

#### Search history

Search 1: SFT=((biodiesel or (bio w1 diesel) or biofuel or (bio w1 fuel))) (Results 26391)  
Search 2: 1 and (wash\* w3 water) (Results 2817)  
Search 3: 2 and decantation (Results 307)  
Search 4: 3 and (glicerol or glycerol) (Results 222)  
Search 5: 4 and pd<20141217 (Results 181)  
Search 6: 5 and (process or method) (Results 179)  
Search 7: 6 and purificat\* (Results 147)

**Title:** **PROCESS** FOR THE PRODUCTION OF FINE CHEMICALS

**Abstract:** The present invention relates to a **process** for the production of fine chemicals in a microorganism, a plant cell, a plant, a plant tissue or in one or more parts thereof. The present invention relates further to a **process** for the control of the production of fine chemicals in a microorganism, a plant cell, a plant, a plant tissue or in one or more parts thereof. The invention furthermore relates to nucleic acid molecules, polypeptides, nucleic acid constructs, vectors, antisense molecules, antibodies, host cells, plant tissue, propagation material, harvested material, plants, microorganisms as well as agricultural compositions and to their use.

**Classifications:**

**International (IPC 8-9):** A01H3/04 A01H5/00 A23K1/00 A23K1/16 A23L1/00 A61K31/047 A61K8/34 A61K8/97 C07K14/24 C07K14/245 C07K14/395 C07K14/415 C07K14/425 C07K16/12 C07K16/14 C07K16/16 C12N1/15 C12N1/19 C12N1/21 C12N15/00 C12N15/31 C12N15/52 C12N15/63 C12N15/74 C12N15/79 C12N15/82 C12N5/04 C12N5/10 C12N9/00 C12P1/00 C12P1/04 C12P13/00 C12P13/04 C12P13/08 C12P13/12 C12P13/14 C12P13/22 C12P19/00 C12P21/02 C12P23/00 C12P7/00 C12P7/02 C12P7/64 C12Q1/02 C12Q1/68 G01N33/50 G01N33/53 G01N33/56

G01N33/566 (Advanced/Invention);

C12N15/52 (Advanced/Non-invention);

A01H3/00 A01H5/00 A23K1/00 A23K1/16 A23L1/00 A61K31/045

A61K8/30 A61K8/96 C07K14/19 C07K14/195 C07K14/37

C07K14/415 C07K16/12 C07K16/14 C07K16/16 C12N1/15 C12N1/19

C12N1/21 C12N15/00 C12N15/31 C12N15/52 C12N15/63 C12N15/82

C12N5/04 C12N5/10 C12N9/00 C12P1/00 C12P1/04 C12P13/00

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G01N33/566 (Core/Invention);

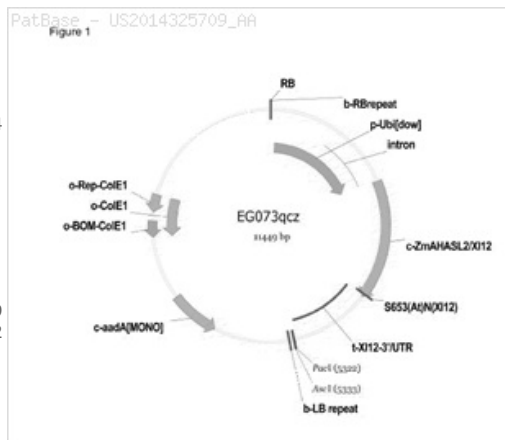
C12N15/52 (Core/Non-invention)

**International (IPC 1-7):** C07K14/245 C07K14/395 C12N15/00 C12N15/82 C12N15/82 C12P1/00 C12P19/00 C12P19/00 C12P21/00 C12P21/00

**CPC:** C07K14/425 C12Q1/6895 C12Q1/025 C12Q1/6813 C12Q1/68 C12P13/06 C12P13/08 C12Y101/05002 C12P1/00 C07K14/245 C07K14/395 C12N15/8243 C12N15/825 C12P23/00 C12N15/8253 Y02A50/473

**European:** C07K14/245 C07K14/395 C07K14/425 C12N15/82C4B C12N15/82C4B C12N15/82C4B10A C12N15/82C4B8 C12P1/00 C12P23/00 C12Q1/68M10F

**US:** 252/1 426/531 435/106 435/108 435/110 435/115 435/252.2 435/29 435/320.1 435/41 435/419 435/6.1 435/6.11 435/69.1 530/300 530/387.1 536/23.1 800/298



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AR053108 AA        | 20070425         | AR2005P105521      | 20051222         |
| AR058785 AA        | 20080227         | AR2005P102780      | 20050704         |
| AU2005321630 AA    | 20060706         | AU20050321630      | 20050629         |
| AU2005339243 AA    | 20070809         | AU20050339243      | 20051219         |
| AU2005339243 AH    | 20090305         | AU20050339243      | 20051219         |
| AU2012200829 AA    | 20120301         | AU20120200829      | 20120213         |
| AU2012207009 AA    | 20120816         | AU20120207009      | 20120726         |
| BRPI0512818 A      | 20071023         | BR2005PI12818      | 20050629         |
| BRPI0519994 A      | 20080916         | BR2005PI19994      | 20051219         |
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| CA2585798 AA       | 20070427         | CA20052585798      | 20051219         |
| CL2005003416 A1    | 20120601         | CL20050003416      | 20051222         |
| CN101421412 A      | 20090429         | CN200580043604     | 20051219         |
| CN101675069 A      | 20100317         | CN200580029657     | 20050629         |
| EP1765857 A2       | 20070328         | EP20050850205      | 20050629         |
| EP1953235 A2       | 20080806         | EP20070107662      | 20070508         |
| EP1953235 A3       | 20081119         | EP20070107662      | 20070508         |
| EP1974049 A2       | 20081001         | EP20050857992      | 20051219         |
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| EP2096177 A2       | 20090902         | EP20090156646      | 20051219         |
| EP2096177 A3       | 20100113         | EP20090156646      | 20051219         |
| EP2199304 A1       | 20100623         | EP20090179273      | 20051219         |
| EP2368905 A2       | 20110928         | EP20110161547      | 20051219         |
| EP2368905 A3       | 20120829         | EP20110161547      | 20051219         |
| MX2007007040 A1    | 20081024         | MX20070007040      | 20051219         |
| US2014325709 AA    | 20141030         | US20110239584      | 20110922         |
| US8541208 BA       | 20130924         | US20060644015      | 20061221         |
| WO06069610 A2      | 20060706         | WO2005EP07080      | 20050629         |
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| WO06069610 A8      | 20090305         | WO2005EP07080      | 20050629         |
| WO07087815 A2      | 20070809         | WO2005EP13673      | 20051219         |
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**Priority:**

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| EP20050059939  | 20050627 | EP20050105992 | 20050627 | EP20050105993 | 20050627 |
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| EP20050105993  | 20050629 | WO2005EP07080 | 20050629 | AU20050339243 | 20051219 |
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| US20060801017P | 20060517 | US20060644015 | 20061221 | US20110239584 | 20110922 |
| AU20120200829  | 20120213 | AU20120207009 | 20120726 |               |          |

