Neptune's composition of matter patents by the settling Respondents. The investigation was instituted earlier this year by Neptune and Acasti in a complaint filed with the ITC.

As part of the settlement, Neptune granted a world-wide, non-exclusive, royalty-bearing license to the Settling Respondents, allowing them to market and sell within the nutraceutical market products containing components extracted from krill. The Settling Respondents also agreed to pay Neptune an additional royalty amount due for the manufacture and sale of krill products prior to the effective license commencement date. As part of the settlement, Neptune agreed to dismiss a related patent infringement case against Rimfrost, Olympic Seafood AS and Avoca, Inc. filed in March, 2013 with the United States District Court for the District of Delaware. However, the exact terms and conditions of the settlements are confidential.

"It is our duty to protect our intellectual property (IP) and build value from our patents as they represent a key factor for our growth and advancement in the industry," highlighted Benoit Huart, General Counsel at Neptune. "Today's resolution with key industry players in the ITC investigation endorses the strength and validity of Neptune's IP and reflects our commitment to remain dedicated in its defense, as well as our desire to negotiate licensing agreements with our industry peers."

"Neptune and Acasti's intellectual property is a fundamental asset and an integral part of shareholder value creation for both our nutraceutical and pharmaceutical businesses," highlighted Mr. Henri Harland, President and CEO of Neptune and Acasti. "Together we offer very complementary strengths and we look forward to working in association with our new strategic industry partners to develop the krill market and to grow our respective businesses based on strong science and ethical standards."

"Owning and protecting strong IP in the industry is very important, particularly for the major players within the market," highlighted David Peele, President at Rimfrost USA. "We reached an agreement with Neptune that allows us to offer krill products in the USA and other markets based on the strength of Neptune's IP."

"We look forward to working together with Neptune to further build the industry and grow the krill oil market, which will benefit us all," added Bjørnar Kleiven, Managing Director of Olympic Seafood AS. "We will now focus on the new synergies created through today's announcement to support overall consumer demand."

To date, Neptune and Acasti have not reached a settlement with the remaining Respondents in the ITC investigation, Aker BioMarine AS; Aker BioMarine Antarctic USA, Inc.; Aker BioMarine Antarctic AS; Enzymotec Limited and Enzymotec USA, Inc. (collectively "Aker and Enzymotec"). Neptune will always remain steadfast in the defense of its IP. The ITC is scheduled to commence an evidentiary hearing on December 10, 2013, and by March 17, 2014, the Administrative Law Judge is expected to issue an initial determination on the alleged violation. Once the ITC makes a Final Determination, that decision will be immediately enforced, even if there is an appeal, and it could result in Aker and Enzymotec's krill products being banned from importation into the United States.

About Neptune Technologies & Bioressources Inc.

Neptune is a biotechnology company engaged primarily in the development and commercialization of marine-derived omega-3 polyunsaturated fatty acids ("PUFAs"). Neptune has a patented process of extracting oils from Antarctic krill, and principally sells omega-3 PUFAs as bulk oil to Neptune's distributors who commercialize them under their private label primarily in the U.S., European and Australian nutraceutical markets. Neptune's products generally come in capsule form and serve as a dietary supplement to consumers.

Through its subsidiaries Acasti Pharma and NeuroBioPharm Inc ("NeuroBio"), in which Neptune respectively holds 60% and 96% of the voting rights, Neptune is also pursuing opportunities in the medical food and prescription drug markets. Acasti Pharma and NeuroBio respectively focus on the research and development of safe and therapeutically effective compounds for highly prevalent atherosclerotic conditions, such as cardiometabolic disorders and cardiovascular diseases, and for neurodegenerative and inflammation related conditions. Acasti's lead prescription drug candidate is CaPre®, a purified high omega-3 phospholipid concentrate derived from Neptune krill oil being developed to address the prevention and treatment of cardiometabolic disorders, including hypertriglyceridemia, which is characterized by abnormally high levels of triglycerides.

