

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ARLA FOODS AMBA,
Petitioner

v.

LEPRINO FOODS COMPANY,
Patent Owner.

IPR2025-01199
Patent 11,825,860

PETITIONER'S PRELIMINARY REPLY

Mail Stop PATENT BOARD
Patent Trial and Appeal Board
U.S. Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

EXHIBIT LIST

No.	Exhibit
Ex1001	U.S. Patent No. 11,825,860 (“’860 patent”)
Ex1002	File History of the ’860 patent
Ex1003	Declaration of Dr. Mark Etzel, Ph.D.
Ex1004	Curriculum Vitae of Dr. Mark Etzel, Ph.D.
Ex1005	PCT Application Publication No. WO2021/136785 (“Nielsen785”)
Ex1006	PCT Application Publication No. WO2018/115520 (“Bertelsen”)
Ex1007	PCT Application Publication No. WO2020/002450 (“Nielsen450”)
Ex1008	“Glycoproteomic and Lipidomic Characterization of Industrially Produced Whey Protein Phospholipid Concentrate with Emphasis on Antimicrobial Xanthine Oxidase, Oxylipins and Small Milk Fat Globules,” Dairy, Vol. 3, Issue 2, April 20, 2022, by Ozturk, et al. (“Ozturk”)
Ex1009	“pH-Dependent Molecular Weight Changes of κ -casein Glycomacropeptide and Its Preparation by Ultrafiltration,” Milchwissenschaft, Vol. 48, Issue 4, April 1993, by Kawasaki, et al. (“Kawasaki”)
Ex1010	“APV LeanCreme™ Microparticulation of Whey Protein with SPX Flow Technology, White Paper,” November 2012, (“LeanCreme”), Wayback Machine Capture, June 24, 2016, at https://web.archive.org/web/20160624161613/https://www.spxflow.com/en/assets/pdf/LeanCreme_22008_04_11_2012_GB_tcm11-7662.pdf
Ex1011	Affidavit of Tanya Zeif
Ex1012	“Fractionation of Whey Proteins and Caseinomacropeptide by Means of Enzymatic Crosslinking and Membrane Separation Techniques,” Journal of Food Engineering, Vol. 67, Issues 1-2, March 2005, by Tolkach, et al.

No.	Exhibit
Ex1013	“Cheese Whey Tangential Filtration Using Tubular Mineral Membranes,” Chemical Papers, Vol. 70, pp. 325-32, December 28, 2016, by Hinkova et al.
Ex1014	“A Study of Various Chemical Pretreatments to Fractionate Lipids from Whey Protein Phospholipid Concentrate,” Journal of Dairy Science, Vol. 104, Issue 12, December 2021, by Swaminathan et al.
Ex1015	U.S. Pat. No. 5,280,107 to Kawasaki et al., issued January 18, 1994
Ex1016	U.S. Pat. No. 4,734,287 to Singer et al., issued March 29, 1988
Ex1017	PCT Application Publication No. WO2015059245
Ex1018	“Cheese pH—What’s Behind the Rise and Fall?” Dairy Pipeline, Vol. 14, No. 4, December 2002, by Mark Johnson
Ex1019	U.S. Pat. Appl. Pub. No. US2011/0003975, published January 6, 2011 to Arase et al.
Ex1020	U.S. Pat. Appl. Pub. No. US2016/0058025, published March 3, 2016 to Christensen et al.
Ex1021	Declaration of Tanja Christine Jæger
Ex1022	Declaration of June Ann Munford
Ex1023	“A Differential Scanning Calorimetric Study of the Thermal Denaturation of Bovine β -lactoglobulin Thermal Behaviour at Temperatures Up to 100°C,” Biochimica et Biophysica Acta, Vol. 624, pp. 40-50, July 24, 1980, by de Wit et al.

I. PO'S CONSTRUCTION OF "CHEESE WHEY RETENTATE COMPOSITION" IS OVERLY NARROW

PO conflates "cheese whey retentate" and "cheese whey retentate composition" and then narrows both to the "portion of cheese whey that is captured by the filter," effectively reading "composition" out of the claims. *See* POPR, 12, The intrinsic record does not support that rewrite. The claims differentiate between "cheese whey retentate" and "cheese whey retentate composition," evidencing that they are not identical concepts. *See, e.g.,* Ex1001, cls. 8-9. PO's same construction for both terms cannot be reconciled with its own admission that a "cheese whey retentate composition" may "optionally...comprise additional components." *See* POPR, 12. Having acknowledged that the claimed composition may permissibly include additives and be subjected to processing while still remaining a "cheese whey retentate composition," PO cannot draw an artificial line at the point of filtration.

