

TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

Assignment ID: TMI26461

SUBMISSION TYPE:	NEW ASSIGNMENT		
NATURE OF CONVEYANCE:	SECURITY INTEREST		
CONVEYING PARTY DATA			
Name	Formerly	Execution Date	Entity Type
CODEXIS, INC.		02/13/2024	Corporation: DELAWARE
RECEIVING PARTY DATA			
Company Name:	INNOVATUS LIFE SCIENCES LENDING FUND I, LP, AS COLLATERAL AGENT		
Street Address:	777 Third Avenue		
Internal Address:	25th Floor		
City:	New York		
State/Country:	NEW YORK		
Postal Code:	10017		
Entity Type:	Limited Partnership: DELAWARE		
PROPERTY NUMBERS Total: 25			
Property Type	Number	Word Mark	
Serial Number:	98198117	ECO SYNTHESIS	
Serial Number:	88954925	ATOMS	
Serial Number:	85271911	CODEEVOLVER	
Serial Number:	85230914	CODEEVOLVER	
Serial Number:	88957280	MOSAIC	
Serial Number:	88957577	RIPTIDE	
Serial Number:	88957585	STRATEGIST	
Serial Number:	87599778	UNLOCK THE POWER OF PROTEINS	
Serial Number:	76679500		
Serial Number:	88952685	APS	
Serial Number:	88957277	HARVESTER	
Serial Number:	86398607	SAGE	
Serial Number:	88952693	ANALOGENE	
Serial Number:	98198083	ECORNA	
Serial Number:	85945921	MOSAIC	
Serial Number:	86069388	MICROCYP	
Serial Number:	77371744	CODEX	
Serial Number:	87706489	CODEXIS	

OP \$640.00.00 98198117

Property Type	Number	Word Mark
Serial Number:	87706494	CODEXIS PROTEIN ENGINEERING EXPERTS
Serial Number:	87309996	PROSAR
Serial Number:	86398596	MCYP
Serial Number:	88952692	AMELI
Serial Number:	88954930	CONTINUITY
Serial Number:	88954933	FORAGER
Serial Number:	76362246	CODEXIS

CORRESPONDENCE DATA

Fax Number:

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: 8004945225

Email: ipteam@cogencyglobal.com

Correspondent Name: Stewart Walsh

Address Line 1: 1025 Connecticut Ave NW, Suite 712

Address Line 2: Cogency Global Inc.

Address Line 4: Washington, DISTRICT OF COLUMBIA 20036

ATTORNEY DOCKET NUMBER:	2268071 TM
NAME OF SUBMITTER:	Andrew Hackett
SIGNATURE:	Andrew Hackett
DATE SIGNED:	02/15/2024

Total Attachments: 44

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INTELLECTUAL PROPERTY SECURITY AGREEMENT

This Intellectual Property Security Agreement (as amended, restated, supplemented or otherwise modified from time to time, this "Agreement") is entered into as of February 13, 2024 (the "Effective Date") by and between INNOVATUS LIFE SCIENCES LENDING FUND I, LP, as collateral agent for the Lenders (the "Lenders") described in the Loan Agreement (in such capacity, the "Collateral Agent") and Codexis, Inc., a Delaware corporation ("Grantor").

RECITALS

A. Lenders have agreed to make certain advances of money and to extend certain financial accommodation to Grantor (the "Loans") in the amounts and manner set forth in that certain Loan and Security Agreement by and between Collateral Agent, the Lenders and Grantor dated the Effective Date (as the same may be amended, modified or supplemented from time to time, the "Loan Agreement"; capitalized terms used herein are used as defined in the Loan Agreement). The Lenders are willing to make the Loans to Grantor, but only upon the condition, among others, that Grantor shall grant to Collateral Agent, for the benefit of the Lenders, a security interest in certain Copyrights, Trademarks, Patents, and mask works to secure the obligations of Grantor under the Loan Agreement.

B. Pursuant to the terms of the Loan Agreement, Grantor has granted to Collateral Agent, for the benefit of the Lenders, a security interest in all of Grantor's right, title and interest, whether presently existing or hereafter acquired, in, to and under all of the Collateral.