**Probable Assignee:** METANOMICS GMBH

**Assignee(s):** (std): BLAU ASTRID ; KAMLAGE BEATE ; LOOSER RALF ; METANOMICS GMBH ; PLESCH GUNNAR ; PUZIO PIOTR ; WENDEL BIRGIT ; SCHMITZ OLIVER

**Inventor(s):** (std): BLAU ASTRID ; KAMLAGE BEATE ; LOOSER RALF ; PLESCH GUNNAR ; PUZIO PIOTR ; SCHMITZ OLIVER ; WENDEL BIRGIT ; RALF LOOSER ; PIOTR PUZIO ; OLIVER SCHMITZ ; GUNNAR PLESCH ; BIRGIT WENDEL ; BEATE KAMLAGE ; ASTRID BLAU ; KAMIAGE BEATE

**Agent(s):** WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; ROBIC; HARNECKER; FITZNER UWE; NOVAK DRUCE CONNOLLY BOVE AND QUIGG LLP

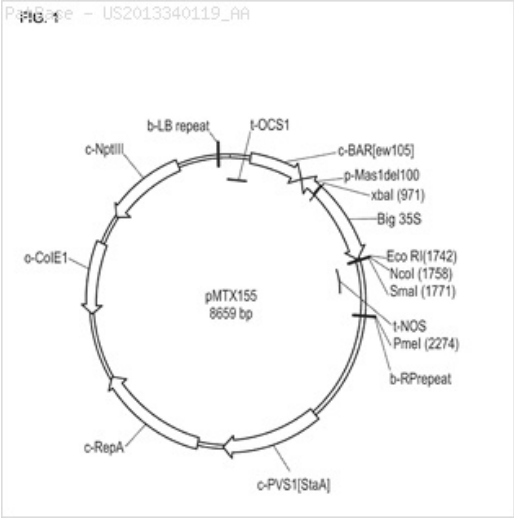
**Designated states:** AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MT MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: **METHOD** FOR INCREASING YIELD AND FINE CHEMICAL PRODUCTION IN PLANTS

**Abstract:** A **method** for enhancing yield-related traits in plants by modulating expression in a plant of a nucleic acid encoding a POI (Protein Of Interest) polypeptide is provided. **Methods** for the production of plants having modulated expression of a nucleic acid encoding a DnaJ-like chaperone polypeptide are provided, in which plants have enhanced yield-related traits compared to control plants. Nucleic acids encoding DnaJ-like chaperone, constructs comprising the same and uses thereof are also provided.

**Classifications:**

**International (IPC 8-9):** A01H1/00 A01H5/06 A01H5/10 C07H3/02 C07K14/415 C11B1/00 C12N15/05 C12N15/29 C12N15/82 C12N5/14 C12P1/00 C12P7/02 (Advanced/Invention); A01H5/00 (Advanced/Non-invention); A01H C07H C11B C12N C12P (Subclass/Invention)  
**CPC:** C12N15/8247 A23D9/02 C07K14/415 C11B1/10 C11C3/00 C11C3/003 C12N15/8245 C12P1/00 C12N15/8243 C12N15/8261 Y02A40/146  
**European:** A23D9/02 C07K14/415 C11B1/10 C11C3/00 C11C3/00B C12N15/82C4B2 C12N15/82C4B4  
**US:** 435/100 435/105 435/134 435/243 435/320.1 435/41 435/419 435/6.1 435/69.1 435/7.1 530/300 530/387.1 536/128 536/23.1 554/8 800/278 800/290 800/298



**Family:**

| Publication number | Publication date | Application number | Application date |
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| AR084726 AA        | 20130605         | AR2011P104137      | 20111104         |
| AU2010321223 AA    | 20110526         | AU20100321223      | 20101118         |
| AU2011324862 AA    | 20120510         | AU20110324862      | 20111027         |
| AU2011324862 AB    | 20130822         | AU20110324862      | 20111027         |
| CA2780079 AA       | 20110526         | CA20102780079      | 20101118         |
| CA2815341 AA       | 20130419         | CA20112815341      | 20111027         |
| CN103282500 A      | 20130904         | CN201180062790     | 20111027         |
| EP2635685 A1       | 20130911         | EP20110837655      | 20111027         |
| EP2635685 A4       | 20140521         | EP20110837655      | 20111027         |
| IN03588CN2013 A    | 20140905         | IN2013CN03588      | 20130507         |
| MX2013004944 A1    | 20130628         | MX20130004944      | 20111027         |
| US2013340119 AA    | 20131219         | US20110883450      | 20111027         |
| US2014259212 AA    | 20140911         | US20100510783      | 20101118         |
| WO11060920 A2      | 20110526         | WO2010EP06988      | 20101118         |
| WO11060920 A3      | 20110714         | WO2010EP06988      | 20101118         |
| WO11060920 A8      | 20120524         | WO2010EP06988      | 20101118         |
| WO12059849 A1      | 20120510         | WO2011B54792       | 20111027         |
| ZA201304041 A      | 20140827         | ZA20130004041      | 20130603         |

**Priority:**

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| EP20090014472 | 20091118 | EP20090176396  | 20091118 | EP20090181052 | 20091222 |
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| WO2010EP06988 | 20101118 | US20110485641P | 20110513 | EP20110165957 | 20110513 |
| WO2011B54792  | 20111027 | EP20110837655  | 20111027 | US20110883450 | 20111027 |

**Probable Assignee:** BASF SE

**Assignee(s):** (std): BASF SE ; BLAU ASTRID ; BRUCE WESLEY ; CHRISTIANSEN NICOLE ; HERBOLD MICHAEL MANFRED ; MCKERSIE BRYAN ; HAAKE VOLKER ; HENKES STEFAN ; KAMLAGE BEATE ; FAHNENSTICH HOLGER ; HEROLD MICHAEL MANFRED ; BLAESING OLIVER ; HENDRIKS JANNEKE ; PUZIO PIOTR ; PLESCH GUNNAR ; WENDEL BIRGIT ; VAN CAMP WIM ; REUZEAU CHRISTOPHE ; THIMM OLIVER ; BASF CHINA CO LTD ; BASF PLANT SCIENCE CO GMBH

**Assignee(s):** BASF PLANT SCIENCE COMPANY GMBH ; BASF CHINA COMPANY LIMITED

**Inventor(s):** (std): BLAESING OLIVER ; BLASING OLIVER ; BLAU ASTRID ; BRUCE WESLEY ; CHRISTIANSEN NICOLE ; FAHNENSTICH HOLGER ; HAAKE VOLKER ; HENDRIKS JANNEKE ; HENKES STEFAN ; HERBOLD MICHAEL MANFRED ; HEROLD MICHAEL MANFRED ; KAMLAGE BEATE ; MCKERSIE BRYAN ; PLESCH GUNNAR ; PUZIO PIOTR ; REUZEAU CHRISTOPHE ; THIMM OLIVER ; VAN CAMP WIM ; WENDEL BIRGIT

