

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5762662

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT

**CONVEYING PARTY DATA**

Name	Execution Date
REG LIFE SCIENCES, LLC	05/29/2019

**RECEIVING PARTY DATA**

<b>Name:</b>	GENOMATICA, INC.
<b>Street Address:</b>	4757 NEXUS CENTER DRIVE
<b>City:</b>	SAN DIEGO
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	92121

**PROPERTY NUMBERS Total: 200**

Property Type	Number
Patent Number:	8999686
Patent Number:	9068201
Patent Number:	9133406
Patent Number:	9200299
Patent Number:	9175234
Patent Number:	9890401
Patent Number:	9587231
Patent Number:	9163267
Patent Number:	8535916
Patent Number:	9598706
Patent Number:	9017984
Patent Number:	8283143
Patent Number:	8110670
Patent Number:	8110093
Patent Number:	8313934
Patent Number:	8597922
Patent Number:	8183028
Patent Number:	9481899
Patent Number:	8846371
Patent Number:	8323924

PATENT

<b>Property Type</b>	<b>Number</b>
Patent Number:	8097439
Patent Number:	9670512
Patent Number:	8658404
Patent Number:	8268599
Patent Number:	8530221
Patent Number:	8859259
Patent Number:	9879239
Patent Number:	10316298
Patent Number:	8372610
Application Number:	14007857
Patent Number:	9340801
Application Number:	14773149
Patent Number:	9683247
Patent Number:	9683219
Patent Number:	9469586
Application Number:	15301754
Application Number:	14344658
Application Number:	14897285
Patent Number:	10150975
Patent Number:	9868682
Patent Number:	9951322
Application Number:	15021515
Patent Number:	9758769
Application Number:	15039052
Patent Number:	10208294
Patent Number:	10392637
Application Number:	15295336
Application Number:	15319272
Application Number:	15326844
Application Number:	15451881
Patent Number:	9873865
Application Number:	15650285
Patent Number:	10301603
Application Number:	15888222
Application Number:	15873977
Application Number:	15958229
Application Number:	16191096
Application Number:	16209711

<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16234315
<b>Application Number:</b>	15705012
<b>Application Number:</b>	16272303
<b>Application Number:</b>	62725946
<b>Application Number:</b>	62726114
<b>Application Number:</b>	62731711
<b>Application Number:</b>	62794497
<b>Patent Number:</b>	10017455
<b>Application Number:</b>	15954451
<b>PCT Number:</b>	US2018025970
<b>PCT Number:</b>	US2019030530
<b>Application Number:</b>	13233489
<b>Application Number:</b>	12543412
<b>Application Number:</b>	12278957
<b>Application Number:</b>	12545001
<b>Application Number:</b>	12758000
<b>Application Number:</b>	14668213
<b>Application Number:</b>	14599438
<b>Application Number:</b>	12768419
<b>Application Number:</b>	14661219
<b>Application Number:</b>	60772682
<b>Application Number:</b>	60802016
<b>Application Number:</b>	60801995
<b>Application Number:</b>	13302957
<b>Application Number:</b>	60989798
<b>Application Number:</b>	60908547
<b>Application Number:</b>	60852587
<b>Application Number:</b>	60852629
<b>Application Number:</b>	60852453
<b>Application Number:</b>	60894907
<b>Application Number:</b>	60913449
<b>Application Number:</b>	12108278
<b>Application Number:</b>	60931370
<b>Application Number:</b>	60931939
<b>Application Number:</b>	60951944
<b>Application Number:</b>	60974810
<b>Application Number:</b>	60948406
<b>Application Number:</b>	61054427

<b>Property Type</b>	<b>Number</b>
Application Number:	12278964
Application Number:	60975798
Application Number:	14068542
Application Number:	61016183
Application Number:	61051886
Application Number:	61092278
Application Number:	61053955
Application Number:	61053962
Application Number:	61089806
Application Number:	12542622
Application Number:	14592814
Application Number:	61103447
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Application Number:	61168293
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Application Number:	61227025
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Application Number:	61173016
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Application Number:	61245943
Application Number:	12889163
Application Number:	61261755
Application Number:	12948349
Application Number:	61294846
Application Number:	61302561
Application Number:	13006933
Application Number:	61294847
Application Number:	61302562
Application Number:	13007100
Application Number:	61304448
Application Number:	61324310
Application Number:	14508927
Application Number:	61383086
Application Number:	61321877
Application Number:	13083066

<b>Property Type</b>	<b>Number</b>
Application Number:	61321878
Application Number:	12758001
Application Number:	61708424
Application Number:	61736428
Application Number:	14760204
Application Number:	61436542
Application Number:	13359127
Application Number:	61470989
Application Number:	14007829
Application Number:	61469425
Application Number:	61514861
Application Number:	61448570
Application Number:	61474661
Application Number:	61619309
Application Number:	61701328
Application Number:	61774375
Application Number:	61623711
Application Number:	61619324
Application Number:	14390378
Application Number:	61701191
Application Number:	61753273
Application Number:	61835464
Application Number:	61867473
Application Number:	61877418
Application Number:	61892242
Application Number:	61911184
Application Number:	61912184
Application Number:	62026573
Application Number:	61978176
Application Number:	62012970
Application Number:	14952720
Application Number:	14179944
Application Number:	14236883
Application Number:	15137912
Application Number:	15155856
Application Number:	62394537
Application Number:	15592772
Application Number:	15498633

Property Type	Number
Application Number:	62481078
Application Number:	15876336
Application Number:	16063198
Application Number:	61092378
Application Number:	62669912
PCT Number:	US2008077996
PCT Number:	US2009044403
PCT Number:	US2009054075
PCT Number:	US2009054209
PCT Number:	US2009059904
PCT Number:	US2009059903
PCT Number:	US2009069356
PCT Number:	US2010030655
PCT Number:	US2010032580
PCT Number:	US2009044409
PCT Number:	US2009054089
PCT Number:	US2009054213
PCT Number:	US2009004734
PCT Number:	US2010050026
PCT Number:	US2010057034
PCT Number:	US2011035979
PCT Number:	US2011021307
PCT Number:	US2011021333
PCT Number:	US2011024727
PCT Number:	US2011031794
PCT Number:	US2010030656
PCT Number:	US2010050024
PCT Number:	US2017051664

**CORRESPONDENCE DATA**

**Fax Number:** (202)672-5399

*Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.*

**Phone:** 202-672-5300

**Email:** IPDocketing@foley.com, abuckmaster@foley.com

**Correspondent Name:** FOLEY & LARDNER LLP (REBECCA L. HAYS)

**Address Line 1:** 3000 K STREET N.W.

**Address Line 2:** SUITE 600

**Address Line 4:** WASHINGTON, D.C. 20007-5109

<b>ATTORNEY DOCKET NUMBER:</b>	109112-0102, ET SEQ.
<b>NAME OF SUBMITTER:</b>	REBECCA L. HAYS
<b>SIGNATURE:</b>	/Rebecca Hays/
<b>DATE SIGNED:</b>	10/09/2019

**Total Attachments: 74**

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TECHNOLOGY TRANSFER AGREEMENT

THIS TECHNOLOGY TRANSFER AGREEMENT (the "*Agreement*"), is made on May 29, 2019, by and between GENOMATICA, INC., a Delaware corporation with its principal place of business at 4757 Nexus Center Drive, San Diego, CA 92121 ("*Purchaser*") and REG LIFE SCIENCES, LLC, an Iowa limited liability company with its principal place of business at 600 Gateway Blvd, South San Francisco, CA 94080 ("*Company*"). Company and Purchaser are collectively referred to herein as the "*Parties*" and individually as a "*Party*".

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

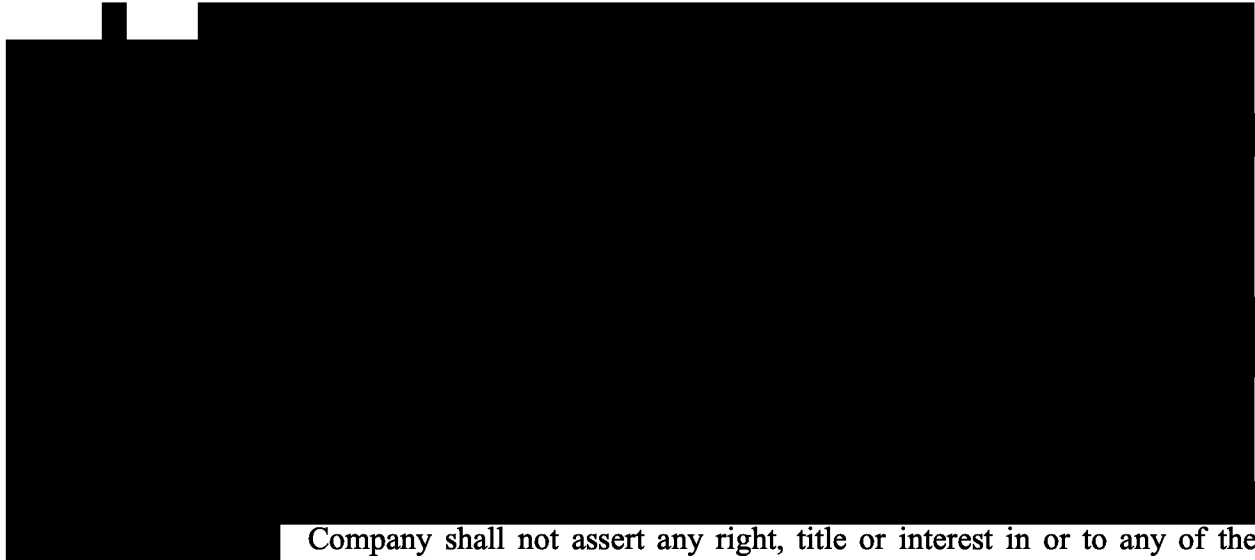
2. **Assignment.** Effective as of the Closing Date, which shall be the date first indicated above, Company hereby absolutely, unconditionally and irrevocably sells, assigns, conveys, transfers and delivers to Purchaser, and Purchaser does hereby purchase, acquire and accept from Company, all of Company's right, title and interest, in and to the Owned Intellectual Property, including, without limitation, (i) all of the patents and patent applications identified on **Exhibit A** hereto, and all issuances, divisions, continuations, continuations-in-part, reissues, extensions, reexaminations and renewals thereof, and priority applications whether provisional, national, international and/or regional and whether active or inactive, (the "*Assigned Patents*"),

[REDACTED]

together with all goodwill associated with the foregoing, and all rights thereunder, remedies against past, present and future infringements or misappropriation thereof,

including, without limitation, income, royalties and damages related to any of the foregoing, and rights to protection of past, present and future interests in any Owned Intellectual Property under the Laws of all jurisdictions (collectively, the "**Assigned IP**"), in each case free and clear of any and all Encumbrances other than Permitted Encumbrances. Company hereby waives any moral rights, or rights equivalent thereto, that Company may have in or to the Assigned IP worldwide, without compensation or the need for further action by any Person. To the extent that the foregoing waiver is ineffective under applicable Law, Company agrees that Company shall not assert such moral rights against Purchaser or any other Person. This foregoing assignment is intended to be an absolute assignment and not by way of security. Company and its successors and assigns agree not to make any claim or argument in contravention of any of the foregoing.

**3. Authorization.** Company hereby authorizes and requests the Commissioner of Patents and Trademarks in the United States Patent and Trademark Office and the Register of Copyrights in the United States Copyright Office, and the officials of corresponding entities or agencies in any applicable jurisdictions throughout the world to record and register this Agreement upon request by Purchaser.



Company shall not assert any right, title or interest in or to any of the Assigned Patents, Assigned Trademarks, Assigned Domain Names or any other Assigned IP and shall not use any of the Assigned Patents, Assigned Trademarks, Assigned Domain Names or any other Assigned IP except as may be expressly authorized by Purchaser, or its successors or assigns, in writing.

**5. [Reserved]**

**6. Miscellaneous.**

**(a) Asset Purchase Agreement Controls.** This Agreement is executed and delivered pursuant to, is in accordance with, and is subject to, all of the representations, warranties, covenants, indemnities and miscellaneous provisions set forth in the Asset Purchase Agreement; all of which shall survive the consummation of the transactions contemplated hereby on the basis and to the extent set forth in the Asset Purchase Agreement. In the event that any provision of this

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



[SIGNATURE PAGES FOLLOWS]

IN WITNESS WHEREOF, the undersigned have executed this Technology Transfer Agreement on and as of the date first indicated above.

**COMPANY:**

**REG LIFE SCIENCES, LLC**

By: 

Name: Eric Bowen

Title: Vice President

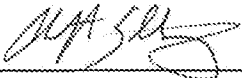
*[Company Signature Page to Technology Transfer Agreement]*

**PATENT  
REEL: 050695 FRAME: 0673**

IN WITNESS WHEREOF, the undersigned has executed this Technology Transfer Agreement on and as of the date first indicated above.

**PURCHASER:**

**GENOMATICA, INC.**

By:   
Name: CHRISTOPHE SCHILLING  
Title: CEO

*[Purchaser Signature Page to Technology Transfer Agreement]*

**PATENT**  
**REEL: 050695 FRAME: 0674**

**EXHIBIT A-1**

**Assigned Patents and Patent Applications**

**Australia**

Docket No. / Family ID	Title	App. No. / App. Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0129 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	2014200805 5/18/2007	2014200805 1/7/2016	Granted	Reg Life Sciences, LLC
109112-0196 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	2008256921 5/20/2008	2008256921 5/14/2015	Granted	Reg Life Sciences, LLC
109112-0215 LS00010	REDUCTION OF THE TOXIC EFFECT OF IMPURITIES FROM RAW MATERIALS BY EXTRACTIVE FERMENTATION	2008304180 9/26/2008	2008304180 6/12/2014	Granted	Reg Life Sciences, LLC
109112-0295 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	2009329970 12/23/2009	2009329970 11/10/2016	Granted	Reg Life Sciences, LLC
109112-0467 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	2013243602 4/2/2013	2013243602 3/9/2017	Granted	Reg Life Sciences, LLC
109112-0483 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	2014225436 2013246405	2014225436 8/23/2018	Granted	Reg Life Sciences, LLC
109112-0498 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND AMIDOAMINES AND USES THEREOF	3/12/2013	2013246405 11/15/2018	Granted	Reg Life Sciences, LLC
109112-0513 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	2013243601 4/2/2013	2013243601 10/4/2018	Granted	Reg Life Sciences, LLC
109112-0529 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	2013316124 3/15/2013		Pending	Reg Life Sciences, LLC
109112-0541 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	2014207522 1/16/2014	2014207522 3/30/2017	Granted	Reg Life Sciences, LLC
109112-0580 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	2015238773 5/18/2007	2015238773 6/15/2017	Granted	Reg Life Sciences, LLC
109112-0589 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	2014277874 6/16/2014		Pending	Reg Life Sciences, LLC
109112-0606 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	2014308977 8/19/2014	2014308977 6/15/2017	Granted	Reg Life Sciences, LLC
109112-0622 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	2014318531 9/12/2014		Pending	Reg Life Sciences, LLC