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, and intending to be legally bound, as collateral security for the prompt and complete payment when due of its obligations under the Loan Agreement, Grantor hereby represents, warrants, covenants and agrees as follows:

AGREEMENT

To secure its obligations under the Loan Agreement, Grantor grants and pledges to Collateral Agent, for the benefit of the Lenders, a security interest in all of Grantor's right, title and interest in, to and under its Intellectual Property (including without limitation those Copyrights, Patents and Trademarks listed on Exhibits A, B and C hereto), and including without limitation all proceeds thereof (such as, by way of example but not by way of limitation, license royalties and proceeds of infringement suits), the right to sue for past, present and future infringements, all rights corresponding thereto throughout the world and all re-issues, divisions continuations, renewals, extensions and continuations-in-part thereof.

Grantor hereby authorizes Collateral Agent, for the benefit of the Lenders, to (a) modify this Agreement unilaterally by amending the exhibits to this Agreement to include any Intellectual Property which Grantor obtains subsequent to the date of this Agreement, and (b) file a duplicate of this Agreement containing amended exhibits reflecting such new Intellectual Property with the United States Patent and Trademark Office or the United States Copyright Office, as applicable.

This security interest is granted in conjunction with the security interest granted to Collateral Agent, for the benefit of the Lenders, under the Loan Agreement. The rights and remedies of Collateral Agent with respect to the security interest granted hereby are in addition to those set forth in the Loan Agreement and the other Loan Documents, and those which are now or hereafter available to Collateral Agent, for the benefit of the Lenders, as a matter of law or equity. Each right, power and remedy of Collateral Agent provided for herein or in the Loan Agreement or any of the Loan Documents, or now or hereafter existing at law or in equity shall be cumulative and concurrent and shall be in addition to every right, power or remedy provided for herein and the exercise by Collateral Agent of any one or more of the rights, powers or remedies provided for in this Agreement, the Loan Agreement or any of the other Loan Documents, or now or hereafter existing at law or in equity, shall not preclude the simultaneous or later exercise by any person, including Lender, of any or all other rights, powers or remedies.

This Agreement is a Loan Document. This Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, is an original, and all taken together, constitute one Agreement. Delivery of an executed counterpart of a signature page of this Agreement by electronic means shall be effective as delivery of an original executed counterpart of this Agreement. The words "execution," "signed," "signature" and words of like import in this Agreement shall be deemed to include electronic signatures or the keeping of records in electronic form, each of which shall be of the same legal effect, validity and enforceability as a manually executed signature or the use of a paper-based recordkeeping systems, as the case may be, to the extent and as provided for in any applicable law, including, without limitation, any state law based on the Uniform Electronic Transactions Act.

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IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed by its officers thereunto duly authorized as of the first date written above.

GRANTOR:

Address of Grantor:

CODEXIS, INC.

200 Penobscot Drive
Redwood City, CA 94063
Attn: Chief Financial Officer

By: 
Name: Sri Ryali
Title: Chief Financial Officer

COLLATERAL AGENT:

Address of Lender:

INNOVATUS LIFE SCIENCES LENDING FUND
I, LP

777 Third Avenue, 25th Floor
New York, NY 10017

By: _____

Title: Authorized Signer

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed by its officers thereunto duly authorized as of the first date written above.

GRANTOR:

Address of Grantor:

CODEXIS, INC.

Attn: _____

By: _____
Name:
Title:

COLLATERAL AGENT:

Address of Lender:

INNOVATUS LIFE SCIENCES LENDING FUND
I, LP

777 Third Avenue, 25th Floor
New York, NY 10017


By:  _____
Name: Andrew Dym
Title: Authorized Signatory

EXHIBIT A

Copyrights

None.

