

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
08 May 2025 (08.05.2025)



(10) International Publication Number
WO 2025/096830 A1

(51) International Patent Classification:

C07K 14/405 (2006.01) C12N 1/12 (2006.01)
C11B 1/00 (2006.01) C12N 15/82 (2006.01)

(21) International Application Number:

PCT/US2024/053965

(22) International Filing Date:

31 October 2024 (31.10.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/595,229 01 November 2023 (01.11.2023) US

(71) Applicant: **CHECKERSPOT, INC.** [US/US]; 1250 Marina Village Parkway, Alameda, California 94501 (US).

(72) Inventors: **ZHAO, Xinhua**; c/o Checkerspot, Inc., 1250 Marina Village Parkway, Alameda, California 94501 (US).
ZHOU, Xiaoying; c/o Checkerspot, Inc., 1250 Marina Village Parkway, Alameda, California 94501 (US).
CORREA, Mona; c/o Checkerspot, Inc., 1250 Marina Village Park-

way, Alameda, California 94501 (US). **GATES, Daniel**; c/o Checkerspot, Inc., 1250 Marina Village Parkway, Alameda, California 94501 (US). **PARKER IV, Leon H.**; c/o Checkerspot, Inc., 1250 Marina Village Parkway, Alameda, California 94501 (US). **FRANKLIN, Scott**; c/o Checkerspot, Inc., 1250 Marina Village Parkway, Alameda, California 94501 (US). **DESTAILLATS, Frederic**; c/o Checkerspot, Inc., 1250 Marina Village Parkway, Alameda, California 94501 (US). **RAKITSKY, Walter**; c/o Checkerspot, Inc., 1250 Marina Village Parkway, Alameda, California 94501 (US).

(74) Agent: **MEYER, Mercedes K.** et al.; BANNER & WITCOFF, LTD., 1100 13th Street, N.W., Suite 1200, Washington, District of Columbia 20005 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY,

(54) Title: REGIOSPECIFIC TRIGLYCERIDE OILS AND BLENDS AND RELATED FOOD AND NUTRITION APPLICATIONS

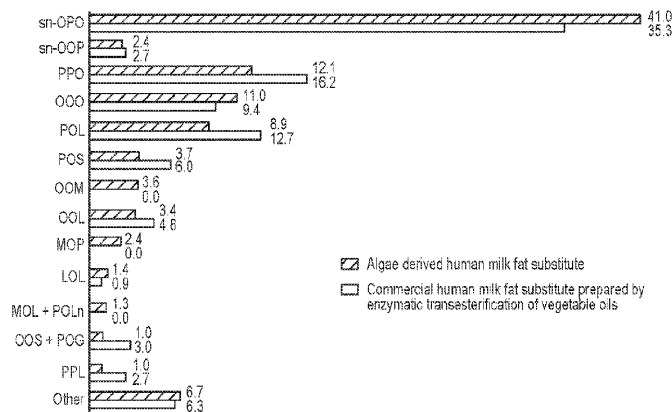


FIG. 13

(57) Abstract: Provided herein are triglyceride oil compositions enriched in 1,3-dioleoyl-2-palmitoylglycerol (OPO) for use in food applications and infant nutrition formulations. Further provided herein are methods of producing non-naturally occurring triglyceride oil compositions enriched in OPO from non-naturally occurring microorganisms and applications thereof in human and animal food applications, infant formulations, and nutritional supplements.

[Continued on next page]

MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA,
NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO,
RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS,
ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*
- *with sequence listing part of description (Rule 5.2(a))*