The plain meaning of a "cheese whey retentate composition" is a composition formed to include cheese whey retentate. Nothing in the intrinsic record limits the composition to the immediate output of a single filtration step or excludes retentate-derived processing. Rather, PO's construction improperly excludes preferred embodiments. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996). Construing "cheese whey retentate composition" to encompass the retentate-derived composition as formed and processed aligns with the claim language and specification.

The specification describes filtering cheese whey to form a retentate and then uses that retentate in downstream operations to form a “reduced-GMP cheese whey retentate composition,” such as through enzymatic hydrolysis or microfiltration processes. Ex1001, 6:29-31, 7:36-39, 8:1-14, 15:61-67. Notably, once GMP levels have been reduced to obtain “reduced-GMP cheese whey retentate composition,” additional processing steps may occur prior to heat treatment. Particularly, water may be added to adjust the protein content of the liquid solution before the denaturation step (*id.*, Example 2, 17:18-33). This expressly demonstrates the “cheese whey retentate composition” may be further modified prior to being heated, reinforcing that the claimed process encompasses intervening adjustments before denaturation.

“Cheese whey retentate composition” is a composition formed using cheese whey retentate, not limited to the immediate retentate after filtration.

II. PO INCORRECTLY INTERPRETS “BLG:ALA RATIO OF GREATER THAN 5.00” AS EXCLUDING ALA REPORTED AS ZERO BECAUSE OF DETECTION LIMITS OR ROUNDING

PO’s ratio arguments rest on misreading the intrinsic record and basic analytical metrology. Correctly understood, the claimed ratio does not exclude a non-zero denominator that is reported as zero due to detection limits or rounding.

As a threshold matter, PO’s position hinges on Table 13 from Nielsen⁷⁸⁵’s Example 7—an embodiment addressing mixtures of WPI and BLG—that is distinct from Example 1, which the Petition relies upon and addresses dense whey protein

nanogels. Pet. 14-20, 22-23; *compare* Ex1005, 88:10-90:20 (Example 1), *with id.*, 105:4-107:8 (Example 7). Table 13 of Nielsen⁷⁸⁵ cannot negate the composition of the source powder identified “for preparation of whey protein nanogels,” which itself reports nonzero ALA. As the Petition repeatedly explains, Nielsen⁷⁸⁵ consistently discloses a source powder with 96.5% BLG and 0.2% ALA by protein weight, resulting in BLG:ALA ratio that is orders of magnitude greater than 5. Pet. 15-17. Moreover, where ALA is reported as “<0.5%,” a POSITA would have understood that as a nonzero upper bound, likewise yielding ratios far exceeding 5. *Id.*, 36-37.

Even when considered in the context of Table 13, PO’s reliance on the “0% ALA” entry as showing literal absence of ALA is incorrect. The “0%” designation does not establish the literal absence of ALA. Rather, a POSITA would have recognized “0%” as a below-detection/rounded reporting convention, not proof of literal absence—particularly where the very powder used to prepare the solutions lists ALA at 0.2% and the other ALA values reported in Table 13 are all expressed as integers (e.g., 2%, 3%, or 5%). *See* Pet. 15-17, 36-37; *see* Ex1005, Tables 1 and 13. Additionally, Patent Owner’s invocation of *Ashland Oil* is inapposite: that case addressed integer counts of methylene bridges, which cannot exist in fractional amounts. *See* POPR, 13 (citing *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, n.22 (Fed. Cir. 1985)). Here, the values are weight percentages subject to detection limits and rounding.

Dated: November 18, 2025

Respectfully submitted,

/ Jessica Kaiser /

Jessica Kaiser

Reg. No. 58,937

Attorney for Petitioner

Perkins Coie LLP

1900 Sixteenth Street, Ste. 1400

Denver, CO 80202-5255

CERTIFICATE OF SERVICE

I hereby certify that on November 18, 2025 true and correct copies of the foregoing PETITIONER’S PRELIMINARY REPLY was served via electronic mail upon the following counsel of record for Patent Owner:

Justin Krieger - krieger-ptab@ktslaw.com
Darin J. Gibby - dgibby@ktslaw.com
Nicoletta Kennedy - nkennedy@ktslaw.com
Alexa J. Hunter- ajhunter@ktslaw.com
Megan Saia - msaia@ktslaw.com
IPR2025-01199@ktslaw.com

Dated: November 18, 2025

Respectfully submitted,

/ Jessica Kaiser /

Jessica Kaiser
Reg. No. 58,937

Perkins Coie LLP
1900 Sixteenth Street, Ste. 1400
Denver, CO 80202-5255