**Inventor(s):** MICHAEL MANFRED HEROLD ; OLIVER BLAESING ; OLIVER THIMM ; PIOTR PUZIO ; JANNEKE HENDRIKS ; GUNNAR PLESCH ; ASTRID BLAU ; BEATE KAMLAGE ; BIRGIT WENDEL ; CHRISTOPHE REUZEAU

**Agent(s):** GRIFFITH HACK; ROBIC; POPP ANDREAS

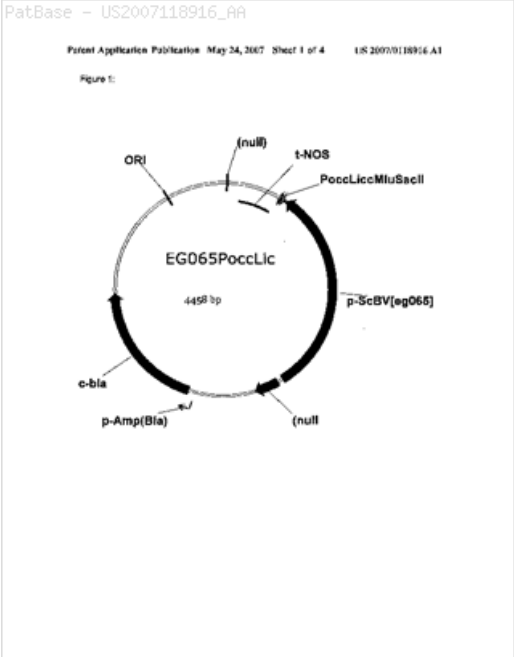
**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: **PROCESS** FOR THE PRODUCTION OF FINE CHEMICALS

**Abstract:** The present invention relates to a **process** for the production of the fine chemical in a microorganism, a plant cell, a plant, a plant tissue or in one or more parts thereof, preferably in plastids. The invention furthermore relates to nucleic acid molecules, polypeptides, nucleic acid constructs, vectors, antibodies, host cells, plant tissue, propagation material, harvested material, plants, microorganisms as well as agricultural compositions and to their use.

**Classifications:**

**International (IPC 8-9):** A01H1/00 A01H5/00 A61K31/7088 A61K38/16 A61K39/395 C07H21/00 C07H21/04 C07K14/415 C07K16/16 C12N1/00 C12N15/16 C12N15/62 C12N15/63 C12N15/74 C12N15/82 C12N5/04 C12N5/10 C12N9/00 C12N9/10 C12P13/06 C12P13/08 C12P13/10 C12P13/12 C12P19/00 C12P7/64 (Advanced/Invention); A01H1/00 C07H21/00 C12N15/16 C12N15/62 C12N15/82 C12N5/04 C12N9/10 C12P13/00 (Core/Invention)  
**International (IPC 1-7):** C12N15/82 C12P13/12  
**CPC:** C12N15/8214 C12N15/8221 C12N15/8243 C12N15/8245 C12N15/8247 C12N15/825 C12N15/8251 C12N15/8253 C12N15/8254 C12P7/64 C12P13/06 C12P13/10 C12P13/12  
**European:** C12N15/82A12 C12N15/82B8 C12N15/82C4B C12N15/82C4B10 C12N15/82C4B10A C12N15/82C4B10B C12N15/82C4B2 C12N15/82C4B4 C12N15/82C4B8 C12P13/06 C12P13/10 C12P13/12 C12P7/64  
**US:** 424/139.1 435/193 435/193S 435/243 435/29 435/320.1 435/419 435/419S 435/468 435/468S 435/471 514/44R 530/370 530/387.9 536/23.1 536/23.2 536/23.200S 536/23.4 536/23.7 800/278 800/278P 800/288 800/295 800/298



**Family:**

| Publication number | Publication date | Application number | Application date |
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| AR063655 AA        | 20090211         | AR2006P100785      | 20060302         |
| AU2006219823 AA    | 20060908         | AU20060219823      | 20060228         |
| AU2013200435 AA    | 20130228         | AU20130200435      | 20130125         |
| CA2598792 AA       | 20070822         | CA20062598792      | 20060228         |
| EP1777296 A2       | 20070425         | EP20060127389      | 20060906         |
| EP1777296 A3       | 20120711         | EP20060127389      | 20060906         |
| EP1871883 A1       | 20080102         | EP20060708699      | 20060228         |
| EP2175034 A2       | 20100414         | EP20090156455      | 20060906         |
| EP2194140 A2       | 20100609         | EP20090156777      | 20060228         |
| EP2573188 A2       | 20130327         | EP20110193515      | 20060228         |
| US2007118916 AA    | 20070524         | US20060516230      | 20060906         |
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| WO06092449 A2      | 20060908         | WO2006EP60588      | 20060228         |
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**Priority:**

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| EP20050101600 | 20050302 | EP20050104101 | 20050517 | EP20050104335 | 20050523 |
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**Probable Assignee:** METANOMICS GMBH

**Assignee(s):** (std): BLAU ASTRID ; HEROLD MICHAEL MANFRED ; HEROLD MICHAEL MANFRED ; KAMLAGE BEATE ; LOOSER RALF ; METANOMICS GMBH ; PLESCH GUNNAR ; PUZIO PIOTR ; WENDEL BIRGIT ; SCHAUWECKER FLORIAN

**Inventor(s):** (std): HEROLD MICHAEL M ; HEROLD MICHAEL MANFRED ; HEROLD MICHAEL MANFRED DR ; KAMLAGE BEATE ; KAMLAGE BEATE DR ; LOOSER RALF ; LOOSER RALF DR ; BLAU ASTRID ; PLESCH GUNNAR ; PLESCH GUNNAR ; PLESCH GUNNAR DR ; PUZIO PIOTR ; PUZIO PIOTR DR ; SCHAUWECKER FLORIAN ; SCHAUWECKER FLORIAN DR ; WENDEL BIRGIT ; WENDEL BIRGIT DR ; HEROLD MICHAEL MANFRED

**Inventor(s):** ASTRID BLAU ; BEATE KAMLAGE ; BIRGIT WENDEL ; RALF LOOSER ; FLORIAN SCHAUWECKER ; GUNNAR PLESCH ; HEROLD MICHAEL ; MICHAEL MANFRED HEROLD ; PIOTR PUZIO

**Agent(s):** WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; ROBIC; PRESSLER UWE; POPP ANDREAS ET AL; POPP ANDREAS; HEISTRACHER ELISABETH; CONNOLLY BOVE LODGE AND HUTZ LLP; DRINKER BIDDLE AND REATH LLP

**Designated states:** AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE

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NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ  
UA UG US UZ VC VN YU ZA ZM ZW

**Title:** EXTRACTION WITH FRACTIONATION OF OIL AND PROTEINACEOUS MATERIAL FROM OLEAGINOUS MATERIAL

**Abstract:** **Methods** for selective extraction and fractionation of algal lipids and algal products are disclosed. A **method** of selective removal of products from an algal biomass provides for single and multistep extraction **processes** which enable efficient separation of algal components. Among these components are neutral lipids synthesized by algae, which are extracted by the **methods** disclosed herein for the production of renewable fuels.