**PATENT**

**REEL: 050695 FRAME: 0675**

Docket No. / Family ID	Title	App. No. / App. Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0636 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	2014360086 12/5/2014	2014360086 8/2/2018	Granted	Reg Life Sciences, LLC
109112-0660 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	2016225853 12/23/2009	2016225853 9/22/2016	Granted	Reg Life Sciences, LLC
109112-0661 LS00053	SEMISYNTHETIC ROUTES TO ORGANIC COMPOUNDS	2015243186 4/10/2015		Pending	Reg Life Sciences, LLC
109112-0689 LS00039	NOVEL CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	2016231497 4/2/2013	2016231497 12/18/2017	Granted	Reg Life Sciences, LLC
109112-0701 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	2015277261 6/16/2015		Pending	Reg Life Sciences, LLC
109112-0705 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	2015289430 7/17/2015		Pending	Reg Life Sciences, LLC
109112-0719 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	2017200596 1/16/2014		Pending	Reg Life Sciences, LLC
109112-0726 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	2017203360 5/18/2007	2017203360 10/18/2018	Granted	Reg Life Sciences, LLC
109112-0776 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDE VARIANTS WITH IMPROVED PROPERTIES	2016370490 12/13/2016		Pending	Reg Life Sciences, LLC
109112-0863 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	2017325856 9/14/2017		Pending	Reg Life Sciences, LLC
109112-0890 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	2019202572 3/15/2013		Pending	Reg Life Sciences, LLC
109112-0892 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	2019202790 1/16/2014		Pending	Reg Life Sciences, LLC



Brazil

Docket No. / Family ID	Title	App. No. / App. Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0130 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	PI0712205-5 5/18/2007		Pending	Reg Life Sciences, LLC
109112-0168 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	PI0809345-8 3/28/2008		Pending	Reg Life Sciences, LLC
109112-0197 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	PI0813359-0 5/20/2008		Pending	Reg Life Sciences, LLC
109112-0230 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	PI0912684-8 5/18/2009		Pending	Reg Life Sciences, LLC
109112-0254 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	PI0920650-7 10/7/2009		Pending	Reg Life Sciences, LLC
109112-0273 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	PI0920010-0 10/7/2009		Pending	Reg Life Sciences, LLC
109112-0296 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	PI0923572-8 12/23/2009		Pending	Reg Life Sciences, LLC
109112-0318 LS00019	PRODUCTION OF FATTY ACID ESTERS	PI1015313-6 4/27/2010		Pending	LS9, Inc. Consideration of the assignment to REG Life Sciences, Inc. will not be examined by the patent office until after the application is published.
109112-0327 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	PI0912690-2 5/18/2009		Pending	Reg Life Sciences, LLC
109112-0405 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	112012006681-1 9/23/2010		Pending	Reg Life Sciences, LLC
109112-0426 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	BR1120140059381 3/8/2012		Pending	Reg Life Sciences, LLC
109112-0468 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	BR1120140246742 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0484 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	BR1120150217630 3/7/2014		Pending	Reg Life Sciences, LLC
109112-0499 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND AMINOAMINES AND USES THEREOF	BR1120140255199 3/12/2013		Pending	Reg Life Sciences, LLC
109112-0514 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	1120140246750 4/2/2013		Pending	Reg Life Sciences, LLC

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109112-0530 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	BR1120150057829 3/15/2013		Pending	Reg Life Sciences, LLC
109112-0542 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	BR1120150170056 1/16/2014		Pending	Reg Life Sciences, LLC
109112-0590 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	1120150312330		Pending	Reg Life Sciences, LLC
109112-0616 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	112016006859.9 9/12/2014		Pending	Reg Life Sciences, LLC
109112-0640 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	112016012371.9 12/5/2014		Pending	Reg Life Sciences, LLC
109112-0650 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	BR1120160034422 8/19/2014		Pending	Reg Life Sciences, LLC
109112-0662 LS00053	SEMISYNTHETIC ROUTES TO ORGANIC COMPOUNDS	1120160232321 4/10/2015		Pending	Reg Life Sciences, LLC
109112-0688 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	BR1220170008064 1/16/2014		Pending	Reg Life Sciences, LLC
109112-0695 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	1120160292359 6/16/2015		Pending	Reg Life Sciences, LLC
109112-0704 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	BR1220170008323 1/16/2014		Pending	Reg Life Sciences, LLC
109112-0706 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	1120170011050 7/17/2015		Pending	Reg Life Sciences, LLC
109112-0731 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	1220170101145 5/18/2007	BR 122017010114-5 11/6/2018	Granted	Reg Life Sciences, LLC
109112-0799 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDE VARIANTS WITH IMPROVED PROPERTIES	1120180121932 12/13/2016		Pending	Reg Life Sciences, LLC
109112-0807 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	BR1220180689870 9/23/2010		Pending	Reg Life Sciences, LLC
109112-0812 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	1220190020248 5/18/2009		Pending	Reg Life Sciences, LLC
109112-0871 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	1120190049606 9/14/2017		Pending	Reg Life Sciences, LLC

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109112-0131 LS00002	MICROORGANISMS TRANSFORMED WITH ACETYL-COA CARBOXYLASE AND WAX SYNTHASE FOR PRODUCTION OF FATTY ACID DERIVATIVES	2650773 5/18/2007	2650773 12/2/2014	Granted	Reg Life Sciences, LLC
109112-0169 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	2678915 3/28/2008	2678915 4/9/2019	Granted	Reg Life Sciences, LLC
109112-0198 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	2679085 5/20/2008	2679085 4/10/2018	Granted	Reg Life Sciences, LLC
109112-0216 LS00010	REDUCTION OF THE TOXIC EFFECT OF IMPURITIES FROM RAW MATERIALS BY EXTRACTIVE FERMENTATION	2692266 9/26/2008	2692266 4/16/2019	Granted	Reg Life Sciences, LLC
109112-0231 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	2722441 5/18/2009		Pending	Reg Life Sciences, LLC
109112-0255 LS00015	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	2738938 10/7/2009		Pending	Reg Life Sciences, LLC
109112-0274 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	2740037 10/7/2009		Pending	Reg Life Sciences, LLC
109112-0297 LS00017	NOVEL METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	2747516 12/23/2009		Pending	Reg Life Sciences, LLC
109112-0319 LS00019	PRODUCTION OF FATTY ACID ESTERS	2759273 4/27/2010	2759273 1/9/2018	Granted	Reg Life Sciences, LLC
109112-0328 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	2722442 5/18/2009	2722442 2/12/2019	Granted	Reg Life Sciences, LLC
109112-0357 LS00024	PRODUCTION OF BRANCHED CHAIN FATTY ACIDS AND DERIVATIVES THEREOF IN RECOMBINANT MICROBIAL CELLS	2823928 5/10/2011		Pending	Reg Life Sciences, LLC
109112-0406 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	2774975 9/23/2010		Pending	Reg Life Sciences, LLC
109112-0427 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	2848253 3/8/2012		Pending	Reg Life Sciences, LLC
109112-0469 LS00039	NOVEL CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	2883064 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0485 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	2904406 3/7/2014		Pending	Reg Life Sciences, LLC
109112-0500 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND AMIDOAMINES AND USES THEREOF	2870257 3/12/2013		Pending	Reg Life Sciences, LLC
109112-0515 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	2883968 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0531 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	2885041 3/15/2013		Pending	Reg Life Sciences, LLC

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109112-0543 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	2898317 1/16/2014		Pending	Reg Life Sciences, LLC
109112-0591 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	2915229 6/16/2014		Pending	Reg Life Sciences, LLC
109112-0608 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	2921625 8/19/2014		Pending	Reg Life Sciences, LLC
109112-0615 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	2923730 9/12/2014		Pending	Reg Life Sciences, LLC
109112-0644 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	2932017 12/5/2014		Pending	Reg Life Sciences, LLC
109112-0663 LS00053	SEMISYNTHETIC ROUTES TO ORGANIC COMPOUNDS	2944558 4/10/2015		Pending	Reg Life Sciences, LLC
109112-0694 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	2951925 6/16/2015		Pending	Reg Life Sciences, LLC
109112-0707 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	2955370 7/17/2015		Pending	Reg Life Sciences, LLC
109112-0800 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDE VARIANTS WITH IMPROVED PROPERTIES	3008836 12/13/2016		Pending	Reg Life Sciences, LLC
109112-0858 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	3035878 3/28/2008		Pending	Reg Life Sciences, LLC
109112-0862 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	3038266 9/14/2017		Pending	Reg Life Sciences, LLC
109112-0873 LS00015	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	3038491 10/7/2009		Pending	Reg Life Sciences, LLC

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109112-0133 LS00002	PRODUCTION OF FATTY ACID AND DERIVATIVES THEREOF	201510244069.3 5/18/2007		Pending	Reg Life Sciences, LLC
109112-0170 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	200880009283.9 3/28/2008	ZL200880009283.9 2/22/2017	Granted	Reg Life Sciences, LLC
109112-0199 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	200880014194.3 5/20/2008	ZL200880014194.3 12/11/2013	Granted	Reg Life Sciences, LLC
109112-0217 LS00010	REDUCTION OF THE TOXIC EFFECT OF IMPURITIES FROM RAW MATERIALS BY EXTRACTIVE FERMENTATION	200880106604.7 9/26/2008	ZL200880106604.7 5/18/2016	Granted	Reg Life Sciences, LLC
109112-0232 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	201510578739.5 5/18/2009	ZL201510578739.5 8/17/2016	Granted	Reg Life Sciences, LLC
109112-0233 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	201510575363.2 5/18/2009	ZL201510575363.2 1/18/2017	Granted	Reg Life Sciences, LLC
109112-0256 LS00015	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	200980148338.9 10/7/2009	ZL200980148338.9 1/6/2016	Granted	Reg Life Sciences, LLC
109112-0275 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	201510520756.3 10/7/2009	201510520756.3 11/9/2018	Granted	Reg Life Sciences, LLC
109112-0276 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	200980152677.4 10/7/2009	ZL200980152677.4 8/26/2015	Granted	Reg Life Sciences, LLC
109112-0298 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	200980157397.2 12/23/2009	ZL200980157397.2 1/27/2016	Granted	Reg Life Sciences, LLC
109112-0320 LS00019	PRODUCTION OF FATTY ACID ESTERS	201080027865.7 4/27/2010		Pending	Reg Life Sciences, LLC
109112-0329 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	200980117664.3 5/18/2009	ZL200980117664.3 1/6/2016	Granted	Reg Life Sciences, LLC
109112-0382 LS00030	PRODUCTION OF FATTY ACID DERIVATIVES	201080024722.0 4/10/2010	ZL201080024722.0 2/23/2018	Granted	Reg Life Sciences, LLC
109112-0407 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	201080053578.3 9/23/2010	ZL201080053578.3 5/25/2016	Granted	Reg Life Sciences, LLC
109112-0428 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	201280054084.6 3/8/2012	ZL201280054084.6 9/29/2017	Granted	Reg Life Sciences, LLC
109112-0470 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	201380026546.8 4/2/2013	ZL201380026546.8 1/23/2018	Granted	Reg Life Sciences, LLC
109112-0501 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND USES THEREOF	201380026545.3 3/12/2013		Pending	Reg Life Sciences, LLC
109112-0516 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	201380026304.9 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0532 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	201380058918.5 3/15/2013		Pending	Reg Life Sciences, LLC

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109112-0544 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	201480004992.3 1/16/2014		Pending	Reg Life Sciences, LLC
109112-0583 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	201480022365.2 3/7/2014	ZL201480022365.2 8/14/2018	Granted	Reg Life Sciences, LLC
109112-0584 LS00015	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	201510875963.0 10/7/2009		Pending	Reg Life Sciences, LLC
109112-0592 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	201480033702.8 6/16/2014		Pending	Reg Life Sciences, LLC
109112-0601 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	201510870936.4 5/18/2009		Pending	Reg Life Sciences, LLC
109112-0607 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	201480053627.1 8/19/2014		Pending	Reg Life Sciences, LLC
109112-0617 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	201480050054.7 9/12/2014		Pending	Reg Life Sciences, LLC
109112-0625 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	201610085050.3 5/18/2007		Pending	Reg Life Sciences, LLC
109112-0632 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	201610297467.6 9/23/2010		Pending	Reg Life Sciences, LLC
109112-0637 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	201480065828.3 12/5/2014		Pending	Reg Life Sciences, LLC
109112-0664 LS00053	SEMISYNTHETIC ROUTES TO ORGANIC COMPOUNDS	201580018870.4 4/10/2015		Pending	Reg Life Sciences, LLC
109112-0691 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	201580032792.3 6/16/2015		Pending	Reg Life Sciences, LLC
109112-0708 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	201580044132.7 7/17/2015		Pending	Reg Life Sciences, LLC
109112-0720 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	201710052351.0 3/28/2008		Pending	Reg Life Sciences, LLC
109112-0743 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	201710682902.1 3/8/2012		Pending	Reg Life Sciences, LLC
109112-0777 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDE VARIANTS WITH IMPROVED PROPERTIES	201680081302.3 12/13/2016		Pending	Reg Life Sciences, LLC
109112-0796 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND USES THEREOF	201810830455.4 3/12/2013		Pending	Reg Life Sciences, LLC
109112-0853 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	201910128731.7 12/23/2009		Pending	Reg Life Sciences, LLC
109112-0855 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	201910169609.4 1/16/2014		Pending	Reg Life Sciences, LLC
109112-0865 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	201780063821.1 9/14/2017		Pending	Reg Life Sciences, LLC



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109112-0471 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	14-240.039 4/2/2013	19945 4/24/2017	Granted	Reg Life Sciences, LLC
109112-0517 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	14-240.053 4/2/2013	19944 4/24/2017	Granted	Reg Life Sciences, LLC
109112-0533 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	15-067.845 3/15/2013	15067845 3/17/2017	Granted	Reg Life Sciences, LLC
109112-0545 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	15-173.779 1/16/2014	15173779 11/21/2016	Granted	Reg Life Sciences, LLC
109112-0593 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	15-293.885 6/16/2014	12115 2/21/2018	Granted	Reg Life Sciences, LLC
109112-0623 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	16-087.123 9/12/2014	80311 12/4/2017	Granted	Reg Life Sciences, LLC
109112-0627 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	16-056.244 8/19/2014	69430 8/19/2018	Granted	Reg Life Sciences, LLC
109112-0638 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	16-166816 12/5/2014	82442 12/5/2018	Granted	Reg Life Sciences, LLC