EXHIBIT B

Patents

[Attached]

Patent Number	Country	Application Number	Filing Date	Publication Number	Publication Date	Issue Date	Expiration Date (Est.)	Status	Title	In-Licensed From
7620500	United States of America*	10/386903	10-Mar-2003	0198988	23-Oct-2003	17-Nov-2009	25-Jun-2025	Granted	OPTIMIZATION OF CROSSOVER POINTS FOR DIRECTED EVOLUTION	
8849575	United States of America*	11/429628	05-May-2006	0205003	14-Sep-2006	30-Sep-2014	22-Jul-2025	Granted	METHODS, SYSTEMS AND SOFTWARE FOR IDENTIFYING FUNCTIONAL BIOMOLECULES	
9996661	United States of America*	12/979637	28-Dec-2010	20110161265	30-Jun-2011	12-Jun-2018	17-Jan-2027	Granted	METHODS, SYSTEMS AND SOFTWARE FOR IDENTIFYING FUNCTIONAL BIOMOLECULES	
8762066	United States of America*	11/981578	30-Oct-2007	0132416	05-Jun-2008	24-Jun-2014	28-Jun-2027	Granted	METHODS, SYSTEMS AND SOFTWARE FOR IDENTIFYING FUNCTIONAL BIOMOLECULES	
9864833	United States of America*	14/256692	18-Apr-2014	20140249035	04-Sep-2014	09-Jan-2018	27-Oct-2024	Granted	METHODS, SYSTEMS AND SOFTWARE FOR IDENTIFYING FUNCTIONAL BIOMOLECULES	
10453554	United States of America*	14/536242	07-Nov-2014	20150065357	05-Mar-2015	22-Oct-2019	03-May-2025	Granted	METHODS, SYSTEMS AND SOFTWARE FOR IDENTIFYING FUNCTIONAL BIOMOLECULES	
7550277	United States of America	11/391755	28-Mar-2006	20080182972	31-Jul-2008	23-Jun-2009	28-Mar-2026	Granted	D-AMINO ACID DEHYDROGENASE AND METHOD OF MAKING D-AMINO ACIDS	
8383346	United States of America	12/562988	18-Sep-2009	20100093560	15-Apr-2010	26-Feb-2013		Granted	COMBINED AUTOMATED PARALLEL SYNTHESIS OF POLYNUCLEOTIDE VARIANTS	
8504498	United States of America	12/867429	12-Aug-2010	20110029468	03-Feb-2011	06-Aug-2013	27-Jan-2030	Granted	METHOD OF SELECTING AN OPTIMIZED, DIVERSE POPULATION OF VARIANTS	
8768871	United States of America	12/867433	21-Oct-2010	2011-0034342	10-Feb-2011	01-Jul-2014	11-May-2031	Granted	METHOD OF GENERATING AN OPTIMIZED, DIVERSE POPULATION OF VARIANTS	
10155943	United States of America	14/281421	19-May-2014	20140256557	11-Sep-2014	18-Dec-2018	25-Mar-2032	Granted	METHOD OF GENERATING AN OPTIMIZED, DIVERSE POPULATION OF VARIANTS	
9593326	United States of America	13/577651	07-Aug-2012	20140005057	02-Jan-2014	14-Mar-2017	26-Mar-2033	Granted	PROTEIN VARIANT GENERATION BY REGION SHUFFLING	
9665694	United States of America	14/167709	29-Jan-2014	20140214391	31-Jul-2014	30-May-2017	23-Mar-2034	Granted	METHODS, SYSTEMS, AND SOFTWARE FOR IDENTIFYING BIOMOLECULES WITH INTERACTING COMPONENTS	
11342046	United States of America	16/434138	06-Jun-2019	20200020415	16-Jan-2020	24-May-2022	02-Oct-2034	Granted	METHODS AND SYSTEMS FOR ENGINEERING BIOMOLECULES	