（六）风险预警

Neptune 诉 Aker 案的核心争议围绕磷虾油低温萃取技术（如 US8,278,351 专利）及磷脂组合物专利的有效性。Aker 抗辩称其超临界 CO_2工艺与 Neptune 的丙酮法存在“实质性差异”，但诉讼过程暴露了工艺专利的强渗透性——涉案专利权

[4] https://www.sec.gov/Archives/edgar/data/1401395/000117184313003876/newsrelease.htm

利要求覆盖磷虾油提取的活性成分保留、纯度控制等基础环节。汕尾企业若引进类似生物提取技术（如水产加工中的活性成分分离或牡蛎蛎提纯工艺），需警惕工艺步骤、参数落入海外专利保护范围，引发侵权索赔。

Neptune 诉 Aker 案案件形成“四线并行”诉讼格局。其中加拿大联邦法院冻结 Aker 销售涉诉产品的临时禁令（2024 年 3 月），表明了北美市场准入的脆弱性。汕尾企业若使用国际设备或技术合作，可能因供应链专利问题遭遇连带诉讼，需承担跨国应诉的巨额成本。汕尾企业若通过国际供应链合作出口海产品红海湾养殖的石斑鱼或牡蛎加工品，可能因技术合作方专利问题遭遇连带诉讼，承担跨国应诉的巨额成本。

针对高危专利，可联合科研机构开发替代技术，规避“等同侵权”风险，汕尾的相关企业可以对石斑鱼育苗、牡蛎提纯等关键技术申请衍生专利（组合物、应用类）；同时供应链形成管控闭环，要求产品供应商提供专利合规证明；建立动态监测机制，跟踪海洋产业领域的全球诉讼，建立“高风险专利清单”，避免侵权，监控专利状态若专利失效，则开放使用。

二、高频原告

（一）原告简介

Martek Biosciences（马泰克生物科学公司，现属荷兰皇家帝斯曼集团）成立于 1985 年，总部位于美国马里兰州，是全球微生物油脂技术的领导者，以微生物为原料来开发、创新和销售高附加值营养产品，提高和改善人们的健康和保健水平，在该领域拥有领先地位。

在海洋生物技术领域 Martek 公司拥有在微生物、藻类基因学、发酵和下游加工等领域的专有技术。Martek 专注于藻类 DHA 提取技术，通过专利菌种（裂壶藻）生产高纯度 DHA 藻油，应用于婴幼儿奶粉和保健品，被帝斯曼收购后，专利被其充分运用，使帝斯曼的藻油 DHA 占全球原料市场 40%份额，该技术被帝斯曼整合后，仍以 Life’s DHA®品牌供应中国市场。其核心专利布局覆盖微生物菌种筛选、发酵工艺优化及下游应用。Martek 拥有非常丰富的专利布局，早在 1985 至 2009 年期间就已经申请全球专利 443 项，其中美国占 45%，重点技术包括低氯培养基工艺、基因工程改造微生物合成 DHA 等，并通过持续分案申请延长专利保护期。研发方面，Martek 以隐甲藻和破囊壶菌为原料，开发了封