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109112-0134 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	07809099.0 5/18/2007	2024491 11/19/2014	Granted	LS9, Inc. (validations in name of Reg Life Sciences, LLC)
109112-0135 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	11005423.6 5/18/2007	2395074 11/19/2014	Granted	Reg Life Sciences, LLC
109112-0136 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	14193614.6 5/18/2007		Pending	Reg Life Sciences, LLC
109112-0137 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	09013640.9 5/18/2007	2157170 1/15/2014	Granted	Reg Life Sciences, LLC
109112-0200 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	08769538.3 5/20/2008	2160460 8/2/2017	Granted	Reg Life Sciences, LLC
109112-0235 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	15179791.7 5/18/2009	2998393 3/7/2018	Granted	Reg Life Sciences, LLC
109112-0236 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	09747776.4 5/18/2009	2288694 3/7/2018	Granted	Reg Life Sciences, LLC
109112-0257 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	15178817.1 10/7/2009	2975122 6/6/2018	Granted	Reg Life Sciences, LLC
109112-0258 LS00015	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	09819847.6 10/7/2009	2352824 9/2/2015	Granted	Reg Life Sciences, LLC
109112-0277 LS00016	MICROBIAL CELL FOR PRODUCING FATTY ALCOHOLS	14167362.4 10/7/2009	2796559 9/12/2018	Granted	Reg Life Sciences, LLC
109112-0278 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	09829536.3 10/7/2009	2367947 7/16/2014	Granted	Reg Life Sciences, LLC
109112-0299 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	09803969.6 12/23/2009	2382285 5/1/2019	Granted	Reg Life Sciences, LLC
109112-0321 LS00019	PRODUCTION OF FATTY ACID ESTERS	10770203.7 4/27/2010		Pending	Reg Life Sciences, LLC
109112-0330 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ACIDS AND FATTY ALCOHOLS	15153942.6 5/18/2009	2927315 9/19/2018	Granted	Reg Life Sciences, LLC
109112-0331 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	09747777.2 5/18/2009	2283121 2/11/2015	Granted	Reg Life Sciences, LLC
109112-0358 LS00024	PRODUCTION OF BRANCHED CHAIN FATTY ACIDS AND DERIVATIVES THEREOF IN RECOMBINANT MICROBIAL CELLS	11722657.1 5/10/2011	2663636 8/8/2018	Granted	Reg Life Sciences, LLC

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109112-0408 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	15153935.0 2/5/2015	2910630 10/24/2018	Granted	Reg Life Sciences, LLC
109112-0409 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	10819469.7 9/23/2010	2480680 2/11/2015	Granted	Reg Life Sciences, LLC
109112-0429 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	12709480.3 3/8/2012		Pending	Reg Life Sciences, LLC
109112-0438 LS00034	METHODS AND COMPOSITIONS FOR IMPROVED PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	12719914.9 4/2/2012		Pending	Reg Life Sciences, LLC
109112-0472 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	13766728.3 4/2/2013	2834350 11/16/2016	Granted	Reg Life Sciences, LLC
109112-0488 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	14717901.4 3/7/2014		Pending	Reg Life Sciences, LLC
109112-0503 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND AMIDOAMINES AND USES THEREOF	13711261.1 3/12/2013		Pending	Reg Life Sciences, LLC
109112-0518 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	13715879.6 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0534 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	13714142.0 3/15/2013	2895602 9/20/2017	Granted	Reg Life Sciences, LLC
109112-0546 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	14716444.6 1/16/2014	2946009 7/27/2016	Granted	Reg Life Sciences, LLC
109112-0562 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	14781729.0 9/12/2014	2964756 5/3/2017	Granted	Reg Life Sciences, LLC
109112-0566 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	14827593.6 12/5/2014		Pending	Reg Life Sciences, LLC
109112-0586 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	14738962.1 6/16/2014		Pending	Reg Life Sciences, LLC
109112-0604 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	15745054.5 7/17/2015	3137614 9/19/2018	Granted	Reg Life Sciences, LLC
109112-0605 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	14766256.3 8/19/2014		Pending	Reg Life Sciences, LLC
109112-0643 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	17187284.9 3/15/2013		Pending	Reg Life Sciences, LLC
109112-0648 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	15732504.4 6/16/2015		Pending	Reg Life Sciences, LLC
109112-0657 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	16181205.2 1/16/2014	3103867 5/16/2018	Granted	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0658 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	17168184.4 9/12/2014		Pending	Reg Life Sciences, LLC
109112-0666 LS00053	SEMISYNTHETIC ROUTES TO ORGANIC COMPOUNDS	15718726.1 4/10/2015		Pending	Reg Life Sciences, LLC
109112-0682 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	16198810.0 4/2/2013	3153579 3/14/2018	Granted	Reg Life Sciences, LLC
109112-0768 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	18160746.6 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0770 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	18153966.9 5/18/2007		Pending	Reg Life Sciences, LLC
109112-0773 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	18172072.3 1/16/2014		Pending	Reg Life Sciences, LLC
109112-0784 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ACIDS AND FATTY ALCOHOLS	18195170.8 5/18/2009		Pending	Reg Life Sciences, LLC
109112-0790 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	18189374.4 7/17/2015		Pending	Reg Life Sciences, LLC
109112-0806 LS00024	PRODUCTION OF BRANCHED CHAIN FATTY ACIDS AND DERIVATIVES THEREOF IN RECOMBINANT MICROBIAL CELLS	18187541.0 5/10/2011		Pending	Reg Life Sciences, LLC
109112-0811 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDE VARIANTS WITH IMPROVED PROPERTIES	16836213.5 12/13/2016		Pending	Reg Life Sciences, LLC
109112-0861 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	1772273.3 9/14/2017		Pending	Reg Life Sciences, LLC
109112-0872 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	19161705.9 12/23/2009		Pending	Reg Life Sciences, LLC
109112-0173 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	08744695.1 3/28/2008	2129785 2/18/2015	Granted	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0139 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	07809099.0 5/18/2007	2024491 11/19/2014	Granted	Reg Life Sciences, LLC
109112-0140 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	11005423.6 5/18/2007	2395074 11/19/2014	Granted	Reg Life Sciences, LLC
109112-0141 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	09013640.9 5/18/2007	2157170 1/15/2014	Granted	Reg Life Sciences, LLC
109112-0174 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	08744695.1 3/28/2008	2129785 2/18/2015	Granted	Reg Life Sciences, LLC
109112-0259 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	09819847.6 10/7/2009	2352824 9/2/2015	Granted	Reg Life Sciences, LLC
109112-0279 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	09829536.3 10/7/2009	2367947 7/16/2014	Granted	Reg Life Sciences, LLC
109112-0299-FR LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	09803969.6 12/23/2009	2382285 5/1/2019	Granted	Reg Life Sciences, LLC
109112-0332 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	09747777.2 5/18/2009	2283121 2/11/2015	Granted	Reg Life Sciences, LLC
109112-0410 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	10819469.7 9/23/2010	2480680 2/11/2015	Granted	Reg Life Sciences, LLC
109112-0675 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	14716444.6 1/16/2014	2946009 7/27/2016	Granted	Reg Life Sciences, LLC
109112-0679 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	13766728.3 4/2/2013	2834350 11/16/2016	Granted	Reg Life Sciences, LLC
109112-0732 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	14781729.0 9/12/2014	2964756 5/3/2017	Granted	Reg Life Sciences, LLC
109112-0737 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	08769538.3 5/20/2008	2160460 8/2/2017	Granted	Reg Life Sciences, LLC
109112-0749 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	13714142.0 3/15/2013	2895602 9/20/2017	Granted	Reg Life Sciences, LLC
109112-0758 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	16198810.0 4/2/2013	3153579 3/14/2018	Granted	Reg Life Sciences, LLC
109112-0783 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	15178817.1 10/7/2009	2975122 6/6/2018	Granted	Reg Life Sciences, LLC
109112-0787 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ACIDS AND FATTY ALCOHOLS	15153942.6 5/18/2009	2927315 9/19/2018	Granted	Reg Life Sciences, LLC
109112-0793 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	15745054.5 7/17/2015	3137614 9/19/2018	Granted	Reg Life Sciences, LLC

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109112-0816 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	15179791.7 5/18/2009	2998393 3/7/2018	Granted	Reg Life Sciences, LLC
109112-0817 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	09747776.4 5/18/2009	2288694 3/7/2018	Granted	Reg Life Sciences, LLC
109112-0818 LS00016	MICROBIAL CELL FOR PRODUCING FATTY ALCOHOLS	14167362.4 10/7/2009	2796559 9/12/2018	Granted	Reg Life Sciences, LLC
109112-0819 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	16181205.2 1/16/2014	3103867 5/16/2018	Granted	Reg Life Sciences, LLC
109112-0843 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	15153935.0 2/5/2015	2910630 10/24/2018	Granted	Reg Life Sciences, LLC
109112-0848 LS00024	PRODUCTION OF BRANCHED CHAIN FATTY ACIDS AND DERIVATIVES THEREOF IN RECOMBINANT MICROBIAL CELLS	11722657.1 5/10/2011	2663636 8/8/2018	Granted	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0142 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	07809099.0 5/18/2007	2024491 11/19/2014	Granted	Reg Life Sciences, LLC
109112-0143 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	11005423.6 5/18/2007	2395074 11/19/2014	Granted	Reg Life Sciences, LLC
109112-0144 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	09013640.9 5/18/2007	2157170 1/15/2014	Granted	Reg Life Sciences, LLC
109112-0175 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	08744695.1 3/28/2008	2129785 2/18/2015	Granted	Reg Life Sciences, LLC
109112-0260 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	09819847.6 10/7/2009	2352824 9/2/2015	Granted	Reg Life Sciences, LLC
109112-0280 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	09829536.3 10/7/2009	2367947 7/16/2014	Granted	Reg Life Sciences, LLC
109112-0299-DE LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	09803969.6 12/23/2009	2382285 5/1/2019	Granted	Reg Life Sciences, LLC
109112-0333 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	09747777.2 5/18/2009	2283121 2/11/2015	Granted	Reg Life Sciences, LLC
109112-0411 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	10819469.7 9/23/2010	2480680 2/11/2015	Granted	Reg Life Sciences, LLC
109112-0473 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	13766728.3 4/2/2013	2834350 11/16/2016	Granted	Reg Life Sciences, LLC
109112-0673 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	14716444.6 1/16/2014	2946009 7/27/2016	Granted	Reg Life Sciences, LLC
109112-0734 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	14781729.0 9/12/2014	2964756 5/3/2017	Granted	Reg Life Sciences, LLC
109112-0735 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	08769538.3 5/20/2008	2160460 8/2/2017	Granted	Reg Life Sciences, LLC
109112-0747 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	13714142.0 3/15/2013	2895602 9/20/2017	Granted	Reg Life Sciences, LLC
109112-0748 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	15179791.7 5/18/2009	2998393 3/7/2018	Granted	Reg Life Sciences, LLC
109112-0756 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	16198810.0 4/2/2013	3153579 3/14/2018	Granted	Reg Life Sciences, LLC
109112-0781 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	15178817.1 10/7/2009	2975122 6/6/2018	Granted	Reg Life Sciences, LLC
109112-0785 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ACIDS AND FATTY ALCOHOLS	15153942.6 5/18/2009	2927315 9/19/2018	Granted	Reg Life Sciences, LLC

Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0791 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	15745054.5 7/17/2015	3137614 9/19/2018	Granted	Reg Life Sciences, LLC
109112-0820 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	09747776.4 5/18/2009	2288694 3/7/2018	Granted	Reg Life Sciences, LLC
109112-0821 LS00016	MICROBIAL CELLS FOR PRODUCING FATTY ALCOHOLS	14167362.4 10/7/2009	2796559 9/12/2018	Granted	Reg Life Sciences, LLC
109112-0822 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	16181205.2 1/16/2014	3103867 5/16/2018	Granted	Reg Life Sciences, LLC
109112-0842 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	15153935.0 2/5/2015	2910630 10/24/2018	Granted	Reg Life Sciences, LLC
109112-0846 LS00024	PRODUCTION OF BRANCHED CHAIN FATTY ACIDS AND DERIVATIVES THEREOF IN RECOMBINANT MICROBIAL CELLS	11722657.1 5/10/2011	2663636 8/8/2018	Granted	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0145 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	734/DELNP/2014 2/13/2007		Pending	Reg Life Sciences, LLC
109112-0146 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	9659/DELNP/2008 2/13/2007		Pending	Reg Life Sciences, LLC
109112-0176 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	6112/DELNP/2009 3/28/2008	282085 3/30/2017	Granted	Reg Life Sciences, LLC
109112-0201 LS00008	HYDROCARBON-PRODUCING GENES AND MEHTODS OF THEIR USE	5809/DELNP/2009 5/20/2008	284340 6/19/2017	Granted	Reg Life Sciences, LLC
109112-0218 LS00010	REDUCTION OF THE TOXIC EFFECT OF IMPURITIES FROM RAW MATERIALS BY EXTRACTIVE FERMENTATION	223/DELNP/2010 9/26/2008	291723 1/15/2018	Granted	Reg Life Sciences, LLC
109112-0238 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING ALKANES	7613/DELNP/2010 5/18/2009	307796 2/27/2019	Granted	Reg Life Sciences, LLC
109112-0261 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	3393/DELNP/2011 10/7/2009	294080 3/9/2018	Granted	Reg Life Sciences, LLC
109112-0281 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	3895/DELNP/2011 10/7/2009	303045 11/13/2018	Granted	Reg Life Sciences, LLC
109112-0300 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	5606/DELNP/2011 12/23/2009	309281 3/15/2019	Granted	Reg Life Sciences, LLC
109112-0322 LS00019	PRODUCTION OF FATTY ACID ESTERS	9257/DELNP/2011 11/25/2011		Pending	Reg Life Sciences, LLC
109112-0335 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	7614/DELNP/2010 5/18/2009	302019 10/9/2018	Granted	Reg Life Sciences, LLC
109112-0412 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	2571/DELNP/2012	307697 2/20/2019	Granted	Reg Life Sciences, LLC
109112-0430 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	1856/DELNP/2014 3/8/2012		Pending	Reg Life Sciences, LLC
109112-0474 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	9109/DELNP/2014 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0489 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	3386/DELNP/2015 3/7/2014		Pending	Reg Life Sciences, LLC
109112-0504 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND AMIDOAMINES AND USES THEREOF	9217/DELNP/2014 3/12/2013		Pending	Reg Life Sciences, LLC
109112-0519 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	9107/DELNP/2014 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0535 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	2323/DELNP/2015 3/15/2013		Pending	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0547 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	5749/DELNLP/2015 1/16/2014		Pending	Reg Life Sciences, LLC
109112-0594 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	11837/DELNLP/2015 6/16/2014		Pending	Reg Life Sciences, LLC
109112-0621 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	201617010272 9/12/2014		Pending	Reg Life Sciences, LLC
109112-0630 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	201617006124 8/19/2014		Pending	Reg Life Sciences, LLC
109112-0646 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	201617022788 12/5/2014		Pending	Reg Life Sciences, LLC
109112-0649 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	201618015610 3/28/2008		Pending	Reg Life Sciences, LLC
109112-0668 LS00053	SEMISYNTHETIC ROUTES TO ORGANIC COMPOUNDS	201617036588 4/10/2015		Pending	Reg Life Sciences, LLC
109112-0698 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	201717001558 6/16/2015		Pending	Reg Life Sciences, LLC
109112-0711 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	201717004648 7/17/2015		Pending	Reg Life Sciences, LLC
109112-0767 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	201818004890 10/7/2009		Pending	Reg Life Sciences, LLC
109112-0774 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDE VARIANTS WITH IMPROVED PROPERTIES	201817023595 12/13/2016		Pending	Reg Life Sciences, LLC
109112-0815 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	201818030773 10/7/2009		Pending	Reg Life Sciences, LLC
109112-0870 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	201917011120 9/14/2017		Pending	Reg Life Sciences, LLC
109112-0886 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	201818044527 12/23/2009		Pending	Reg Life Sciences, LLC
109112-0887 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING ALKANES	201818046478 5/18/2009		Pending	Reg Life Sciences, LLC