**Classifications:**

**International (IPC 8-9):** A23D9/00 A23G3/00 A23J A23J1/00 A23K1/00 A23K1/06 A23K1/16 A23L1/00 A23L1/29 A23L1/30 A23L1/48 A61K31/20 A61K31/202 A61K36/00 A61K36/02 A61P7/00 B01D11/00 B01D11/02 B01D11/04 B01D21/00 B01D61/14 B01D61/58 B01D63/00 B01D71/06 C02F1/00 C02F1/24 C02F1/26 C02F1/38 C02F1/40 C02F3/00 C02F3/12 C02F3/32 C02F3/34 C02F9/00 C07C1/00 C07C1/20 C07C1/207 C07C1/22 C07C51/36 C07C67/00 C07C67/03 C07C69/587 C07D487/22 C07H1/06 C07H1/08 C07J1/00 C07K1/00 C07K1/14 C07K1/34 C07K1/36 C07K14/00 C07K14/405 C07K14/76 C07K4/08 C09F1/02 C10G45/00 C10G51/02 C10L1/00 C10L1/02 C10L1/16 C10L1/18 C10L1/19 C10L3/00 C10L8/00 C11B C11B1/00 C11B1/04 C11B1/10 C11B11/00 C11B3/00 C11B3/10 C11B3/16 C11B7/00 C11C3/00 C11C3/04 C12N C12N1/00 C12N1/02 C12N1/12 C12P C12P17/18 C12P21/00 C12P21/02 C12P23/00 C12P5/00 C12P7/62 C12P7/64 C12R C12R1/89 (Advanced/Invention); A61K38/00 B01D11/00 B01D61/00 C02F9/02 C07K1/14 C07K1/30 C12N1/12 C12P21/00 C12P7/64 C12R1/89 (Advanced/Non-invention); C11B1/10 C12R1/89 (Core/Invention); A23J C11B C12N C12P (Subclass/Invention)

**International (IPC 1-7):** C11B1/10 C12P7/64

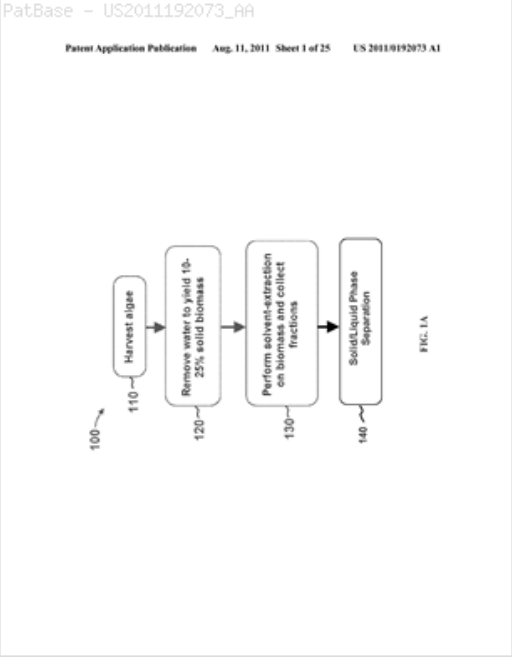
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**European:** C07K1/14A C10L1/02D C10L1/04 C10L1/08 C11B1/02 C11B1/10 C11B1/10B C11B1/10F C11B3/00F C11B3/10 C11C3/00B C12N1/06 C12N1/12 C12P17/18C C12P23/00 C12P3/00 C12P7/64C4 C12P7/64E2D C12P7/64E2F C12P7/64E4 Y02E50/13

**US:** 1/1 201/806 203/28 203/39 203/39 203/91 208/133 208/142 208/15 208/49 208/87 208/92 208/93 208/95 210/195.1 210/195.100S 210/195.2 210/195.200P 210/257.2 210/601 210/602 210/610 210/631 210/632 210/633 210/634 210/638 210/639 210/641 210/644 210/650 210/651 210/702 210/703 210/710 210/749 210/770 210/774 210/779 210/787 210/804 210/805 210/806 424/195.17 424/195.170P 424/725 426/575 426/601 426/601P 426/658 426/658S 426/659 426/660 426/665 426/665S 426/7 426/7P 435/134 435/135 435/135P 435/166 435/257.1 435/257.100P 435/257.5 435/260 435/261 435/262 435/262P 435/317.1 44/307 44/307P 44/308 44/310 44/385 44/386 44/386P 44/388 44/388P 44/388S 44/403 44/605 47/1.4 514/13.5 514/15.2 514/558 514/560 530/344 530/350 530/355 530/355 530/361 530/362 530/368 530/368 530/369 530/369P 530/370 530/380 530/386 530/386 530/412 530/412S 530/422 530/422S 530/423 530/423S 530/424 530/425 530/425S 530/426 530/426S 530/427 536/127 536/127P 536/127S 540/145 540/145S 552/502 552/502S 554/12 554/124 554/124S 554/13 554/14 554/141 554/16 554/161 554/163 554/169 554/170 554/170S 554/174 554/175 554/175S 554/19 554/191 554/191P 554/20 554/206 554/206P 554/206S 554/20S 554/21 554/212 554/21P 554/21S 554/30 554/78 554/78S 554/8 554/83 585/254 585/310 585/310S 585/733 585/733S 585/836

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**Family:**

| Publication number | Publication date | Application number | Application date |
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| WO11127127 A2   | 20111013 | WO2011US31353 | 20110406 |
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| WO11127161 A1   | 20111013 | WO2011US31408 | 20110406 |
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| WO11127169 A1   | 20111013 | WO2011US31417 | 20110406 |
| WO11127171 A1   | 20111013 | WO2011US31419 | 20110406 |
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| ZA201207066 A | 20130529 | ZA20120007066 | 20120920 |
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| ZA201207315 A | 20130529 | ZA20120007315 | 20120928 |
| ZA201207355 A | 20130529 | ZA20120007355 | 20120928 |

#### Priority:

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| US20110299893  | 20111118 | US20110331742  | 20111220 | US20110331756  | 20111220 |
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| US20120653595  | 20121017 | US20120674631  | 20121112 | US20130848442  | 20130321 |
| US20130848479  | 20130321 |                |          |                |          |

**Probable Assignee:** HELIAE DEVELOPMENT LLC

**Assignee(s):** (std): ARIZONA BOARD OF REGENTS O B O ARIZONA STATE UNIV ; ARIZONA BOARD OF REGENTS O B O ARIZONA STATE UNIVERSITY ; HELIAE DEV LLC ; HU QIANG ; HELIAE DEVELOPMENT LLC ; HALIAE DEV LLC ; HELIAE DEVELOPMENT LLC ; FOR AND ON BEHALF OF ARIZONA STATE UNIVERSITY ; FOR AND ON BEHALF OF ARIZONA STATE UNIV ARIZONA BOARD OF REGENTS ; KALE ANIKET ; UNIV ARIZONA ; SOMMERFELD MILTON ; SHINDE SANDIP ; ZULLO LUCA C ; ZULLO LUCA COSTANTINO