10696964	United States of America	17/7/19321	12-Apr-2022	20220238179	28-Jul-2022					Published	METHODS AND SYSTEMS FOR ENGINEERING BIOMOLECULES
11535845	United States of America	14/4/98864	26-Sep-2014	20150133307	14-May-2015	30-Jun-2020	25-Mar-2035	Granted	Automated screening of enzyme variants	Granted	AUTOMATED SCREENING OF ENZYME VARIANTS
9684771	United States of America	16/875,848	15-May-2020	20200277597	03-Sep-2020	27-Dec-2022	01-Dec-2035	Granted	Automated screening of enzyme variants	Granted	AUTOMATED SCREENING OF ENZYME VARIANTS
8470564	United States of America	17/979,711	02-Nov-2022	20230048421	16-Feb-2023			Published	Automated screening of enzyme variants	Published	AUTOMATED SCREENING OF ENZYME VARIANTS
9029106	United States of America	14/167713	29-Jan-2014	20140221216	07-Aug-2014	20-Jun-2017	01-May-2034	Granted	Methods, systems, and software for identifying biomolecules using models of multiplicative form	Granted	METHODS, SYSTEMS, AND SOFTWARE FOR IDENTIFYING BIOMOLECULES USING MODELS OF MULTIPLICATIVE FORM
9512410	United States of America	12/684864	08-Jan-2010	20100209981	19-Aug-2010	25-Jun-2013	10-Feb-2031	Granted	Transaminase polypeptides	Granted	TRANSAMINASE POLYPEPTIDES
9944909	United States of America	13/920902	18-Jun-2013	20130266994	10-Oct-2013	12-May-2015	08-Jan-2030	Granted	Transaminase polypeptides	Granted	TRANSAMINASE POLYPEPTIDES
10323233	United States of America	14/684916	13-Apr-2015	20150210988	30-Jul-2015	06-Dec-2016	08-Jan-2030	Granted	Transaminase polypeptides	Granted	TRANSAMINASE POLYPEPTIDES
10323234	United States of America	15/341631	02-Nov-2016	20170073651	16-Mar-2017	17-Apr-2018	08-Jan-2030	Granted	Poly nucleotides encoding transaminase polypeptides	Granted	POLYNUCLEOTIDES ENCODING TRANSAMINASE POLYPEPTIDES
10550370	United States of America	15/92892	06-Mar-2018	20180201911	19-Jul-2018	18-Jun-2019	08-Jan-2030	Granted	Transaminase polypeptides	Granted	TRANSAMINASE POLYPEPTIDES
10995323	United States of America	16/018247	26-Jun-2018	20180298355	18-Oct-2018	18-Jun-2019	08-Jan-2030	Granted	Transaminase polypeptides	Granted	TRANSAMINASE POLYPEPTIDES
11542485	United States of America	16/399488	30-Apr-2019	20190249152	15-Aug-2019	04-Feb-2020	08-Jan-2030	Granted	Transaminase polypeptides	Granted	TRANSAMINASE POLYPEPTIDES
8293507	United States of America	16/717596	17-Dec-2019	20200109380	09-Apr-2020	04-May-2021	08-Jan-2030	Granted	Transaminase polypeptides	Granted	TRANSAMINASE POLYPEPTIDES
9353355	United States of America	16/717596	17-Dec-2019	20200109380	09-Apr-2020	04-May-2021	08-Jan-2030	Granted	Transaminase polypeptides	Granted	TRANSAMINASE POLYPEPTIDES
9550982	United States of America	17/224008	06-Apr-2021	20210230564	29-Jul-2021	03-Jan-2023	08-Jan-2030	Granted	Transaminase polypeptides	Granted	TRANSAMINASE POLYPEPTIDES
10160985	United States of America	18/060,517	30-Nov-2022	20230120624	20-Apr-2023			Allowed	Transaminase polypeptides	Allowed	TRANSAMINASE POLYPEPTIDES
	United States of America	18/409,699	10-Jan-2024					Pending	Transaminase polypeptides	Pending	TRANSAMINASE POLYPEPTIDES
	United States of America	12/7/14397	26-Feb-2010	20100285541	11-Nov-2010	23-Oct-2012	01-Sep-2030	Granted	Transaminase biocatalysts	Granted	TRANSAMINASE BIOCATALYSTS
	United States of America	14/8/18885	05-Aug-2015	20150329838	19-Nov-2015	31-May-2016	26-Feb-2030	Granted	Transaminase biocatalysts	Granted	TRANSAMINASE BIOCATALYSTS
	United States of America	15/140809	28-Apr-2016	20160264948	15-Sep-2016	24-Jan-2017	26-Feb-2030	Granted	Transaminase biocatalysts	Granted	TRANSAMINASE BIOCATALYSTS
	United States of America	15/9/15437	08-Mar-2018	20180201963	19-Jul-2018	25-Dec-2018	26-Feb-2030	Granted	Transaminase biocatalysts	Granted	TRANSAMINASE BIOCATALYSTS