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## Indonesia

Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0301 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	W00201102255 12/23/2009		Pending	Reg Life Sciences, LLC
109112-0413 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	P00201501111 9/23/2010	IDP000056123 1/24/2019	Granted	Reg Life Sciences, LLC
109112-0414 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	W00201201143 9/23/2010	P000038713 5/26/2015	Granted	Reg Life Sciences, LLC
109112-0431 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	P00201401630 3/8/2012	P000049742 2/26/2018	Granted	Reg Life Sciences, LLC
109112-0475 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	P00201406814 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0490 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	P00201506244 3/7/2014		Pending	Reg Life Sciences, LLC
109112-0505 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND AMIDOAMINES AND USES THEREOF	P00201407043 3/12/2013	IDP000054412 11/5/2018	Granted	Reg Life Sciences, LLC
109112-0520 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	P00201406815 4/2/2013	IDP000055781 1/14/2019	Granted	Reg Life Sciences, LLC
109112-0536 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	P00201502165 3/15/2013		Pending	Reg Life Sciences, LLC
109112-0548 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	P00201504553 1/16/2014		Pending	Reg Life Sciences, LLC
109112-0595 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	P00201600007 6/16/2014		Pending	Reg Life Sciences, LLC
109112-0619 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	P00201602106 9/12/2014		Pending	Reg Life Sciences, LLC
109112-0629 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	P00201601462 8/19/2014		Pending	Reg Life Sciences, LLC
109112-0647 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	P00201604251 12/5/2014		Pending	Reg Life Sciences, LLC
109112-0667 LS00053	SEMISYNTHETIC ROUTES TO ORGANIC COMPOUNDS	P00201607385 4/10/2015		Pending	Reg Life Sciences, LLC
109112-0710 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	P00201701025 7/17/2015		Pending	Reg Life Sciences, LLC
109112-0764 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	P00201800338 3/8/2012		Pending	Reg Life Sciences, LLC
109112-0856 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND AMIDOAMINES AND USES THEREOF	P00201808374 3/12/2013		Pending	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0869 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	P00201903036 9/14/2017		Pending	Reg Life Sciences, LLC
109112-0891 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	P00201902582 12/23/2009		Pending	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0147 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	07809099.0 5/18/2007	2024491 1/19/2014	Granted	Reg Life Sciences, LLC
109112-0148 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	11005423.6 5/18/2007	2395074 1/19/2014	Granted	Reg Life Sciences, LLC
109112-0149 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	09013640.9 5/18/2007	2157170 1/15/2014	Granted	Reg Life Sciences, LLC
109112-0177 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	08744695.1 3/28/2008	2129785 2/18/2015	Granted	Reg Life Sciences, LLC
109112-0262 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	09819847.6 10/7/2009	2352824 9/2/2015	Granted	Reg Life Sciences, LLC
109112-0283 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	09829536.3 10/7/2009	2367947 7/16/2014	Granted	Reg Life Sciences, LLC
109112-0299/IT LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	09803969.6 12/23/2009	2382285 5/1/2019	Granted	Reg Life Sciences, LLC
109112-0336 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	09747777.2 5/18/2009	2283121 2/11/2015	Granted	Reg Life Sciences, LLC
109112-0358/IT LS00024	PRODUCTION OF BRANCHED CHAIN FATTY ACIDS AND DERIVATIVES THEREOF IN RECOMBINANT MICROBIAL CELLS	11722657.1 5/10/2011	2663636 8/8/2018	Granted	Reg Life Sciences, LLC
109112-0415 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	10819469.7 9/23/2010	2480680 2/11/2015	Granted	Reg Life Sciences, LLC
109112-0677 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	14716444.6 1/16/2014	2946009 7/27/2016	Granted	Reg Life Sciences, LLC
109112-0681 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	13766728.3 4/2/2013	2834350 1/16/2016	Granted	Reg Life Sciences, LLC
109112-0739 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	08769538.3 5/20/2008	2160460 8/2/2017	Granted	Reg Life Sciences, LLC
109112-0751 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	13714142.0 3/15/2013	2895602 9/20/2017	Granted	Reg Life Sciences, LLC
109112-0760 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	16198810.0 4/2/2013	3153579 3/14/2018	Granted	Reg Life Sciences, LLC
109112-0780 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	15178817.1 10/7/2009	2975122 6/6/2018	Granted	Reg Life Sciences, LLC
109112-0789 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ACIDS AND FATTY ALCOHOLS	15153942.6 5/18/2009	2927315 9/19/2018	Granted	Reg Life Sciences, LLC
109112-0794 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	15745054.5 7/17/2015	3137614 9/19/2018	Granted	Reg Life Sciences, LLC

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109112-0823 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	14781729.0 9/12/2014	2964756 5/3/2017	Granted	Reg Life Sciences, LLC
109112-0824 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	15179791.7 5/18/2009	2998393 3/7/2018	Granted	Reg Life Sciences, LLC
109112-0825 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	16181205.2 1/16/2014	3103867 5/16/2018	Granted	Reg Life Sciences, LLC
109112-0826 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	09747776.4 5/18/2009	2288694 3/7/2018	Granted	Reg Life Sciences, LLC
109112-0827 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	14167362.4 10/7/2009	2796559 9/12/2018	Granted	Reg Life Sciences, LLC
109112-0845 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	15153935.0 2/5/2015	2910630 10/24/2018	Granted	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0150 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	2009-511091 5/18/2007	5933909 5/13/2016	Granted	Reg Life Sciences, LLC
109112-0151 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	2014-115874 5/18/2007	5961662 7/1/2016	Granted	Reg Life Sciences, LLC
109112-0178 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	2010-501269 3/28/2008	5863088 1/8/2016	Granted	Reg Life Sciences, LLC
109112-0202 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	2014-249577 5/20/2008	6173294 7/14/2017	Granted	Reg Life Sciences, LLC
109112-0203 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	2010-509505 5/20/2008	5912251 4/8/2016	Granted	Reg Life Sciences, LLC
109112-0432 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	2014-530656 3/8/2012	6141282 5/12/2017	Granted	Reg Life Sciences, LLC
109112-0476 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	2015-504688 4/2/2013	6230594 10/27/2017	Granted	Reg Life Sciences, LLC
109112-0491 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	2015-561715 3/7/2014	6335934 5/11/2018	Granted	Reg Life Sciences, LLC
109112-0506 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND USES THEREOF	2015-505727 3/12/2013	6251241 12/1/2017	Granted	Reg Life Sciences, LLC
109112-0521 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	2015-504687 4/2/2013	6381518 8/10/2018	Granted	Reg Life Sciences, LLC
109112-0537 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	2015-531914 3/15/2013	6401703 9/14/2018	Granted	Reg Life Sciences, LLC
109112-0549 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	2015-553830 1/16/2014	6063585 12/22/2016	Granted	Reg Life Sciences, LLC
109112-0585 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	2015-211435 3/28/2008		Pending	Reg Life Sciences, LLC
109112-0596 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	2016-519714 6/16/2014		Pending	Reg Life Sciences, LLC
109112-0609 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	2016-536390 8/19/2014		Pending	Reg Life Sciences, LLC
109112-0614 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	2016-542833 9/12/2014	6486372 3/1/2019	Granted	Reg Life Sciences, LLC
109112-0641 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	2016-536609 12/5/2014		Pending	Reg Life Sciences, LLC
109112-0651 LS0002P	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	2016-126210 5/18/2007	6275203 1/19/2018	Granted	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0669 LS00053	SEMISYNTHETIC ROUTES TO ORGANIC COMPOUNDS	2016-561647 4/10/2015		Pending	Reg Life Sciences, LLC
109112-0685 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	2016-202155 1/16/2014	6211162 9/22/2017	Granted	Reg Life Sciences, LLC
109112-0692 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	2016-573541 6/16/2015		Pending	Reg Life Sciences, LLC
109112-0712 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	2017-502836 7/17/2015		Pending	Reg Life Sciences, LLC
109112-0725 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	2017-011738 3/8/2012		Pending	LS9, Inc.; Zhihao HU; Andreas W. SCHIRMER; Grace J. LEE; John R. HALIBURTON
109112-0744 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	2017-174449 1/16/2014		Pending	Reg Life Sciences, LLC
109112-0761 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	2017-241266 3/7/2014		Pending	Reg Life Sciences, LLC
109112-0771 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	2018-072000 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0778 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDE VARIANTS WITH IMPROVED PROPERTIES	2018-531169 12/13/2016		Pending	Reg Life Sciences, LLC
109112-0809 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	2018-207088 3/28/2008		Pending	Reg Life Sciences, LLC
109112-0814 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	2018-168156 3/15/2013		Pending	Reg Life Sciences, LLC
109112-0857 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	2019-027399 9/12/2014		Pending	Reg Life Sciences, LLC
109112-0866 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	base PCT/US2017/051664 9/14/2017		Pending	Reg Life Sciences, LLC
109112-0893 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	2019-084119 1/16/2014		Pending	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0286 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	PI2011001661 10/7/2009	MY-165006-A 2/28/2018	Granted	Reg Life Sciences, LLC
109112-0433 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	PI2014000550 3/8/2012		Pending	Reg Life Sciences, LLC
109112-0478 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	PI2014002838 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0508 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND AMIDOMINES USES THEREOF	PI2014002870 3/12/2013	MY167227 8/14/2018	Granted	Reg Life Sciences, LLC
109112-0523 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	PI2014002773 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0539 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	PI2015000505 3/15/2013		Pending	Reg Life Sciences, LLC
109112-0551 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	PI2015001785 1/16/2014	MY167434 8/28/2018	Granted	Reg Life Sciences, LLC
109112-0598 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	PI2015002915 6/16/2014		Pending	Reg Life Sciences, LLC
109112-0600 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	PI2015002213 3/7/2014		Pending	Reg Life Sciences, LLC
109112-0620 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	PI2016000456 9/12/2014		Pending	Reg Life Sciences, LLC
109112-0626 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	PI2016000300 8/19/2014		Pending	Reg Life Sciences, LLC
109112-0635 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	PI2016001246 10/7/2009		Pending	Reg Life Sciences, LLC
109112-0645 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	PI 2016001018 12/5/2014		Pending	Reg Life Sciences, LLC
109112-0672 LS00053	SEMISYNTHETIC ROUTES TO ORGANIC COMPOUNDS	PI2016001798 4/10/2015		Pending	Reg Life Sciences, LLC
109112-0696 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	PI2016002190 6/16/2015		Pending	Reg Life Sciences, LLC
109112-0715 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	PI2017000065 7/17/2015		Pending	Reg Life Sciences, LLC
109112-0775 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDE VARIANTS WITH IMPROVED PROPERTIES	PI2018000942 12/13/2016		Pending	Reg Life Sciences, LLC
109112-0797 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	PI 2018001430 1/16/2014		Pending	Reg Life Sciences, LLC



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109112-0868 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	PI2019001368 9/14/2017		Pending	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0153 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	MX/a/2014/001863 5/18/2007	344588 12/20/2016	Granted	Reg Life Sciences, LLC
109112-0154 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	MX/a/2008/014603 5/18/2007	323049 8/26/2014	Granted	Reg Life Sciences, LLC
109112-0180 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	MX/a/2009/009371 3/28/2008	306812 1/17/2013	Granted	Reg Life Sciences, LLC
109112-0205 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	MX/a/2009/009383 5/20/2008	306112 12/13/2012	Granted	Reg Life Sciences, LLC
109112-0241 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING ALKANES	MX/a/2010/012192 5/18/2009	325128 11/6/2014	Granted	Reg Life Sciences, LLC
109112-0265 LS00015	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	MX/a/2011/003597 10/7/2009	300411 6/19/2012	Granted	Reg Life Sciences, LLC
109112-0287 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	MX/a/2011/004286 10/7/2009	314489 10/23/2013	Granted	Reg Life Sciences, LLC
109112-0303 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	MX/a/2015/002534 12/23/2009		Pending	Reg Life Sciences, LLC
109112-0304 LS00017	NOVEL METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	MX/a/2011/006785 12/23/2009	328128 2/26/2015	Granted	Reg Life Sciences, LLC
109112-0339 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	MX/a/2010/012197 5/18/2009	343063 10/21/2016	Granted	Reg Life Sciences, LLC
109112-0416 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	MX/a/2015/011061 9/23/2010		Pending	Reg Life Sciences, LLC
109112-0417 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	MX/a/2012/003472 9/23/2010	332776 8/27/2015	Granted	Reg Life Sciences, LLC
109112-0450 LS00035	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDE VARIANTS WITH IMPROVED PROPERTIES	MX/a/2018/007298 12/13/2016		Pending	Reg Life Sciences, LLC
109112-0479 LS00039	ENZYMES CARBOXYLIC ACID REDUCTASE (CAR) AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	MX/a/2014/011903 4/2/2013	343296 11/1/2016	Granted	Reg Life Sciences, LLC
109112-0493 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	MX/a/2015/011738 3/7/2014		Pending	Reg Life Sciences, LLC
109112-0509 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND USES THEREOF	MX/a/2014/012350 3/12/2013	354883 3/23/2018	Granted	Reg Life Sciences, LLC
109112-0524 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	MX/a/2014/011905 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0540 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	MX/a/2015/003305 3/15/2013		Pending	Reg Life Sciences, LLC
109112-0552 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	MX/a/2015/009138 1/16/2014	346830 4/3/2017	Granted	Reg Life Sciences, LLC