**Assignee(s):** HELIAE DEVELOPMENT LLC GILBERT ; HALIAE DEVELOPMENT LLC ; HELIAE DEVELOPMENT LLC ; ARIZONA BOARD OF REGENTS FOR AND ON BEHALF OF ARIZ ; ARIZONA BOARD OF REGENTS FOR AND ON BEHALF OF ARIZONA STATE UNIV ; ARIZONA BOARD OF REGENTS FOR AND ON BEHALF OF ARIZONA STATE UNIVERSITY

**Inventor(s):** (std): ANIKET KALE ; HU QIANG ; KALE ANIKE ; KALE ANIKET ; SHINDE SANDIP ; SOMMERFELD MILTON ; ZULLO LUCA C ; ZULLO LUCA COSTANTINO

**Agent(s):** PIZZEYS; PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD; SMART AND BIGGAR; STENGER WATZKE RING INTELLECTUAL PROPERTY; ZENZ PATENTANWALTE PARTNERSCHAFT MBB; V BEZOLD AND PARTNER PATENTANWALTE PARTG MBB; Bassil Nicholas Charles; BASSIL NICHOLAS CHARLES; TOM; COLLEEN; COLLEEN SUPERKO ESQ; COLLEEN M; JUSTIN; WILMER CUTLER PICKERING HALE AND DORR LLP; JUSTON; LEN; SPENCE CHRISTOPHER W; HOBGOOD JOHN V ET AL; SUPERKO COLLEEN ET AL

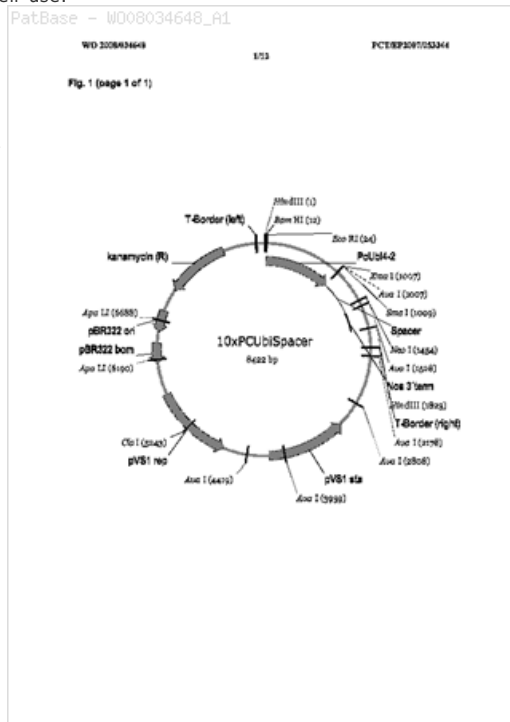
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**Title:** PROCESS FOR THE PRODUCTION OF A FINE CHEMICAL

**Abstract:** The present invention relates to a **process** for the production of a fine chemical in an organism such as a microorganism, a non-human animal or plant, or in a part thereof. The invention furthermore relates to nucleic acid molecules, antisense, RNAi, snRNA, dsRNA, siRNA, miRNA, ta-siRNA, cosuppression molecule, or ribozyme molecules, or polypeptides, nucleic acid constructs, vectors, antibodies, host cells, plant tissue, propagation material, harvested material, plants, microorganisms as well as agricultural compositions and to their use.

**Classifications:**

**International (IPC 8-9):** A01H5/00 C07K14/415 C07K16/16  
C12N1/21 C12N15/11 C12N15/82 C12P13/12  
C12Q1/68 (Advanced/Invention);  
A01H5/00 C07K14/415 C07K16/12 C07K16/16 C12N1/21  
C12Q1/68 (Advanced/Non-invention);  
A01H5/00 C07K14/415 C07K16/16 C12N1/21 C12N15/11 C12N15/82  
C12P13/00 C12Q1/68 (Core/Invention);  
A01H C07K C12N C12P C12Q (Subclass/Invention)  
**International (IPC 1-7):** C12P13/00  
**CPC:** C12N15/8243 C12N15/8218 C12N15/8253 C12P13/12  
C12Y101/01085  
**European:** C12N15/82B4 C12N15/82C4B C12N15/82C4B10A  
C12P13/12 C12Y101/01085



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AR073153 AA        | 20101020         | AR2007P101474      | 20070409         |
| AU2007299219 AA    | 20080327         | AU20070299219      | 20070404         |
| CA2644273 A1       | 20080903         | CA20072644273      | 20070404         |
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| EP2090662 A2       | 20090819         | EP20090156643      | 20070404         |
| EP2090662 A3       | 20121031         | EP20090156643      | 20070404         |
| WO08034648 A1      | 20080327         | WO2007EP53344      | 20070404         |
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| ZA200809379 A      | 20100825         | ZA20080009379      | 20081103         |

**Priority:**

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| EP20060114210 | 20060515 | EP20060114252 | 20060518 | EP20060114258 | 20060518 |
| EP20060114273 | 20060518 | EP20060114677 | 20060519 | EP20060117394 | 20060524 |
| EP20060115524 | 20060613 | EP20060115416 | 20060614 | EP20060116792 | 20060707 |
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| EP20060119747 | 20060830 | EP20060120256 | 20060907 | EP20060120634 | 20060914 |
| EP20060120898 | 20060919 | EP20060121097 | 20060922 | EP20060121250 | 20060926 |
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| EP20070100643 | 20070117 | EP20070100782 | 20070119 | EP20070100934 | 20070122 |
| EP20070100952 | 20070123 | EP20070100951 | 20070123 | EP20070101147 | 20070125 |
| EP20070101328 | 20070129 | EP20070101330 | 20070129 | EP20070101454 | 20070131 |
| EP20070101536 | 20070201 | EP20070101615 | 20070202 | EP20070101737 | 20070205 |
| EP20070101712 | 20070205 | EP20070101935 | 20070208 | EP20070101936 | 20070208 |
| EP20070102156 | 20070212 | EP20070102271 | 20070213 | EP20070102738 | 20070220 |
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| WO2007EP53344 | 20070404 | EP20070857190 | 20070404 | EP20090156643 | 20070404 |
| WQ2007EP53344 | 20070405 | EP20070857190 | 20070405 |               |          |

**Probable Assignee:** METANOMICS GMBH

**Assignee(s):** (std): BLAU ASTRID ; EBNETH MARCUS ; GIPMANS MARTIJN ; HAAKE VOLKER ; METANOMICS GMBH ; PLESCH GUNNAR ; PUZIO PIOTR ; WALK TILMANN B ; WEIG ALFONS