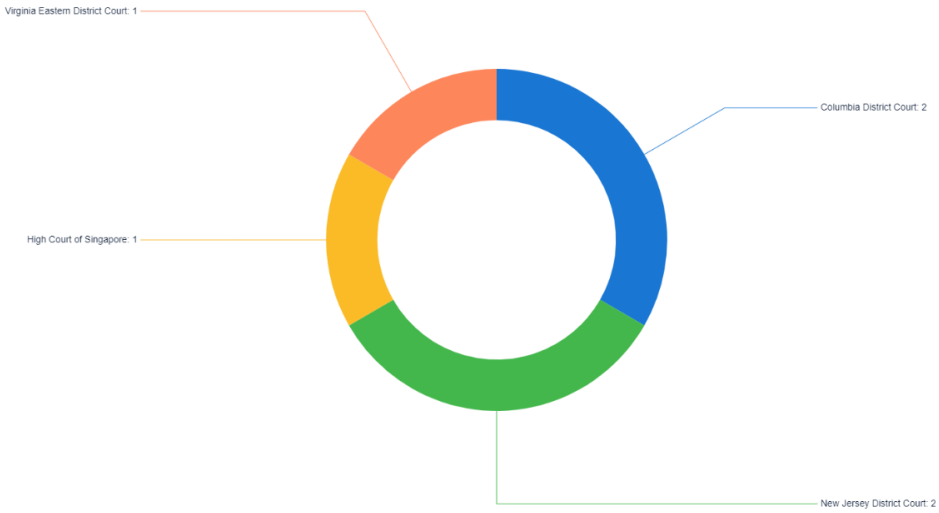
闭式发酵工艺，实现 DHA 油脂高效量产，并拓展至婴幼儿奶粉、保健品等应用领域；研发高峰时期，单年申请微生物合成专利 51 项，强化了在藻油市场的技术壁垒。诉讼策略上，Martek 积极发起专利侵权诉讼以维护垄断地位，其中起诉禾元生物侵犯其重组蛋白技术专利，成功获美国法院禁令禁止对方低聚合度产品在美销售；同时因品牌“Neuromins”在华遭抢注，与中国企业纽曼思陷入长达 8 年的商标权纠纷。

荷兰皇家帝斯曼集团（Royal DSM）以生命科学，为核心的国际巨头，营养与健康领域保护维生素、Omega-3 脂肪酸（如藻油 DHA）、益生菌等人类与动物营养产品。帝斯曼通过收购 Martek Biosciences，掌握藻油 DHA/ARA 提取专利（如裂壶藻发酵工艺），占据全球 40%藻油原料市场。Martek 的专利市场价值高，被收购后帝斯曼仍在全球范围内维护 Martek 的 500+项专利。

（二）诉讼情况

被告一专利数量（数据来源：智慧芽）

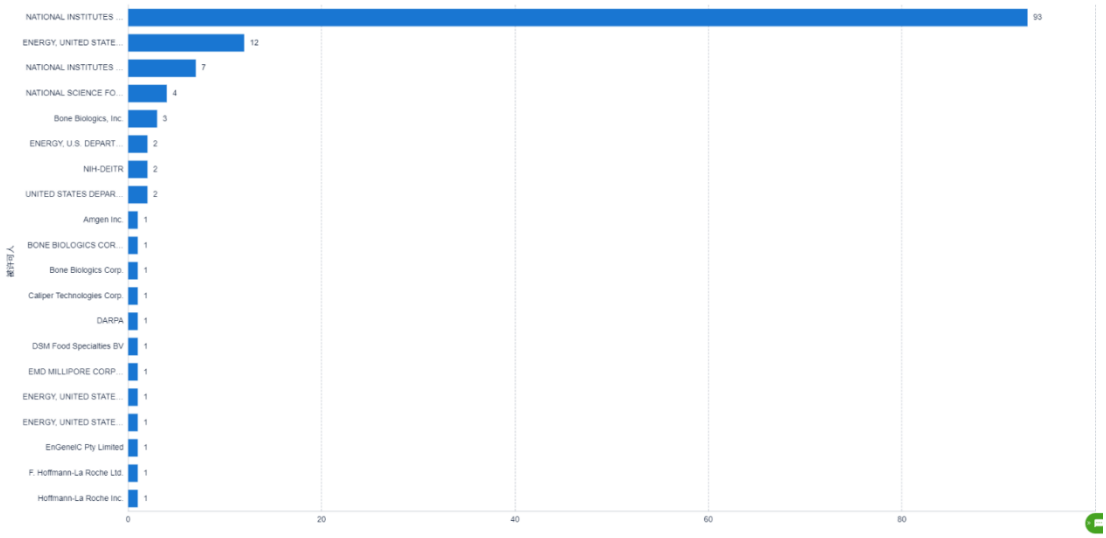
Martek Biosciences 的被告中，Evolve Laboratories, Inc.等直接竞品公司，涉诉专利多为藻油 DHA 提取工艺及微生物菌种应用，诉讼目的是阻止竞品使用类似技术生产 DHA，维护其在婴幼儿营养品市场的垄断地位。被告中还包括实验室，涉及到重组蛋白生产工艺等技术秘密争议。其诉讼高发的原因是 artek 拥有 443 项全球专利，覆盖从菌种筛选、发酵工艺到应用方法的全链条技术，任何竞品进入市场均可能触发侵权；以及藻油 DHA 全球需求超 200 亿美元，Martek 通过诉讼维护市场定价权。