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109112-0599 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	MX/a/2015/016947 6/16/2014		Pending	Reg Life Sciences, LLC
109112-0611 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	MX/a/2016/002009 8/19/2014	357722 7/20/2018	Granted	Reg Life Sciences, LLC
109112-0618 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	MX/a/2016/003255 9/12/2014		Pending	Reg Life Sciences, LLC
109112-0639 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	MX/a/2016/007054 12/5/2014		Pending	Reg Life Sciences, LLC
109112-0671 LS00053	SEMISYNTHETIC ROUTES TO ORGANIC COMPOUNDS	MX/a/2016/013240 4/10/2015		Pending	Reg Life Sciences, LLC
109112-0683 LS00039	ENZYMES CARBOXYLIC ACID REDUCTASE (CAR) AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	MX/a/2016/013852 4/2/2013	358177 8/8/2018	Granted	Reg Life Sciences, LLC
109112-0697 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	MX/a/2016/016565 6/16/2015		Pending	Reg Life Sciences, LLC
109112-0714 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	MX/a/2017/000669 7/17/2015		Pending	Reg Life Sciences, LLC
109112-0727 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	MX/a/2016/017013 5/18/2007	356086 5/11/2018	Granted	Reg Life Sciences, LLC
109112-0728 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	MX/a/2017/003816 1/16/2014	356997 6/22/2018	Granted	Reg Life Sciences, LLC
109112-0741 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	MX/a/2016/013850 5/18/2009	350285 9/4/2017	Granted	Reg Life Sciences, LLC
109112-0755 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	MX/a/2018/004669 8/19/2014		Pending	Reg Life Sciences, LLC
109112-0766 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND USES THEREOF	MX/a/2018/003178 3/12/2013		Pending	Reg Life Sciences, LLC
109112-0864 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	MX/a/2019/002913 9/14/2017		Pending	Reg Life Sciences, LLC
109112-0889 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	MX/a/2019/003770 12/23/2009		Pending	Reg Life Sciences, LLC
109112-0896 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	MX/a/2019/004568 4/2/2013		Pending	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0875 LS00057	THIOESTERASE VARIANTS HAVING IMPROVED ACTIVITY FOR THE PRODUCTION OF MEDIUM-CHAIN FATTY ACID DERIVATIVES	PCT/US2018/025970 4/3/2018		Pending	Reg Life Sciences, LLC
109112-0895 LS00060	MULTIFUNCTIONAL FATTY ACID DERIVATIVES AND BIOSYNTHESIS THEREOF	PCT/US2019/030530 5/3/2019		Pending	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0204 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	10-2009-7026189 5/20/2008	10-1646966 8/3/2016	Granted	Reg Life Sciences, LLC
109112-0240 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING ALKANES	10-2010-7028136 5/18/2009	10-1739511 5/18/2017	Granted	Reg Life Sciences, LLC
109112-0264 LS00015	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	10-2011-7010451 10/7/2009	10-1717569 3/13/2017	Granted	Reg Life Sciences, LLC
109112-0285 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	10-2011-7012116 10/7/2009	10-1636403 6/29/2016	Granted	Reg Life Sciences, LLC
109112-0338 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	10-2010-7028190 5/18/2009	10-1735549 5/8/2017	Granted	Reg Life Sciences, LLC
109112-0477 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	10-2014-7030704 4/2/2013	10-1831331 2/14/2018	Granted	Reg Life Sciences, LLC
109112-0492 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	10-2015-7027462 3/7/2014		Pending	Reg Life Sciences, LLC
109112-0507 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND AMIDOAMINES AND USES THEREOF	10-2014-7031804 3/12/2013		Pending	Reg Life Sciences, LLC
109112-0522 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	10-2014-7030467 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0538 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	10-2015-7009459 3/15/2013		Pending	Reg Life Sciences, LLC
109112-0550 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	10-2015-7021992 1/16/2014	10-1746040 6/5/2017	Granted	Reg Life Sciences, LLC
109112-0597 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	10-2016-7000963 6/16/2014		Pending	Reg Life Sciences, LLC
109112-0624 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	10-2016-7009710 9/12/2014		Pending	Reg Life Sciences, LLC
109112-0631 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	10-2016-7007133 8/19/2014		Pending	Reg Life Sciences, LLC
109112-0653 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	10-2016-7021221 5/20/2008	10-1862691 5/24/2018	Granted	Reg Life Sciences, LLC
109112-0654 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	10-2016-7017382 10/7/2009	10-1700296 1/20/2017	Granted	Reg Life Sciences, LLC
109112-0655 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	10-2016-7017865 12/5/2014		Pending	Reg Life Sciences, LLC
109112-0656 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	10-2017-7015121 1/16/2014		Pending	Reg Life Sciences, LLC

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Docket No. / Family ID	Title	Application No. / Application Date	Patent/Reg. No. Grant/Reg. Date	Status	Owner Name
109112-0670 LS00053	SEMISYNTHETIC ROUTES TO ORGANIC COMPOUNDS	10-2016-7031282 4/10/2015		Pending	Reg Life Sciences, LLC
109112-0693 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	10-2017-7001306 6/16/2015		Pending	Reg Life Sciences, LLC
109112-0713 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	10-2017-7004621 7/17/2015		Pending	Reg Life Sciences, LLC
109112-0729 LS00015	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	10-2017-7006851 10/7/2009	10-1840354 3/14/2018	Granted	Reg Life Sciences, LLC
109112-0745 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	10-2017-7026945 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0801 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDE VARIANTS WITH IMPROVED PROPERTIES	10-2018-7020089 12/13/2016		Pending	Reg Life Sciences, LLC
109112-0854 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	10-2019-7004188 8/19/2014		Pending	Reg Life Sciences, LLC
109112-0859 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	10-2019-7005741 4/2/2013		Pending	Reg Life Sciences, LLC
109112-0867 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	10-2019-7010422 9/14/2017		Pending	Reg Life Sciences, LLC

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109112-0156 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	07809099.0 5/18/2007	2024491 11/19/2014	Granted	Reg Life Sciences, LLC
109112-0157 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	11005423.6 5/18/2007	2395074 11/19/2014	Granted	Reg Life Sciences, LLC
109112-0158 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	09013640.9 5/18/2007	2157170 1/15/2014	Granted	Reg Life Sciences, LLC
109112-0182 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	08744695.1 3/28/2008	2129785 2/18/2015	Granted	Reg Life Sciences, LLC
109112-0267 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	09819847.6 10/7/2009	2352824 9/2/2015	Granted	Reg Life Sciences, LLC
109112-0291 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	09829536.3 10/7/2009	2367947 7/16/2014	Granted	Reg Life Sciences, LLC
109112-0299-ES LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	09803969.6 12/23/2009	2382285 5/1/2019	Granted	Reg Life Sciences, LLC
109112-0341 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	09747777.2 5/18/2009	2283121 2/11/2015	Granted	Reg Life Sciences, LLC
109112-0420 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	10819469.7 9/23/2010	2480680 2/11/2015	Granted	Reg Life Sciences, LLC
109112-0674 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	14716444.6 1/16/2014	2946009 7/27/2016	Granted	Reg Life Sciences, LLC
109112-0678 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	13766728.3 4/2/2013	2834350 v	Granted	Reg Life Sciences, LLC
109112-0733 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	14781729.0 9/12/2014	2964756 5/3/2017	Granted	Reg Life Sciences, LLC
109112-0736 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	08769538.3 5/20/2008	2160460 8/2/2017	Granted	Reg Life Sciences, LLC
109112-0752 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	13714142.0 3/15/2013	2895602 9/20/2017	Granted	Reg Life Sciences, LLC
109112-0757 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	16198810.0 4/2/2013	3153579 3/14/2018	Granted	Reg Life Sciences, LLC
109112-0782 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	15178817.1 10/7/2009	2975122 6/6/2018	Granted	Reg Life Sciences, LLC
109112-0786 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ACIDS AND FATTY ALCOHOLS	15153942.6 5/18/2009	2927315 9/19/2018	Granted	Reg Life Sciences, LLC
109112-0792 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	15745054.5 7/17/2015	3137614 9/19/2018	Granted	Reg Life Sciences, LLC

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109112-0828 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	09747776.4 5/18/2009	2288694 3/7/2018	Granted	Reg Life Sciences, LLC
109112-0829 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	14167362.4 10/7/2009	2796559 9/12/2018	Granted	Reg Life Sciences, LLC
109112-0830 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	15179791.7 5/18/2009	2998393 3/7/2018	Granted	Reg Life Sciences, LLC
109112-0831 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	16181205.2 1/16/2014	3103867 5/16/2018	Granted	Reg Life Sciences, LLC
109112-0841 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	15153935.0 2/5/2015	2910630 10/24/2018	Granted	Reg Life Sciences, LLC
109112-0847 LS00024	PRODUCTION OF BRANCHED CHAIN FATTY ACIDS AND DERIVATIVES THEREOF IN RECOMBINANT MICROBIAL CELLS	11722657.1 5/10/2011	2663636 8/8/2018	Granted	Reg Life Sciences, LLC



United Kingdom

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109112-0159 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	07809099.0 5/18/2007	2024491 11/19/2014	Granted	Reg Life Sciences, LLC
109112-0160 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	11005423.6 5/18/2007	2395074 11/19/2014	Granted	Reg Life Sciences, LLC
109112-0161 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	09013640.9 5/18/2007	2157170 1/15/2014	Granted	Reg Life Sciences, LLC
109112-0183 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	08744695.1 3/28/2008	2129785 2/18/2015	Granted	Reg Life Sciences, LLC
109112-0268 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	09819847.6 10/7/2009	2352824 9/2/2015	Granted	Reg Life Sciences, LLC
109112-0292 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	09829536.3 10/7/2009	2367947 7/16/2014	Granted	Reg Life Sciences, LLC
109112-0299-GB LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	09803969.6 12/23/2009	2382285 5/1/2019	Granted	Reg Life Sciences, LLC
109112-0342 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	09747777.2 5/18/2009	2283121 2/11/2015	Granted	Reg Life Sciences, LLC
109112-0421 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	10819469.7 9/23/2010	2480680 2/11/2015	Granted	Reg Life Sciences, LLC
109112-0676 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	14716444.6 1/16/2014	2946009 7/27/2016	Granted	Reg Life Sciences, LLC
109112-0680 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	13766728.3 4/2/2013	2834350 11/16/2016	Granted	Reg Life Sciences, LLC
109112-0738 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	08769538.3 5/20/2008	2160460 8/2/2017	Granted	Reg Life Sciences, LLC
109112-0750 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	13714142.0 3/15/2013	2895602 9/20/2017	Granted	Reg Life Sciences, LLC
109112-0759 LS00039	CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	16198810.0 4/2/2013	3153579 3/14/2018	Granted	Reg Life Sciences, LLC
109112-0779 LS00015	METHOD AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	15178817.1 10/7/2009	2975122 6/6/2018	Granted	Reg Life Sciences, LLC
109112-0788 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ACIDS AND FATTY ALCOHOLS	15153942.6 5/18/2009	2927315 9/19/2018	Granted	Reg Life Sciences, LLC
109112-0795 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	15745054.5 7/17/2015	3137614 9/19/2018	Granted	Reg Life Sciences, LLC
109112-0832 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	09747776.4 5/18/2009	2288694 3/7/2018	Granted	Reg Life Sciences, LLC

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109112-0835 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	15179791.7 5/18/2009	2998393 3/7/2018	Granted	Reg Life Sciences, LLC
109112-0836 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	14167362.4 10/7/2009	2796559 9/12/2018	Granted	Reg Life Sciences, LLC
109112-0837 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	14781729.0 9/12/2014	2964756 5/3/2017	Granted	Reg Life Sciences, LLC
109112-0839 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	16181205.2 1/16/2014	3103867 5/16/2018	Granted	Reg Life Sciences, LLC
109112-0844 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	15153935.0 2/5/2015	2910630 10/24/2018	Granted	Reg Life Sciences, LLC
109112-0849 LS00024	PRODUCTION OF BRANCHED CHAIN FATTY ACIDS AND DERIVATIVES THEREOF IN RECOMBINANT MICROBIAL CELLS	11722657.1 5/10/2011	2663636 8/8/2018	Granted	Reg Life Sciences, LLC

United States of America

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109112-0102 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	12/575430 10/7/2009	8999686 4/7/2015	Granted	Reg Life Sciences, LLC
109112-0103 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	13/647185 10/8/2012	9068201 6/30/2015	Granted	Reg Life Sciences, LLC
109112-0109 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	12/889066 9/23/2010	9133406 9/15/2015	Granted	Reg Life Sciences, LLC
109112-0111 LS00008	GENETICALLY ENGINEERED CELL ENCODING OLE AMINO ACID MOTIFS IN A CARBON SOURCE PRODUCING ALIPHATIC KETONES OR OLEFINS	12/278962 5/20/2008	9200299 12/1/2015	Granted	Reg Life Sciences, LLC
109112-0112 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	12/645497 12/23/2009	9175234 11/3/2015	Granted	Reg Life Sciences, LLC
109112-0116 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	14/720240 5/22/2015	9890401 2/13/2018	Granted	Reg Life Sciences, LLC
109112-0117 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	14/826657 8/14/2015	9587231 3/7/2017	Granted	Reg Life Sciences, LLC
109112-0123 LS00038	METATHESIS TRANSFORMATIONS OF MICROBIALLY-PRODUCED FATTY ACIDS AND FATTY ACID DERIVATIVES	13/444579 4/11/2012	9163267 10/20/2015	Granted	Reg Life Sciences, LLC
109112-0127 LS00001	MODIFIED MICROORGANISM AND USES THEREFOR	12/526209 12/6/2010	8535916 9/17/2013	Granted	Reg Life Sciences, LLC
109112-0162 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	13/870426 4/25/2013	9598706 3/21/2017	Granted	Reg Life Sciences, LLC
109112-0185 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	13/529990 6/21/2012	9017984 4/28/2015	Granted	Reg Life Sciences, LLC
109112-0186 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	13/099986 3/28/2008	8283143 10/9/2012	Granted	Reg Life Sciences, LLC
109112-0187 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	12/278960 3/28/2008	8110670 2/7/2012	Granted	Reg Life Sciences, LLC
109112-0193 LS00006	PROCESS FOR PRODUCING LOW MOLECULAR WEIGHT HYDROCARBONS FROM RENEWABLE RESOURCES	12/278961 8/8/2008	8110093 2/7/2012	Granted	Reg Life Sciences, LLC
109112-0221 LS00010	REDUCTION OF THE TOXIC EFFECT OF IMPURITIES FROM RAW MATERIALS BY EXTRACTIVE FERMENTATION	12/239562 9/26/2008	8313934 11/20/2012	Granted	Reg Life Sciences, LLC
109112-0227 LS00011	METHODS AND COMPOSITIONS FOR PRODUCING OLEFINS	13/452449 4/20/2012	8597922 12/3/2013	Granted	Reg Life Sciences, LLC
109112-0228 LS00011	METHODS AND COMPOSITIONS FOR PRODUCING OLEFINS	12/673752 12/22/2008	8183028 5/22/2012	Granted	Reg Life Sciences, LLC
109112-0243 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	14/472192 8/28/2014	9481899 11/1/2016	Granted	Reg Life Sciences, LLC