**Inventor(s):** (std): BLAU ASTRID ; EBNETH MARCUS ; GIPMANS MARTIJN ; HAAKE VOLKER ; PLESCH GUNNAR ; PUZIO PIOTR ; WALK TILMANN B ; WEIG ALFONS ; GIPSMANS MARTIJN

**Inventor(s):** ALFONS WEIG ; ASTRID BLAU ; TILMANN B WALK ; VOLKER HAAKE ; MARCUS EBNETH ; MARTIJN GIPMANS ; PIOTR PUZIO ; GUNNAR PLESCH

**Agent(s):** WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; ROBIC; FITZNER UWE

**Designated states:** AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY  
CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS  
IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX  
MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD  
TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: EXTRACTION SOLVENTS DERIVED FROM OIL FOR ALCOHOL REMOVAL IN EXTRACTIVE FERMENTATION

**Abstract:** In an alcohol fermentation **process**, oil derived from biomass is hydrolyzed into an extractant available for in situ removal of a product alcohol such as butanol from a fermentation broth. The glycerides in the oil can be catalytically (e.g., enzymatically) hydrolyzed into free fatty acids, which form a fermentation product extractant having a partition coefficient for a product alcohol greater than a partition coefficient of the oil of the biomass for the product alcohol. Oil derived from a feedstock of an alcohol fermentation **process** can be hydrolyzed by contacting the feedstock including the oil with one or more enzymes whereby at least a portion of the oil is hydrolyzed into free fatty acids forming a fermentation product extractant, or the oil can be separated from the feedstock prior to the feedstock being fed to a fermentation vessel, and the separated oil can be contacted with the enzymes to form the fermentation product extractant. The fermentation product extractant can be contacted with a fermentation broth for in situ removal of a product alcohol.

**Classifications:**

**International (IPC 8-9):** A23D9/00 A23J1/14 A23K1/00 A23K1/06 A23K10/38 B01D B01D1/00 B01D11/04 B01D21/26 B01D3/00 B01D3/06 B01D3/10 B01D3/14 B01D3/34 B01D53/14 B01D53/62 C07C C07C231/02 C07C233/09 C07C27/02 C07C29/04 C07C29/147 C07C29/76 C07C29/80 C07C29/86 C07C31/12 C07C33/02 C07C57/12 C07C67/03 C07C67/31 C07C69/732 C07H21/04 C11B1/02 C11B13/00 C11C C11C1/02 C11C1/04 C11C3/00 C11C3/10 C12F3/10 C12M C12M1/00 C12M3/00 C12N1/00 C12N1/12 C12N1/14 C12N1/15 C12N1/16 C12N1/19 C12N1/20 C12N1/21 C12N15/00 C12N15/09 C12N15/52 C12N9/00 C12N9/06 C12N9/10 C12N9/16 C12N9/18 C12N9/20 C12P C12P1/00 C12P13/02 C12P19/00 C12P7/02 C12P7/04 C12P7/06 C12P7/10 C12P7/16 C12P7/18 C12P7/20 C12P7/22 C12P7/40 C12P7/62 C12P7/64 (Advanced/Invention); C07B61/00 C12M1/00 C12N15/09 C12N15/60 (Advanced/Non-invention);

B01D C07C C11C C12P (Subclass/Invention)

**CPC:** B01D3/06 B01D5/0027 C12N1/38 C12N9/88 C12N9/18 C07C29/80 C07C29/76 B01D2257/708 C11B1/025 C11B13/00 C12P7/6418 C12M45/04 C12N15/52 C12P7/649 C12P2203/00 Y02E50/10 Y02E50/13 C12M21/12 C12M45/09 Y02W30/74 C12N1/16 C12N9/1085 C12N9/0016 C12Y205/01072 C12Y104/01021 Y02P20/152 Y02P70/34 Y02P60/873 C12P7/18 C12N1/14 C12N15/00 Y02E50/16 Y02E50/17 A23K10/12 A23K10/38 A23K1/007 C12P7/62 B01D1/28 B01D3/002 B01D3/143 B01D3/146 B01D3/148 B01D53/1475 B01D53/1487 B01D2251/306 B01D2251/606 B01D2252/202 B01D2252/2025 B01D2252/2026 B01D2252/2028 B01D2252/20484 B01D2252/20489 B01D2252/30 B01D2257/504 B01D2257/70 B01D2257/704 B01D2257/80 Y02C10/06 C12F3/10 B01D11/0492 B01D21/262 C07C29/86 C12P7/16 B01D21/26 C12M1/00

**European:** A23K1/00C1 A23K1/06 B01D1/28 B01D3/00A2 B01D3/06 B01D3/14B B01D3/14B2 B01D3/14B4 B01D5/00D B01D53/14H6 B01D53/14K C07C29/86 C11B1/02B C11B13/00 C12N1/38 C12N9/88 C12P7/16 C12P7/62 C12P7/64C2 L01D21/26C L01D251/306 L01D251/606 L01D252/202 L01D252/202D2 L01D252/202D4 L01D252/202D6 L01D252/204H2 L01D252/204H4 L01D252/30 L01D257/504 L01D257/70 L01D257/704 L01D257/708 L01D257/80 L01D53/14K

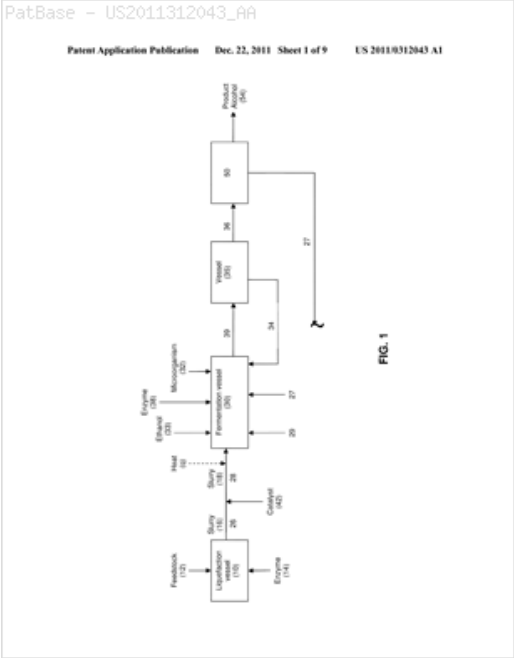
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| US2014121402 AA   | 20140501  | US20130048673   | 20131008 |
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| US9382502 BB    | 20160705 | US20130827798 | 20130314 |
| US9388098 BB    | 20160712 | US20150678123 | 20150403 |
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**Priority:**

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| WO2012US70275  | 20121218 | WO2012US70255  | 20121218 | EP20120815911 | 20121219 |
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| US20160269736  | 20160919 | US20170642777  | 20170706 |               |          |

**Probable Assignee:** ELEVANCE RENEWABLE SCIENCES INC

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**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID

IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN  
MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG  
SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** **PROCESSES** AND SYSTEMS FOR THE PRODUCTION OF FERMENTATIVE ALCOHOLS

**Abstract:** The present invention relates to **processes** and systems for the production of fermentative alcohols such as ethanol and butanol. The present invention also provides **methods** for separating feed stream components for improved biomass **processing** and productivity.