审理法院－专利数量（数据来源：智慧芽）

Martek 的专利诉讼集中分布于三个主要法院，体现了其全球化维权的知识产权策略，其中美国哥伦比亚地区法院（Columbia District Court）占比最高，该法院以审理复杂专利案件著称，Martek 在此发起 3 起诉讼，主要针对 DHA 提取工艺侵权及微生物菌种专利；Martek 在新泽西地区法院（New Jersey District Court）发起 2 起诉讼，新泽西是众多生物技术公司总部所在地，Martek 在此就近起诉降低应诉成本，加快庭审进度。Martek 在新加坡高等法院（High Court of Singapore）发起 1 起诉讼，通过新加坡辐射亚太市场，遏制区域仿制品流通。

（三）专利情况



被许可人—专利数量（数据来源：智慧芽）

Martek 的专利策略核心是“构建全产业链专利壁垒”，并通过“授权许可”而非直接生产来实现技术垄断的商业化，美国国立卫生研究院（NIH）、美国能源部（DOE）等政府及研究机构是最大的被许可人，与顶级研究机构合作，利用其资源进行更深度的应用研究，反哺自身技术，并提前绑定未来的行业标准和合作伙伴。被许可方名单中还包含 Evonik（赢创）、Danisco（杜邦营养部门）等化工巨头，以及 Algenol 等藻类技术公司。这表明 Martek 的许可策略是非排他性的，通过向多个不同领域的行业领导者授权，快速渗透各个应用市场，最大化专利价值，形成“技术标准”。新企业无论是通过自主研发还是其他途径，其技术方案很可能在菌种、发酵工艺、提取方法乃至最终产品的应用上，落入 Martek 庞大专利网的保护范围。进行“专利规避设计”（Design Around）的难度和成本极高。Martek（帝斯曼）的案例充分展示了在高科技生物制造领域，知识产权不仅是保护创新的盾牌，更是争夺市场、压制对手的最强有力的战略武器。

（四）风险预警

汕尾在“生海”转化为“熟海”阶段，汕尾企业会进一步开拓海洋资源，会对海产品的深加工、对海洋生物资源的深度开发，汕尾生物提取技术相关的企业在出海时需要警惕三重知识产权风险，在技术侵权方面，若引入国际生物提取技术，需警惕落入“专利丛林”陷阱，汕尾企业的海产品加工提取技术中使用特定工艺参数或成分标准，可能触发侵权诉讼；在国际诉讼层面，汕尾企业的海洋生物提取产品若出口欧美可能面临“管辖权狙击”——美国哥伦比亚法院（判赔率高、

审理快）、临时禁令威胁（可能会导致全年订单损失），且跨国应诉单案成本高；在供应链风险上，“技术引进+代工生产”模式存在隐患，进口设备若内置专利技术或未核查外方品牌权属，将引发确权拉锯战。

主动防御需多管齐下，在技术端联合科研机构开发替代工艺，参与国际标准制定削弱既有壁垒；在法律端实施“FTO 四维筛查”，包括专利状态、诉讼史、权利要求比对、替代方案；供应链环节要求外方提供专利合规承诺函，签署侵权责任分担协议；同时建议建立动态监测平台，跟踪全球诉讼并生成高风险专利清单。