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109112-0245 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING ALKANES	13/625107 9/24/2012	8846371 9/30/2014	Granted	Reg Life Sciences, LLC
109112-0246 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	12/710237 2/22/2010	8323924 12/4/2012	Granted	Reg Life Sciences, LLC
109112-0269 LS00015	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	12/575427 10/7/2009	8097439 1/17/2012	Granted	Reg Life Sciences, LLC
109112-0343 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS OR FATTY ALDEHYDES	14/061512 10/23/2013	9670512 6/6/2017	Granted	Reg Life Sciences, LLC
109112-0344 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS OR FATTY ALDEHYDES	13/552522 7/18/2012	8658404 2/25/2014	Granted	Reg Life Sciences, LLC
109112-0345 LS00020	METHOD FOR PRODUCING A FATTY ALCOHOL OR FATTY ALDEHYDE	12/710238 2/22/2010	8268599 9/18/2012	Granted	Reg Life Sciences, LLC
109112-0364 LS00024	PRODUCTION OF BRANCHED CHAIN FATTY ACIDS AND DERIVATIVES THEREOF IN RECOMBINANT MICROBIAL CELLS	13/104819 5/10/2011	8530221 9/10/2013	Granted	Reg Life Sciences, LLC
109112-0373 LS00026	SURFACTANTS AND CLEANING COMPOSITIONS COMPRISING MICROBIALLY PRODUCED BRANCHED FATTY ALCOHOLS	13/026871 2/14/2011	8859259 10/14/2014	Granted	Reg Life Sciences, LLC
109112-0388 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	14/424387 3/15/2013	9879239 1/30/2018	Granted	Reg Life Sciences, LLC
109112-0422 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	14/709232 5/11/2015		Pending	Reg Life Sciences, LLC
109112-0436 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	13/232927 9/14/2011	8372610 2/12/2013	Granted	Reg Life Sciences, LLC
109112-0440 LS00034	METHODS AND COMPOSITIONS FOR IMPROVED PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	14/007857 4/2/2012		Pending	Reg Life Sciences, LLC
109112-0482 LS00039	NOVEL CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	14/390350 4/2/2013	9340801 5/17/2016	Granted	Reg Life Sciences, LLC
109112-0497 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	14/773149 3/7/2014		Pending	Reg Life Sciences, LLC
109112-0512 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND AMIDOAMINES AND USES THEREOF	14/394070 3/12/2013	9683247 6/20/2017	Granted	Reg Life Sciences, LLC
109112-0555 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	14/761299 7/15/2015	9683219 6/20/2017	Granted	Reg Life Sciences, LLC
109112-0560 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	14/463635 8/19/2014	9469586 10/18/2016	Granted	Reg Life Sciences, LLC
109112-0573 LS00053	A CHEMO-ENZYMATIC PROCESS	15/301754 4/10/2015		Pending	Reg Life Sciences, LLC
109112-0578 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	14/344658 3/8/2012		Pending	Reg Life Sciences, LLC
109112-0587 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	14/897285 6/16/2014		Pending	Reg Life Sciences, LLC

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109112-0588 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	15/284727 10/4/2016	10150975	Granted	Reg Life Sciences, LLC
109112-0610 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	14/912104 8/19/2014	9868682 1/16/2018	Granted	Reg Life Sciences, LLC
109112-0612 LS00050	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	15/439053 2/22/2017	9951322 4/24/2018	Granted	Reg Life Sciences, LLC
109112-0613 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	15/021515 9/12/2014		Pending	Reg Life Sciences, LLC
109112-0628 LS00039	NOVEL CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	15/154636 5/13/2016	9758769 9/12/2017	Granted	Reg Life Sciences, LLC
109112-0634 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	15/039052 12/5/2014		Pending	Reg Life Sciences, LLC
109112-0652 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	15/222657 7/28/2016	10208294 2/19/2019	Granted	Reg Life Sciences, LLC
109112-0659 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND AMIDOAMINES AND USES THEREOF	15/623855 6/15/2017		Pending	Reg Life Sciences, LLC
109112-0684 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	15/295336 10/17/2016		Pending	Reg Life Sciences, LLC
109112-0690 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	15/319272 6/16/2015		Pending	Reg Life Sciences, LLC
109112-0702 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	15/326844 7/17/2015		Pending	Reg Life Sciences, LLC
109112-0718 LS0002P	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	15/451881 3/7/2017		Pending	Reg Life Sciences, LLC
109112-0724 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	15/621430 6/13/2017	9873865 1/23/2018	Granted	Reg Life Sciences, LLC
109112-0740 LS00042	PRODUCTION OF FATTY ACID DERIVATIVES	15/650285 7/14/2017		Pending	Reg Life Sciences, LLC
109112-0742 LS00039	NOVEL CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	15/695205 9/5/2017	10301603 5/28/2019	Granted	Reg Life Sciences, LLC
109112-0762 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	15/888222 2/5/2018		Pending	Reg Life Sciences, LLC
109112-0763 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	15/873977 1/18/2018		Pending	Reg Life Sciences, LLC
109112-0769 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	15/958229 4/20/2018		Pending	Reg Life Sciences, LLC
109112-0803 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	16/191096 11/14/2018		Pending	Reg Life Sciences, LLC
109112-0804 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	16/209711 12/4/2018		Pending	Reg Life Sciences, LLC

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109112-0805 LS00019	PRODUCTION OF FATTY ACID ESTERS	16/234315 12/27/2018		Pending	Reg Life Sciences, LLC
109112-0813 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	15/705012 9/14/2017		Pending	Reg Life Sciences, LLC
109112-0851 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	16/272303 2/11/2019		Pending	Reg Life Sciences, LLC
109112-0878 LS00061	PRODUCTION OF NON-NATIVE MONOUNSATURATED FATTY ACIDS IN BACTERIA	62/725946 8/31/2018		Pending	Reg Life Sciences, LLC
109112-0879 LS00062	XYLR MUTANT FOR IMPROVED XYLOSE UTILIZATION OR IMPROVED CO-UTILIZATION OF GLUCOSE AND XYLOSE	62/726114 8/31/2018		Pending	Reg Life Sciences, LLC
109112-0880 LS00062	XYLR MUTANT FOR IMPROVED XYLOSE UTILIZATION OR IMPROVED CO-UTILIZATION OF GLUCOSE AND XYLOSE	62/731711 9/14/2018		Pending	Inventors(s). Assignment to Reg Life Sciences, LLC executed but not yet recorded.
109112-0881 LS00063	ENZYMATIC BIOSYNTHESIS OF LACTONES	62/794497 1/18/2019		Pending	Inventors(s). Assignment to Reg Life Sciences, LLC not yet executed.
109112-0882 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	15/619290 6/9/2017	10017455 7/10/2018	Granted	Reg Life Sciences, LLC
109112-0883 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	15/954451 4/16/2018		Pending	Reg Life Sciences, LLC

**EXHIBIT A-2**

**Expired, Abandoned, Inactive Patents and Patent Applications**

**Argentina**

<b>Docket No. / FamilyID</b>	<b>Title</b>	<b>Application No. / Application Date</b>	<b>Patent/Reg. No. / Grant/Reg. Date</b>	<b>Status</b>	<b>Owner Name</b>
109112-0375 LS00028	METHODS AND COMPOSITIONS RELATED TO FATTY ALCOHOL BIOSYNTHETIC ENZYMES	P1110101186 4/8/2011		Inactive Abandoned	LS9

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109112-0271 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	AP/P/2011/005673 5/3/2011		Inactive Abandoned	LS9, Inc.
109112-0294 LS00017	NOVEL METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	AP/P/2011/005777 7/6/2011		Inactive	



Australia

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109112-0128 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	2007254151 5/18/2007		Inactive Abandoned	LS9
109112-0167 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	2008230735 8/12/2009		Inactive Abandoned	LS9, Inc.
109112-0229 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	2009246082 5/18/2009		Inactive	LS9, Inc.
109112-0253 LS00015	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	2009302325 4/1/2011		Inactive	LS9, Inc.
109112-0272 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	2009320224 4/13/2011		Inactive	LS9, Inc.
109112-0326 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	2009246083 11/3/2011		Inactive Abandoned	LS9, Inc.
109112-0390 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	2013359360 8/4/2015		Inactive Abandoned	Reg Life Sciences, LLC

**Brazil**

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0310 LS00018	PRODUCTION OF COMMERCIAL BIODIESEL FROM GENETICALLY MODIFIED MICROORGANISMS	PI1014952-0 4/10/2010		Inactive Abandoned	LS9, Inc.
109112-0380 LS00030	METHODS AND COMPOSITIONS RELATED TO FATTY ALCOHOL BIOSYNTHETIC ENZYMES	PI1014472-2 4/10/2010		Inactive Abandoned	Reg Life Sciences, LLC
109112-0391 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	BR1120150138241 12/11/2013		Inactive	Reg Life Sciences, LLC
109112-0454 LS00036	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF HAVING IMPROVED ALIPHATIC CHAIN LENGTH AND SATURATION CHARACTERISTICS	BR112014002624-6 8/17/2012		Inactive Lapsed	Reg Life Sciences, LLC

Canada

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0311 LS00018	PRODUCTION OF COMMERCIAL BIODIESEL FROM GENETICALLY MODIFIED MICROORGANISMS	2758298 4/10/2010		Inactive Abandoned	Reg Life Sciences, LLC
109112-0381 LS00030	PRODUCTION OF FATTY ACID DERIVATIVES	2758301 4/10/2010		Inactive Abandoned	Reg Life Sciences, LLC
109112-0392 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	2891353 12/11/2013		Inactive Abandoned	Reg Life Sciences, LLC
109112-0443 LS00035	COMPOSITIONS COMPRISING AND METHODS FOR PRODUCING BETA-HYDROXY FATTY ACID ESTERS	2869144 3/30/2012		Inactive Abandoned	Reg Life Sciences, LLC
109112-0455 LS00036	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF HAVING IMPROVED ALIPHATIC CHAIN LENGTH AND SATURATION CHARACTERISTICS	2880785 8/17/2012		Inactive Abandoned	Reg Life Sciences, LLC

China

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0132 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	200780025145.5 5/18/2007		Inactive Abandoned	LS9, Inc.
109112-0234 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	200980117663.9 5/18/2009		Inactive Abandoned	Reg Life Sciences, LLC
109112-0393 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	201380072786.1 12/11/2013		Inactive Abandoned	Reg Life Sciences, LLC
109112-0456 LS00036	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF HAVING IMPROVED ALIPHATIC CHAIN LENGTH AND SATURATION CHARACTERISTICS	201280048631.X 8/17/2012		Inactive	Reg Life Sciences, LLC
109112-0603 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	201510993452.9 12/23/2009		Inactive Abandoned	Reg Life Sciences, LLC
109112-0703 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	201611033398.4 5/18/2009		Inactive Abandoned	Reg Life Sciences, LLC

Columbia

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0394 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	15-150.388 12/11/2013		Inactive Abandoned	Reg Life Sciences, LLC
109112-0487 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	15-231.793 3/7/2014		Inactive Abandoned	Reg Life Sciences, LLC
109112-0502 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND USES THEREOF	14-250.335 3/12/2013		Inactive Abandoned	Reg Life Sciences, LLC
109112-0665 LS00053	SEMISYNTHETIC ROUTES TO ORGANIC COMPOUNDS	NC2016/0003631 4/10/2015		Inactive Abandoned	Reg Life Sciences, LLC
109112-0700 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	NC2016/0005882 6/16/2015		Inactive Abandoned	Reg Life Sciences, LLC
109112-0709 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	NC2017/0000367 7/17/2015		Inactive	Reg Life Sciences, LLC

European Patent Office

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0138 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	09013650.8 10/9/2009		Inactive Withdrawn	LS9, Inc.
109112-0171 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	12194886.3 3/28/2008		Inactive Abandoned	Reg Life Sciences, LLC
109112-0312 LS00018	PRODUCTION OF COMMERCIAL BIODIESEL FROM GENETICALLY MODIFIED MICROORGANISMS	10762558.4 11/10/2011		Inactive Withdrawn	Reg Life Sciences, LLC
109112-0383 LS00030	PRODUCTION OF FATTY ACID DERIVATIVES	10762559.2 4/10/2010		Inactive Abandoned	Reg Life Sciences, LLC
109112-0395 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	13826804.0 12/11/2013		Inactive Abandoned	Reg Life Sciences, LLC
109112-0457 LS00036	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF HAVING IMPROVED ALIPHATIC CHAIN LENGTH AND SATURATION CHARACTERISTICS	12745953.5 8/17/2012		Inactive Abandoned	Reg Life Sciences, LLC

Hong Kong

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0237 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	11106369.7 5/18/2009		Inactive Abandoned	LS9, Inc.
109112-0334 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	11106376.8 6/21/2011		Inactive Abandoned	LS9, Inc.

**India**

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0384 LS00030	PRODUCTION OF FATTY ACID DERIVATIVES	7769/DELNP/2011 4/10/2010		Inactive Abandoned	Reg Life Sciences, LLC
109112-0396 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	3689/DELNP/2015 4/30/2015		Inactive Abandoned	Reg Life Sciences, LLC
109112-0458 LS00036	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF HAVING IMPROVED ALIPHATIC CHAIN LENGTH AND SATUARATION CHARACTERISTICS	1611/DELNP/2014 8/17/2012		Inactive Abandoned	LS9, Inc.



Indonesia

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0282 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	W00201101500 4/26/2011		Inactive Abandoned	
109112-0397 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	P00201502848 5/12/2015		Inactive Abandoned	Reg Life Sciences, LLC
109112-0446 LS00035	COMPOSITIONS COMPRISING AND METHODS FOR PRODUCING BETA-HYDROXY FATTY ACID ESTERS	P00201406256 3/30/2012		Inactive Abandoned	Reg Life Sciences, LLC
109112-0459 LS00036	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF HAVING IMPROVED ALIPHATIC CHAIN LENGTH AND SATURATION CHARACTERISTICS	P00201400661 8/17/2012		Inactive Abandoned	Reg Life Sciences, LLC

Japan

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0239 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING ALKANES	2011-509795 5/18/2009		Inactive	LS9, Inc.
109112-0263 LS00015	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	2011-531157 4/7/2011		Inactive	LS9
109112-0284 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	2011-534590 6/23/2011		Inactive	LS9, Inc.
109112-0337 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	2011-509796 5/18/2009		Inactive Abandoned	LS9, Inc.
109112-0398 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	2015-547504 12/11/2013		Inactive Abandoned	Reg Life Sciences, LLC LS9, Inc.
109112-0460 LS00036	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF HAVING IMPROVED ALIPHATIC CHAIN LENGTH AND SATURATION CHARACTERISTICS	2014-523993 8/17/2012		Inactive Abandoned	

Malaysia

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0302 LS00017	NOVEL METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	PI2011002901 6/21/2011		Inactive	
109112-0400 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	PI2015001511 6/11/2015		Inactive Abandoned	Reg Life Sciences, LLC
109112-0449 LS00035	COMPOSITIONS COMPRISING AND METHODS FOR PRODUCING BETA-HYDROXY FATTY ACID ESTERS	PI 2014002818 3/30/2012		Inactive Abandoned	Reg Life Sciences, LLC
109112-0461 LS00036	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF HAVING IMPROVED ALIPHATIC CHAIN LENGTH AND SATURATION CHARACTERISTICS	PI2014000280 8/17/2012		Inactive Abandoned	Reg Life Sciences, LLC

**Mexico**

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0401 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	MX/a/2015/007361 12/11/2013		Inactive	Reg Life Sciences, LLC