**Classifications:**

**International (IPC 8-9):** B01D11/04 B01D21/26 C11B1/02 C11B1/10 C12M1/00 C12M1/02 C12M1/26 C12M1/34 C12M1/36 C12N1/00 C12P7/04 C12P7/06 C12P7/10 C12P7/14 C12P7/16 C12P7/64 (Advanced/Invention); C12P7/06 (Advanced/Non-invention)

**International (IPC 1-7):** B01D21/26 C12M1/00 C12M1/26 C12P7/16  
**CPC:** C12M45/05 C12M45/04 C12P7/06 C12P7/649 C11C3/003 Y02E50/10 Y02E50/16 C12P7/08 B01D21/02 C12M47/10 B01D21/262 C12P7/065 A23D9/013 C11B13/00 C12M45/09 C12P7/14 Y02P60/873 C12P7/04 C12P2203/00 C11B1/00 C11B1/025 C11B1/10 Y02W30/74 A23K10/38 C12M43/02 Y02E50/17 C12M41/26 C12M41/34 C12P7/02 B01D21/26 C12M21/12 C12M41/00 C12M41/32 C12M47/06 C12M33/00 C12M41/48 C12P7/16 C12P7/10 C12M23/58

**US:** 1/1 210/435 210/512.1 210/532.1 210/703 210/704 210/767 210/770 210/787 210/800 210/806 252/182.12 435/106 435/119 435/125 435/126 435/133 435/134 435/139 435/140 435/141 435/144 435/150 435/155 435/157 435/158 435/160 435/161 435/162 435/163 435/165 435/167 435/168 435/201 435/287.1 435/289.1 435/29 435/294.1 435/297.1 435/43 435/64 435/66 435/76 435/81 435/86 554/10 568/913

**JP F-Term:** 4B029 4B029/AA02 4B029/BB01 4B029/CC01 4B029/DF03 4B029/DF10 4B029/DG10 4B029/FA15 4B064 4B064/AC02 4B064/AC03 4B064/AC04 4B064/CA01 4B064/CC03 4B064/CD22 4B064/CD24 4B064/DA16 4B065 4B065/AA00 4B065/AC14 4B065/BB26 4B065/CA05 4B065/CA06 4B029/DA04 4B029/DF05 4B029/DG06 4B029/GA08 4B029/GB02 4B029/GB10 4B064/AC01 4B064/CA06 4B064/CA19 4B064/CB03 4B064/CC24 4B064/CC30 4B064/CE08

**JP F-Index:** C12M1/02/A C12N1/00/B C12N1/00/F C12P7/04 C12P7/06 C12P7/16 C12M1/00/D

**JP Facet:** ZNA

PatBase - US2014024064\_AA

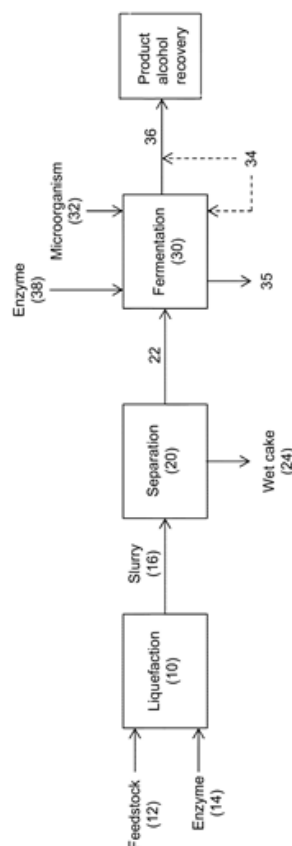


**FIG. 1**

**Family:**

| Publication number | Publication date | Application number | Application date |
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| AU2013293177 AB    | 20150212         | AU20130293177      | 20130723         |
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| US2014106419 AA    | 20140417         | US20130052184      | 20131011         |
| US2015211026 AA    | 20150730         | US20130415928      | 20130723         |
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**Priority:**

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**Probable Assignee:** BUTAMAX TM ADVANCED BIOFUELS LLC

**Assignee(s):** (std): BUTAMAX ADVANCED BIOFUELS LLC ; BUTAMAX TM ADVANCED BIOFUELS LLC ; BUTAMAX TM ADVANCED BIOFUELS

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**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: RECOMBINANT MICROALGAE INCLUDING KETO-ACYL ACP SYNTHASE

**Abstract:** **Methods** and compositions for the production of food compositions, oils, fuels, oleochemicals, and other compounds in recombinant microorganisms are provided, including oil-bearing microorganisms and **methods** of low cost cultivation of such microorganisms. Microalgal cells containing exogenous genes encoding, for example, a lipase, a sucrose transporter, a sucrose invertase, a fructokinase, a polysaccharide-degrading enzyme, a keto acyl-ACP synthase enzyme, a fatty acyl-ACP thioesterase, a fatty acyl-CoA/aldehyde reductase, a fatty acyl-CoA reductase, a fatty aldehyde reductase, a fatty aldehyde decarboxylase, and/or an acyl carrier protein are useful in manufacturing food compositions, and transportation fuels such as renewable diesel, **biodiesel**, and renewable jet fuel, as well as oleochemicals such as functional fluids, surfactants, soaps and lubricants.

**Classifications:**

**International (IPC 8-9):** A01N37/00 A01N55/06 A21D13/00 A21D2/14 A23C9/12 A23D7/00 A23D7/005 A23D7/02 A23D9/00 A23D9/02 A23G1/36 A23G1/38 A23G3/00 A23G3/34 A23G9/32 A23G9/44 A23G9/52 A23K1/16 A23K20/158 A23L15/00 A23L2/00 A23L2/38 A23L23/00 A23L27/60 A23L33/10 A23L7/109 A61K31/305 C07C51/00 C07C53/00 C09K3/00 C10G3/00 C10L1/00 C10L1/02 C10L1/08 C10L1/18 C10L1/19 C10L1/232 C10M101/04 C10M105/38 C10M177/00 C11B1/00 C11B3/00 C11B5/00 C11C1/00 C11C3/00 C12N1/00 C12N1/12 C12N1/13 C12N1/19 C12N1/20 C12N1/21 C12N15/00 C12N15/09 C12N15/52 C12N15/67 C12N15/74 C12N15/79 C12N15/82 C12N9/00 C12N9/02 C12N9/16 C12N9/26 C12N9/40 C12P1/00 C12P7/64 (Advanced/Invention); C12N15/09 C12N15/67 C12P7/64 (Advanced/Non-invention); A23D C11B C12N C12P (Subclass/Invention)

**International (IPC 1-7):** A23D9/00 C11B5/00

**CPC:** C11C3/00 A23D7/00 C11B1/00 Y02E50/13 Y02T50/678 C12N9/16 C12N15/67 C12N15/8216 C12Y301/02014 C12P7/6463 C12P7/64 C12N9/2431 C12N9/2465 C12N9/0071 C12Y302/01022 C12Y302/01026 C12Y301/02 C12Y114/19001 C12N15/79 C12P7/6445 C12N15/74 C12P1/00 A23K20/158 Y02P30/20 A23D9/00

