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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 March 2009 (12.03.2009)

PCT

(10) International Publication Number
WO 2009/030821 A3

(51) International Patent Classification:
C12P 7/64 (2006.01)

(21) International Application Number:
PCT/FI2008/050496

(22) International Filing Date:
5 September 2008 (05.09.2008)

(25) Filing Language: Finnish

(26) Publication Language: English

(30) Priority Data:
20075618 7 September 2007 (07.09.2007) FI
60/967,795 7 September 2007 (07.09.2007) US

(71) Applicant *(for all designated States except US)*: **HELSINKI UNIVERSITY OF TECHNOLOGY** [FI/FI]; PO Box 1000, FI-02015 TKK (FI).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **PASTINEN, Ossi** [FI/FI]; Pulmutie 3, FI-02460 Kantvik (FI). **LAAKSO, Simo** [FI/FI]; Hemminginkatu 10, FI-20380 Turku (FI). **HOKKANEN, Sanna** [FI/FI]; Ramsaynkuja 3 B 11, FI-02780 Espoo (FI). **VAHVASELKÄ, Marjatta** [FI/FI]; Adolf Lindforsin tie 2 C 9, FI-00400 Helsinki (FI).

(74) Agent: **SEPPO LAINE OY**; Itämerenkatu 3 B, FI-00180 Helsinki (FI).

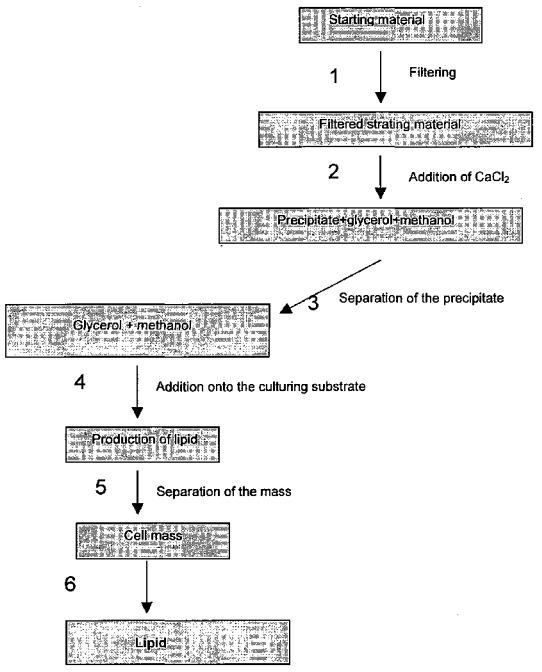
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

[Continued on next page]

(54) Title: PROCESS FOR THE FERMENTATION OF A LIPID FROM A STARTING MATERIAL, WHICH COMPRISES ALCOHOL, SOAPS AND/OR FATTY ACIDS, INVOLVING A STEP OF PRECIPITATING ALKALINE EARTH METAL SOAPS

Figure 1



(57) Abstract: The present invention concerns a process for forming a lipid or a mixture of lipids from a starting material, which comprises at least one alcohol and a soap or a soap precursor, the process comprising adding a metal-ion forming agent to the starting material, whereby a mixture is formed, which contains an insoluble phase and a liquid phase, separating the insoluble phase from the liquid phase, contacting the lipid-producing microorganism with the liquid phase on a culturing substrate, whereby the microorganism cells begin producing lipid, and collecting the lipids. The present invention also concerns a process for forming a lipid or a mixture of lipids from an alcohol-containing liquid phase, which comprises at least one alcohol.

WO 2009/030821 A3

ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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))*

(88) Date of publication of the international search report:
29 October 2009