P.C.T

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0125 LS00001	MODIFIED MICROORGANISM USES THEREFOR	PCT/US2007/003736 2/13/2007		Inactive Expired	Reg Life Sciences, LLC
109112-0155 LS00002	PRODUCTION OF FATTY ACIDS & DERIVATIVES THEREOF	PCT/US2007/011923 5/18/2007		Inactive Expired	Reg Life Sciences, LLC
109112-0181 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	PCT/US2008/058788 3/28/2008		Inactive Expired	Reg Life Sciences, LLC
109112-0191 LS00006	PROCESS FOR PRODUCING LOW MOLECULAR WEIGHT HYDROCARBONS FROM RENEWABLE RESOURCES	PCT/US2008/057127 3/14/2008		Inactive Expired	Reg Life Sciences, LLC
109112-0206 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	PCT/US2008/064274 5/20/2008		Inactive Expired	Reg Life Sciences, LLC
109112-0211 LS00009	SYSTEMS AND METHODS FOR THE PRODUCTION OF FATTY ESTERS	PCT/US2008/069075 7/2/2008		Inactive Expired	LS9, Inc.
109112-0219 LS00010	REDUCTION OF THE TOXIC EFFECT OF IMPURITIES FROM RAW MATERIALS BY EXTRACTIVE FERMENTATION	PCT/US2008/077996 9/26/2008		Inactive Expired	LS9, Inc.
109112-0222 LS00011	METHODS AND COMPOSITIONS FOR PRODUCING OLEFINS	PCT/US2008/014029 12/22/2008		Inactive Expired	LS9, Inc.
109112-0242 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING ALKANES	PCT/US2009/044403 5/18/2009		Inactive Expired	Reg Life Sciences, LLC
109112-0248 LS00014	SYSTEMS AND METHODS FOR THE PRODUCTION OF MIXED FATTY ESTERS	PCT/US2009/054075 8/18/2008		Inactive Expired	LS9
109112-0249 LS00014	SYSTEMS AND METHODS FOR THE PRODUCTION OF MIXED FATTY ESTERS	PCT/US2009/054209 8/18/2009		Inactive Expired	Reg Life Sciences, LLC
109112-0266 LS00015	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	PCT/US2009/059904 10/7/2009		Inactive Expired	Reg Life Sciences, LLC
109112-0288 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	PCT/US2009/059903 10/7/2009		Inactive Expired	Reg Life Sciences, LLC
109112-0305 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	PCT/US2009/069356 12/23/2009		Inactive Expired	LS9, Inc.
109112-0313 LS00018	PRODUCTION OF COMMERCIAL BIODIESEL FROM GENETICALLY MODIFIED MICROORGANISMS	PCT/US2010/030655 4/10/2010		Inactive Expired	LS9, Inc.
109112-0323 LS00019	PRODUCTION OF FATTY ACID ESTERS	PCT/US2010/032580 4/27/2010		Inactive Expired	LS9, Inc.
109112-0340 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	PCT/US2009/044409 5/18/2009		Inactive Expired	LS9, Inc.
109112-0346 LS00021	SYSTEMS AND METHODS FOR PRODUCTION OF MIXED FATTY ESTERS	PCT/US2009/054089 8/18/2009		Inactive Expired	LS9, Inc.
109112-0347 LS00021	SYSTEMS AND METHODS FOR PRODUCTION OF MIXED FATTY ESTERS	PCT/US2009/054213 8/18/2009		Inactive Expired	Reg Life Sciences, LLC

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0348 LS00021	SYSTEMS AND METHODS FOR PRODUCTION OF MIXED FATTY ESTERS	PCT/US2009/004734 8/18/2009		Inactive Expired	LS9, Inc.
109112-0351 LS00022	PRODUCTION OF FATTY ACID DERIVATIVES	PCT/US2010/050026 9/23/2010		Inactive Expired	LS9, Inc.
109112-0354 LS00023	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	PCT/US2010/057034 11/17/2010		Inactive Expired	LS9, Inc.
109112-0359 LS00024	METHODS AND COMPOSITIONS FOR PRODUCING BRANCHED FATTY ALCOHOLS	PCT/US2011/035979 5/10/2011		Inactive Expired	LS9, Inc.
109112-0360 LS00024	METHODS AND COMPOSITIONS FOR PRODUCING BRANCHED FATTY ALCOHOLS	PCT/US2011/021307 1/14/2011		Inactive Expired	LS9
109112-0365 LS00025	METHODS AND COMPOSITIONS FOR PRODUCING BRANCHED FATTY ACIDS, DERIVATIVES AND HYDROCARBONS	PCT/US2011/021333 1/14/2011		Inactive Expired	LS9
109112-0369 LS00026	SURFACTANT AND CLEANING COMPOSITIONS COMPRISING MICROBIALY PRODUCED BRANCHED FATTY ALCOHOLS	PCT/US2011/024727 2/14/2011		Inactive Expired	LS9, Inc.
109112-0376 LS00028	METHODS AND COMPOSITIONS RELATED TO FATTY ALCOHOL BIOSYNTHETIC ENZYMES	PCT/US2011/031794 4/8/2011		Inactive Expired	LS9, Inc.
109112-0385 LS00030	PRODUCTION OF FATTY ACID DERIVATIVES	PCT/US2010/030656 4/10/2010		Inactive Expired	Reg Life Sciences, LLC
109112-0387 LS00043/44	ENZYME VARIANTS WITH IMPROVED ESTER SYNTHASE PROPERTIES	PCT/US2013/032564 3/15/2013		Inactive Expired	Reg Life Sciences, LLC
109112-0402 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	PCT/US2013/074427 12/11/2013		Inactive Expired	Reg Life Sciences, LLC
109112-0418 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	PCT/US2010/050024 9/23/2010		Inactive Expired	LS9, Inc.
109112-0434 LS00033	PRODUCTION OF ODD CHAIN FATTY ACID DERIVATIVES IN RECOMBINANT MICROBIAL CELLS	PCT/US2012/028256 3/8/2012		Inactive Expired	LS9, Inc.
109112-0439 LS00034	METHODS AND COMPOSITIONS FOR IMPROVED PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	PCT/US2012/031881 4/2/2012		Inactive Expired	Reg Life Sciences, LLC
109112-0451 LS00035	COMPOSITIONS COMPRISING AND METHODS FOR PRODUCING BETA-HYDROXY FATTY ACID ESTERS	PCT/US2012/031682 3/30/2012		Inactive Expired	Reg Life Sciences, LLC
109112-0462 LS00036	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF HAVING IMPROVED ALIPHATIC CHAIN LENGTH AND SATURATION CHARACTERISTICS	PCT/US2012/048620 8/17/2012		Inactive Expired	Reg Life Sciences, LLC
109112-0480 LS00039	NOVEL CAR ENZYMES AND IMPROVED PRODUCTION OF FATTY ALCOHOLS	PCT/US2013/035040 4/2/2013		Inactive Expired	Reg Life Sciences, LLC
109112-0494 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	PCT/US2014/021776 3/7/2014		Inactive Expired	Reg Life Sciences, LLC

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109112-0510 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND AMIDOAMINES AND USES THEREOF	PCT/US2013/030502 3/12/2013		Inactive Expired	Reg Life Sciences, LLC
109112-0525 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	PCT/US2013/035037 4/2/2013		Inactive Expired	Reg Life Sciences, LLC
109112-0553 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	PCT/US2014/011859 1/16/2014		Inactive	Reg Life Sciences, LLC
109112-0557 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	PCT/US2014/042594 6/16/2014		Inactive Expired	Reg Life Sciences, LLC
109112-0559 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	PCT/US2014/051757 8/19/2014		Inactive Expired	Reg Life Sciences, LLC
109112-0563 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	PCT/US2014/055510 9/12/2014		Inactive Expired	Reg Life Sciences, LLC
109112-0567 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	PCT/US2014/068950 12/5/2014		Inactive	Reg Life Sciences, LLC
109112-0570 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	PCT/US2015/041031 7/17/2015		Inactive Expired	Reg Life Sciences, LLC
109112-0572 LS00053	SEMISYNTHETIC ROUTES TO ORGANIC COMPOUNDS	PCT/US2015/025452 4/10/2015		Inactive Expired	Reg Life Sciences, LLC
109112-0575 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	PCT/US2015/036078 6/16/2015		Inactive Expired	Reg Life Sciences, LLC
109112-0576 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	PCT/EP2015/079832 12/15/2015		Inactive Expired	Reg Life Sciences, LLC
109112-0687 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	PCT/US2017/051664 9/14/2017		Inactive Expired	Reg Life Sciences, LLC
109112-0772 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDE VARIANTS WITH IMPROVED PROPERTIES	PCT/US2016/066405 12/13/2016		Inactive Expired	Reg Life Sciences, LLC

**Philippines**

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0289 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	1-2011-500795 10/7/2009		Inactive	
109112-0306 LS00017	METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	1-2011-501290 12/23/2009		Inactive Abandoned	
109112-0419 LS00031	PRODUCTION OF FATTY ACID DERIVATIVES	1-2012-500561 9/23/2010		Inactive Abandoned	LS9, Inc.



South Africa

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0290 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	2011/03835 5/25/2011	2011/03835 1/25/2012	Inactive Abandoned	
109112-0307 LS00017	NOVEL METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	2011/05380 7/21/2011	2011/05380	Inactive Abandoned	

South Korea

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0152 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	10-2008-7029344 5/18/2007		Inactive Abandoned	LS9, Inc.
109112-0179 LS00004	ENHANCED PRODUCTION OF FATTY ACID DERIVATIVES	10-2009-7021974 10/21/2009		Inactive Abandoned	LS9, Inc.
109112-0399 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	10-2015-7018571 12/11/2013		Inactive Expired	Reg Life Sciences, LLC

United States of America

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0104 LS00027	METHODS AND COMPOSITIONS FOR PRODUCING LINEAR ALKYL BENZENES	13/233489 9/15/2011		Inactive Abandoned	Reg Life Sciences, LLC
109112-0106 LS00014	SYSTEMS AND METHODS FOR THE PRODUCTION OF MIXED FATTY ESTERS	12/543412 8/18/2009		Inactive Abandoned	Reg Life Sciences, LLC
109112-0107 LS00002	PRODUCTION OF FATTY ACIDS & DERIVATIVES THEREOF	12/278957 5/18/2007		Inactive Abandoned	Reg Life Sciences, LLC
109112-0108 LS00021	SYSTEMS AND METHODS FOR PRODUCTION OF MIXED FATTY ESTERS	12/545001 8/20/2009		Inactive Abandoned	LS9, Inc.
109112-0110 LS00018	PRODUCTION OF COMMERCIAL BIODIESEL FROM GENETICALLY MODIFIED MICROORGANISMS	12/758000 4/11/2010		Inactive Abandoned	Reg Life Sciences, LLC
109112-0118 LS00018	PRODUCTION OF COMMERCIAL BIODIESEL FROM GENETICALLY MODIFIED MICROORGANISMS	14/668213 3/25/2015		Inactive Abandoned	Reg Life Sciences, LLC
109112-0119 LS00021	SYSTEMS AND METHODS FOR PRODUCTION OF MIXED FATTY ESTERS	14/599438 1/16/2015		Inactive Abandoned	Reg Life Sciences, LLC
109112-0120 LS00019	PRODUCTION OF FATTY ACID ESTERS	12/768419 4/27/2010		Inactive Abandoned	Reg Life Sciences, LLC
109112-0122 LS00004	ENHANCE PRODUCTION OF FATTY ACIDS DERIVATIVES	14/661219 3/18/2015		Inactive Abandoned	Reg Life Sciences, LLC
109112-0126 LS00001	MODIFIED MICROORGANISM & USES THEREFOR	60/772682 2/13/2006		Inactive Expired	
109112-0163 LS00002	PRODUCTION OF FATTY ACIDS & DERIVATIVES THEREOF	60/802016 5/19/2006		Inactive Expired	Reg Life Sciences, LLC
109112-0164 LS00002	PRODUCTION OF FATTY ACIDS & DERIVATIVES THEREOF	60/801995 5/19/2006		Inactive Expired	Reg Life Sciences, LLC
109112-0165 LS00002	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	13/302957 11/22/2011		Inactive Abandoned	LS9, Inc.
109112-0166 LS00003	ENHANCED PRODUCTION OF FATTY ACIDS DERIVATIVES	60/989798 11/21/2007		Inactive Expired	LS9, Inc.
109112-0184 LS00004	PRODUCTION OF FATTY ACIDS & DERIVATIVES THEREOF	60/908547 3/28/2007		Inactive Expired	Reg Life Sciences, LLC
109112-0188 LS00005	METHODS AND COMPOSITIONS FOR THE PRODUCTION OF HYDROCARBONS I	60/852587 10/17/2006		Inactive Expired	Unknown
109112-0189 LS00005	METHODS AND COMPOSITIONS FOR THE PRODUCTION OF HYDROCARBONS II	60/852629 10/17/2006		Inactive Expired	Unknown
109112-0190 LS00005	METHODS AND COMPOSITIONS FOR THE PRODUCTION OF HYDROCARBONS III	60/852453 10/17/2006		Inactive Expired	Unknown
109112-0192 LS00006	PROCESS FOR PRODUCTION OF LOW MOLECULAR WEIGHT HYDROCARBONS	60/894907 3/14/2007		Inactive Expired	Reg Life Sciences, LLC

Docket No. / FamilyID	Title	Application No. / Application Date	Patent/Reg. No. / Grant/Reg. Date	Status	Owner Name
109112-0194 LS00007	METHODS AND COMPOSITIONS FOR IDENTIFICATION OF HYDROCARBON RESPONSE, TRANSPORT AND BIOSYNTHESIS GENES	60/913449 4/23/2007		Inactive Expired	
109112-0195 LS00007	METHODS AND COMPOSITIONS FOR IDENTIFICATION OF HYDROCARBON RESPONSE, TRANSPORT AND BIOSYNTHESIS GENES	12/108278 4/23/2008		Inactive Abandoned	LS9, Inc.
109112-0207 LS00008	HYDROCARBON PRODUCING GENES AND METHODS OF THEIR USE	60/931370 5/22/2007		Inactive Expired	Reg Life Sciences, LLC
109112-0208 LS00008	HYDROCARBON PRODUCING GENES AND METHODS OF THEIR USE	60/931939 5/25/2007		Inactive Expired	Reg Life Sciences, LLC
109112-0209 LS00008	HYDROCARBON PRODUCING GENES AND METHODS OF THEIR USE	60/951944 7/25/2007		Inactive Expired	Reg Life Sciences, LLC
109112-0210 LS00008	HYDROCARBON PRODUCING GENES AND METHODS FOR THEIR USE	60/974810 9/24/2007		Inactive Expired	Reg Life Sciences, LLC
109112-0212 LS00009	SYSTEMS AND METHODS FOR THE PRODUCTION OF FATTY ACID ETHYL ESTERS	60/948406 7/6/2007		Inactive Expired	Reg Life Sciences, LLC
109112-0213 LS00009	SYSTEMS AND METHODS FOR THE PRODUCTION OF FATTY ACID ESTERS	61/054427 5/19/2008		Inactive Expired	LS9, Inc.
109112-0214 LS00009	SYSTEMS AND METHODS FOR THE PRODUCTION OF FATTY ESTERS	12/278964 4/19/2010		Inactive Abandoned	Reg Life Sciences, LLC
109112-0220 LS00010	METHODS FOR PRODUCING COMPOUNDS FROM CELLS	60/975798 9/27/2007		Inactive Expired	Reg Life Sciences, LLC
109112-0223 LS00011	METHODS AND COMPOSITIONS FOR PRODUCING OLEFINS	14/068542 10/31/2013		Inactive Abandoned	Reg Life Sciences, LLC
109112-0224 LS00011	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	61/016183 12/21/2007		Inactive Expired	Reg Life Sciences, LLC
109112-0225 LS00011	METHODS AND COMPOSITIONS FOR PRODUCING OLEFINS	61/051886 5/9/2008		Inactive Expired	Reg Life Sciences, LLC
109112-0226 LS00011	METHODS AND COMPOSITIONS FOR PRODUCING OLEFINS	61/092278 8/27/2008		Inactive Expired	Reg Life Sciences, LLC
109112-0244 LS00012	METHODS AND COMPOSITIONS FOR PRODUCING ALKANES	61/053955 5/16/2008		Inactive Expired	Reg Life Sciences, LLC
109112-0247 LS00013	METHODS AND COMPOSITIONS FOR PRODUCING ALKANES	61/053962 5/16/2008		Inactive Expired	LS9
109112-0250 LS00014	SYSTEMS AND METHODS FOR PRODUCTION OF MIXED FATTY ESTERS	61/089806 8/18/2008		Inactive Expired	Reg Life Sciences, LLC
109112-0251 LS00014	SYSTEMS AND METHODS FOR THE PRODUCTION OF MIXED FATTY ESTERS	12/542622 8/17/2009		Inactive Abandoned	LS9
109112-0252 LS00014	SYSTEMS AND METHODS FOR PRODUCTION OF MIXED FATTY ESTERS	14/592814 1/8/2015		Inactive Abandoned	Reg Life Sciences, LLC