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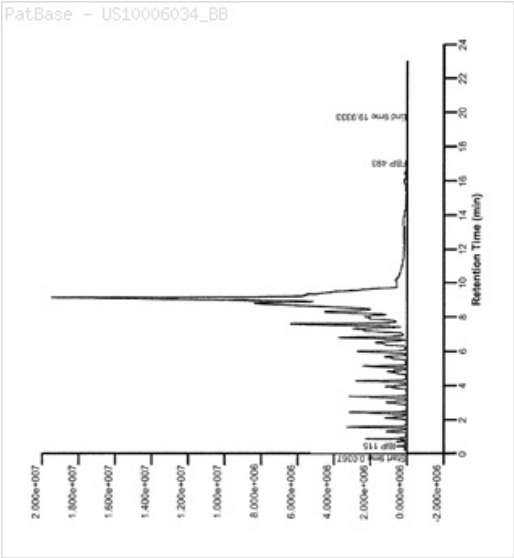
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| Publication number | Publication date | Application number | Application date |
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**Probable Assignee:** CORBION BIOTECH INC

**Assignee(s):** (std): CORBION BIOTECH INC ; FRANKLIN SCOTT ; MOSELEY JEFFREY L ; SOLAZYME INC ; RAKITSKY WALT ; SOMANCHI ARAVIND ; WEE JANICE ; RUDENKO GEORGE ; TERRAVIA HOLDINGS INC

**Assignee(s):** N A

**Inventor(s):** (std): ARAVIND SOMANCHI ; GEORGE RUDENKO ; JANICE WEE ; JEFFREY L MOSELEY ; RAKITSKY WALTE ; RAKITSKY WALTER ; SCOTT FRANKLIN ; WALT RAKITSKY ; WEE JANICE ; SOMANCHI ARAVIND ; RUDENKO GEORGE ; RAKITSKY WALT ; MOSELEY JEFFREY L ; FRANKLIN SCOTT

**Agent(s):** DAVIES COLLISON CAVE; WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; SMART AND BIGGAR; MARSHALL CAMERON JOHN; SPRUSON AND FERGUSON ASIA PTE LTD; WEAVER AUSTIN VILLENEUVE AND SAMPSON LLC; ALSTON AND BIRD LLP; TERMES LANCE A ET AL

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** APPARATUS AND **METHOD** FOR GENERATING CAVITATIONAL FEATURES IN A FLUID MEDIUM

**Abstract:** A nano-cavitational generator for generating cavitation features in a fluidic medium. The generator is a static device that includes a series of chambers having varying diameters and flow areas to create variations in fluid velocity and pressure. The variations in fluid pressure create cavitation bubbles and eddies of internal pressure, which result in long-term, stable and ultra-thin emulsions and dispersions of the fluidic medium. The gas-liquid interface around the cavitation bubbles provides increased surface area for **process** reactions.

**Classifications:**

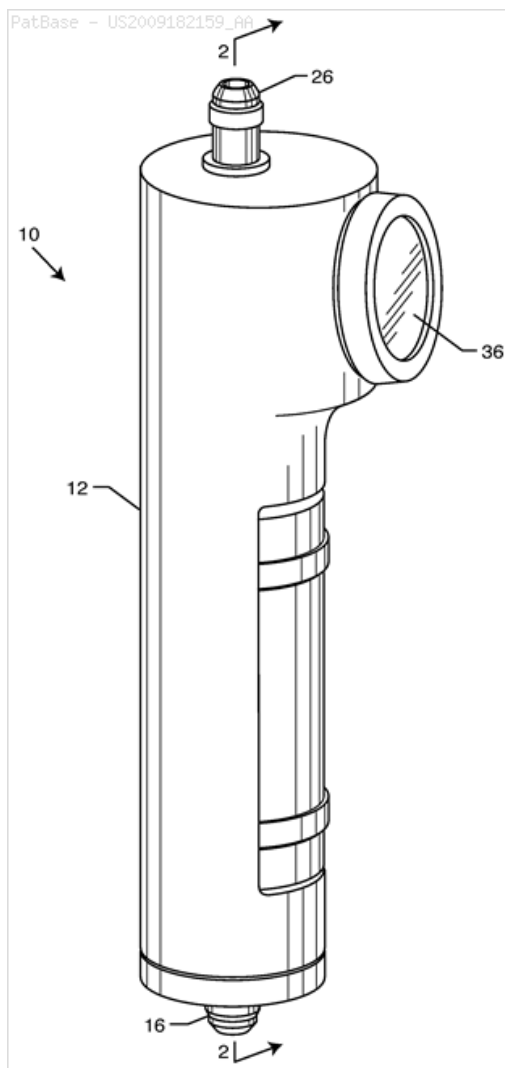
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**International (IPC 1-7):** B01F7/10

**CPC:** B01F5/0268 B01F5/0603 B01F5/0656 B01F5/0657 B01F13/1013 B01F13/1016 B01J19/26 B01F5/0604 B01F5/0606 B01F2005/0017 C12M43/02 C12M47/06 C10L1/1802 A23D9/04 C10G9/007 C10G31/00 C10G31/06 C10G21/00 C10G29/00 C10G31/08 C07C67/03 C10G2300/1011 C10L1/026 C11B13/00 Y02E50/13 C10G1/002 B01J19/088 B01J19/087 B01J19/123 B01J19/10 B01J2219/0877 B01J2219/1203 B01J2219/0849 B01J2219/085 B01J2219/08 C10G15/08 C10G17/00 C10G11/00 Y02W30/74 C12P2203/00 Y02P30/20 C12P7/04 Y02E50/17 A23J7/00 C11B3/005 A23L2/44 A23L2/50 A23L2/70 C12H1/16 C12M27/00 C12M45/06 C10G11/05 C10G11/14 C12M21/18 B01F11/0283 B01F5/0413 B01F2215/0073 C12P19/14 C12P19/02 C12P2201/00 A23K10/37 A23K50/10 B01F5/0644 B01F5/0646 B01F5/0652 B01F5/0653 B01F5/0682 B01F5/0688 B01F13/1025 B01F13/1027 B01J10/002 B01J19/0066 B01J19/008 B01J19/02 B01J19/2415 B01J2219/0218 B01J2219/0231 B01J2219/0245 C10L1/02 C10L1/023 C11B3/001 C11B3/006 C11B3/04 C11B3/16 C11C3/003 C12N1/38 C12P7/10 Y02E50/16 Y02P60/877

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**Probable Assignee:** CAVITATION TECHNOLOGIES INC

**Assignee(s):** (std): CAVITATION TECH INC ; CAVITATION TECHNOLOGIES INC ; GORDON ROMAN ; GORODNITSKY IGOR ; LEBID SERGIO J ; GRICHKO VARVARA ; PROMTOV MAXIM

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