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109112-0270 LS00015	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALDEHYDES	61/103447 10/7/2008		Inactive Expired	Reg Life Sciences, LLC
109112-0293 LS00016	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS	61/109131 10/28/2008		Inactive Expired	Reg Life Sciences, LLC
109112-0309 LS00017	NOVEL METHODS AND COMPOSITIONS RELATED TO THIOESTERASE ENZYMES	61/140600 12/23/2008		Inactive Expired	Reg Life Sciences, LLC
109112-0314 LS00018	PRODUCTION OF ASTM COMPLIANT BIODIESEL BY FERMENTATION	61/168293 4/10/2009		Inactive Expired	Reg Life Sciences, LLC
109112-0315 LS00018	PRODUCTION OF COMMERCIAL BIODIESEL BY FERMENTATION	61/226749 7/20/2009		Inactive Expired	Reg Life Sciences, LLC
109112-0316 LS00018	PRODUCTION OF COMMERCIAL BIODIESEL BY USING GENETICALLY MODIFIED MICROORGANISMS	61/227025 7/20/2009		Inactive Expired	Reg Life Sciences, LLC
109112-0317 LS00018	PRODUCTION OF COMMERCIAL BIODIESEL FROM GENETICALLY MODIFIED MICROORGANISMS	61/262544 11/19/2009		Inactive Expired	Reg Life Sciences, LLC
109112-0324 LS00019	PRODUCTION OF FATTY ACID ESTERS	61/173016 4/27/2009		Inactive Expired	Reg Life Sciences, LLC
109112-0325 LS00019	PRODUCTION OF FATTY ACID ESTERS	61/182564 5/29/2009		Inactive Expired	Reg Life Sciences, LLC
109112-0349 LS00021	SYSTEMS AND METHODS FOR PRODUCTION OF MIXED FATTY ESTERS	12/542618 8/17/2009		Inactive Abandoned	LS9
109112-0350 LS00021	SYSTEMS AND METHODS FOR PRODUCTION OF MIXED FATTY ESTERS	12/543419 8/18/2009		Inactive Abandoned	LS9, Inc.
109112-0352 LS00022	PRODUCTION OF FATTY ACID DERIVATIVES	61/245943 9/25/2009		Inactive Expired	Reg Life Sciences, LLC
109112-0353 LS00022	PRODUCTION OF FATTY ACID DERIVATIVES	12/889163 9/23/2010		Inactive Abandoned	LS9, Inc.
109112-0355 LS00023	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	61/261755 11/17/2009		Inactive Expired	Reg Life Sciences, LLC
109112-0356 LS00023	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	12/948349 11/17/2009		Inactive Abandoned	LS9, Inc.
109112-0361 LS00024	METHODS AND COMPOSITIONS FOR PRODUCING BRANCHED FATTY ALCOHOLS	61/294846 1/14/2010		Inactive Expired	Reg Life Sciences, LLC
109112-0362 LS00024	METHODS AND COMPOSITIONS FOR PRODUCING BRANCHED FATTY ALCOHOLS	61/302561 2/9/2010		Inactive Expired	Reg Life Sciences, LLC
109112-0363 LS00024	METHODS AND COMPOSITIONS FOR PRODUCING BRANCHED FATTY ALCOHOLS	13/006933 1/14/2011		Inactive Abandoned	LS9, Inc.
109112-0366 LS00025	METHODS AND COMPOSITIONS FOR PRODUCING BRANCHED FATTY ACIDS, DERIVATIVES AND HYDROCARBONS	61/294847 1/14/2010		Inactive Expired	Reg Life Sciences, LLC

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109112-0367 LS00025	METHODS AND COMPOSITIONS FOR PRODUCING BRANCHED FATTY ACIDS, DERIVATIVES AND HYDROCARBONS	61/302562 2/9/2010		Inactive Expired	Reg Life Sciences, LLC
109112-0368 LS00025	METHODS AND COMPOSITIONS FOR PRODUCING BRANCHED FATTY ACIDS, DERIVATIVES AND HYDROCARBONS	13/007100 1/14/2011		Inactive Abandoned	LS9, Inc.
109112-0370 LS00026	SURFACTANT AND DETERGENT COMPOSITIONS COMPRISING MICROBIALLY PRODUCED BRANCHED FATTY ALCOHOLS	61/304448 2/14/2010		Inactive Expired	Reg Life Sciences, LLC
109112-0371 LS00026	SURFACTANTS AND CLEANING COMPOSITIONS COMPRISING MICROBIALLY PRODUCED BRANCHED FATTY ALCOHOLS	61/324310 4/15/2010		Inactive Expired	Reg Life Sciences, LLC
109112-0372 LS00026	METHODS OF MAKING SURFACTANT AND CLEANING COMPOSITIONS THROUGH MICROBIALLY PRODUCED BRANCHED FATTY ALCOHOLS	14/508927 10/7/2014		Inactive Abandoned	Reg Life Sciences, LLC
109112-0374 LS00027	METHODS AND COMPOSITIONS FOR PRODUCING HYDROCARBONS	61/383086 9/15/2010		Inactive Expired	Reg Life Sciences, LLC
109112-0377 LS00028	METHODS AND COMPOSITIONS RELATED TO FATTY ALCOHOL BIOSYNTHETIC ENZYMES	61/321877 4/8/2010		Inactive Expired	Reg Life Sciences, LLC
109112-0378 LS00028	METHODS AND COMPOSITIONS RELATED TO FATTY ALCOHOL BIOSYNTHETIC ENZYMES	13/083066 4/8/2011		Inactive Abandoned	LS9, Inc.
109112-0379 LS00029	METHODS AND COMPOSITIONS RELATED TO FATTY ALCOHOL BIOSYNTHETIC ENZYMES	61/321878 4/8/2010		Inactive Expired	Reg Life Sciences, LLC
109112-0386 LS00030	METHODS AND COMPOSITIONS RELATED TO FATTY ALCOHOL BIOSYNTHETIC ENZYMES	12/758001 4/11/2010		Inactive Abandoned	LS9, Inc.
109112-0389 LS00044	ESTER SYNTHASE WITH IMPROVED PROPERTIES	61/708424 10/1/2012		Inactive Expired	Reg Life Sciences, LLC
109112-0403 LS00045	EFFECT OF ACYL ACP ON ALCOHOL AND ESTER PRODUCTION	61/736428 12/12/2012		Inactive Expired	Inventors(s)
109112-0404 LS00045	ACP-MEDIATED PRODUCTION OF FATTY ACID DERIVATIVES	14/760204 12/11/2013		Inactive Abandoned	Reg Life Sciences, LLC
109112-0424 LS00032	METHODS AND COMPOSITIONS FOR ENHANCED PRODUCTION OF FATTY ALDEHYDES AND FATTY ALCOHOLS	61/436542 1/26/2011		Inactive Expired	Reg Life Sciences, LLC
109112-0425 LS00032	METHODS AND COMPOSITIONS FOR ENHANCED PRODUCTION OF FATTY ALDEHYDES AND FATTY ALCOHOLS	13/359127 1/26/2012		Inactive Abandoned	LS9, Inc.
109112-0441 LS00034	METHODS AND COMPOSITIONS FOR IMPROVED PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	61/470989 4/1/2011		Inactive Expired	Reg Life Sciences, LLC

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109112-0452 LS00035	COMPOSITIONS COMPRISING AND METHODS FOR PRODUCING BETA-HYDROXY FATTY ACID ESTERS	14/007829 3/30/2012		Inactive Abandoned	Reg Life Sciences, LLC
109112-0453 LS00035	COMPOSITIONS COMPRISING AND METHODS FOR PRODUCING BETA-HYDROXY FATTY ACID ESTERS	61/469425 3/30/2011		Inactive Expired	Reg Life Sciences, LLC
109112-0463 LS00036	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF HAVING IMPROVED ALIPHATIC CHAIN LENGTH AND SATURATION CHARACTERISTICS	61/514861 8/3/2011		Inactive Expired	Reg Life Sciences, LLC
109112-0465 LS00037	IMPROVED PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF	61/448570 3/2/2011		Inactive Expired	LS9
109112-0466 LS00038	METATHESIS TRANSFORMATIONS OF MICROBIALLY-PRODUCED FATTY ACIDS AND FATTY ACID DERIVATIVES	61/474661 4/12/2011		Inactive Expired	Reg Life Sciences, LLC
109112-0481 LS00039	IMPROVED PRODUCTION OF FATTY ALCOHOLS	61/619309 4/2/2012		Inactive Expired	Reg Life Sciences, LLC
109112-0495 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	61/701328 9/14/2012		Inactive Expired	LS9
109112-0496 LS00040	DOWNSTREAM PROCESSING OF FATTY ALCOHOL COMPOSITIONS PRODUCED BY RECOMBINANT HOST CELLS	61/774375 3/7/2013		Inactive Expired	Unknown
109112-0511 LS00041	MICROBIAL PRODUCTION OF ALKANOLAMIDES AND AMIDOAMINES AND USES THEREOF	61/623711 4/13/2012		Inactive Expired	Reg Life Sciences, LLC
109112-0526 LS00042	IMPROVED PRODUCTION OF FATTY ACID DERIVATIVES	61/619324 4/2/2012		Inactive Expired	Reg Life Sciences, LLC
109112-0527 LS00042	PRODUCTION OF FATTY ACID DERIVATIVES	14/390378 10/2/2014		Inactive Abandoned	Reg Life Sciences, LLC
109112-0528 LS00043	MODIFIED THIOESTERASE FROM PHOTOBACTERIUM PROFUNDUM	61/701191 9/14/2012		Inactive Expired	Reg Life Sciences, LLC
109112-0554 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	61/753273 1/16/2013		Inactive Expired	Reg Life Sciences, LLC
109112-0558 LS00048	METHODS OF PRODUCING OMEGA-HYDROXYLATED FATTY ACID DERIVATIVES	61/835464 6/14/2013		Inactive Expired	Inventors(s)
109112-0561 LS00049	PRODUCTION OF PARTIALLY REFINED WASTE GLYCEROL	61/867473 8/19/2013		Inactive Expired	Reg Life Sciences, LLC
109112-0564 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	61/877418 9/13/2013		Inactive Expired	Reg Life Sciences, LLC
109112-0565 LS00050	IMPROVED ACETYL-COA CARBOXYLASE VARIANTS	61/892242 10/17/2013		Inactive Expired	Reg Life Sciences, LLC
109112-0568 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	61/911184 12/3/2013		Inactive Expired	Unknown
109112-0569 LS00051	MICROBIAL PRODUCTION OF FATTY AMINES	61/912184 12/5/2013		Inactive Expired	Reg Life Sciences, LLC

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109112-0571 LS00052	MICROBIAL PRODUCTION OF FATTY DIOLS	62/026573 7/18/2014		Inactive Expired	Reg Life Sciences, LLC
109112-0574 LS00053	FRAGRANCES VIA MICROBIAL PRODUCTION	61/978176 4/10/2014		Inactive Expired	Reg Life Sciences, LLC
109112-0577 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDES WITH IMPROVED PROPERTIES	62/012970 6/16/2014		Inactive Expired	Reg Life Sciences, LLC
109112-0579 LS00008	HYDROCARBON-PRODUCING GENES AND METHODS OF THEIR USE	14/952720 11/25/2015		Inactive Abandoned	Reg Life Sciences, LLC
109112-0582 LS00032	METHODS AND COMPOSITIONS FOR ENHANCED PRODUCTION OF FATTY ALDEHYDES AND FATTY ALCOHOLS	14/179944 2/13/2014		Inactive Abandoned	Reg Life Sciences, LLC
109112-0602 LS00036	PRODUCTION OF FATTY ACIDS AND DERIVATIVES THEREOF HAVING IMPROVED ALIPHATIC CHAIN LENGTH AND SATURATION CHARACTERISTICS	14/236883 8/17/2012		Inactive Abandoned	Reg Life Sciences, LLC
109112-0633 LS00035	BETA-HYDROXY FATTY ACID ESTER COMPOSITIONS AND METHODS OF PRODUCING THEM	15/137912 4/25/2016		Inactive Abandoned	Reg Life Sciences, LLC
109112-0642 LS00032	METHODS AND COMPOSITIONS FOR ENHANCED PRODUCTION OF FATTY ALDEHYDES AND FATTY ALCOHOLS	15/155856 5/16/2016		Inactive Abandoned	Reg Life Sciences, LLC
109112-0686 LS00058	1,3-FATTY DIOL COMPOUNDS AND DERIVATIVES THEREOF	62/394537 9/14/2016		Inactive Expired	Inventors(s)
109112-0723 LS00020	METHODS AND COMPOSITIONS FOR PRODUCING FATTY ALCOHOLS OR FATTY ALDEHYDES	15/592772 5/11/2017		Inactive Abandoned	Reg Life Sciences, LLC
109112-0730 LS00014	SYSTEMS AND METHODS FOR PRODUCTION OF MIXED FATTY ESTERS	15/498633 4/27/2017		Inactive Abandoned	Reg Life Sciences, LLC
109112-0754 LS00057	THIOESTERASE VARIANTS HAVING IMPROVED ACTIVITY FOR THE PRODUCTION OF MEDIUM-CHAIN FATTY ACID DERIVATIVES	62/481078 4/3/2017		Inactive Expired	Inventors(s)
109112-0765 LS00046	ACYL-ACP REDUCTASE WITH IMPROVED PROPERTIES	15/876336 1/22/2018		Inactive Abandoned	Reg Life Sciences, LLC
109112-0798 LS00054	OMEGA-HYDROXYLASE-RELATED FUSION POLYPEPTIDE VARIANTS WITH IMPROVED PROPERTIES	16/063198 12/13/2016		Inactive Abandoned	Reg Life Sciences, LLC
109112-0834 LS00011	METHODS AND COMPOSITIONS FOR PRODUCING OLEFINS	61/092378 8/27/2008		Inactive Expired	Reg Life Sciences, LLC
109112-0877 LS00060	MULTIFUNCTIONAL FATTY ACID DERIVATIVES AND BIOSYNTHESIS THEREOF	62/669912 5/10/2018		Inactive Expired	Inventors(s)

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**EXHIBIT B**  
**Assigned Trademarks**

None.

**EXHIBIT C**  
**Assigned Domain Names**

None.