10619176	United States of America	16/195227	19-Nov-2018	20190071702	07-Mar-2019	14-Apr-2020	26-Feb-2030	Granted	TRANSAMINASE BIOCATALYSTS
11078505	United States of America	16/807977	03-Mar-2020	20200199696	25-Jun-2020	03-Aug-2021	26-Feb-2030	Granted	TRANSAMINASE BIOCATALYSTS
8889380	United States of America	13/604323	05-Sep-2012	20120329108	27-Dec-2012	18-Nov-2014	11-Jul-2030	Granted	TRANSAMINASE BIOCATALYSTS
9133445	United States of America	14/518143	20-Oct-2014	20150037869	05-Feb-2015	15-Sep-2015	26-Feb-2030	Granted	TRANSAMINASE BIOCATALYSTS
9944963	United States of America	15/376837	13-Dec-2016	20170088868	30-Mar-2017	17-Apr-2018	26-Feb-2030	Granted	TRANSAMINASE BIOCATALYSTS
8796002	United States of America	13/378618	10-Apr-2012	20120190086	26-Jul-2012	05-Aug-2014	21-Feb-2031	Granted	KETOREDUCTASE-MEDIATED STEREOSELECTIVE ROUTE TO ALPHA CHLOROALCOHOLS
9029112	United States of America	14/313465	24-Jun-2014	20140308732	16-Oct-2014	12-May-2015	22-Jun-2030	Granted	KETOREDUCTASE-MEDIATED STEREOSELECTIVE ROUTE TO ALPHA CHLOROALCOHOLS
9296992	United States of America	14/697262	27-Apr-2015	20150240217	27-Aug-2015	29-Mar-2016	22-Jun-2030	Granted	KETOREDUCTASE-MEDIATED STEREOSELECTIVE ROUTE TO ALPHA CHLOROALCOHOLS
9404092	United States of America	15/046011	17-Feb-2016	20160160187	09-Jun-2016	02-Aug-2016	22-Jun-2030	Granted	KETOREDUCTASE-MEDIATED STEREOSELECTIVE ROUTE TO ALPHA CHLOROALCOHOLS
9102959	United States of America	13/390677	15-Feb-2012	20120149073	14-Jun-2012	11-Aug-2015	10-Jul-2031	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PREPARATION OF PHENYLEPHRINE
9834758	United States of America	14/755056	30-Jun-2015	20150299671	22-Oct-2015	05-Dec-2017	23-Oct-2030	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PREPARATION OF PHENYLEPHRINE
10358631	United States of America	15/812628	14-Nov-2017	20180066239	08-Mar-2018	23-Jul-2019	19-Aug-2030	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PREPARATION OF PHENYLEPHRINE
10590396	United States of America	16/437354	11-Jun-2019	20190309267	10-Oct-2019	17-Mar-2020	19-Aug-2030	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PREPARATION OF PHENYLEPHRINE
10870835	United States of America	16/778368	31-Jan-2020	20200157511	21-May-2020	22-Dec-2020	19-Aug-2030	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PREPARATION OF PHENYLEPHRINE
11345898	United States of America	17/085783	30-Oct-2020	20210062162	04-Mar-2021	31-May-2022	19-Aug-2030	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PREPARATION OF PHENYLEPHRINE
	United States of America	17/731635	28-Apr-2022	20220267744	25-Aug-2022		19-Aug-2030	Published	KETOREDUCTASE POLYPEPTIDES FOR THE PREPARATION OF PHENYLEPHRINE

8921079	United States of America 13/378963	09-Apr-2012	20120190085	26-Jul-2012	30-Dec-2014	04-Sep-2030	Granted	TRANSAMINASE REACTIONS
9434968	United States of America 14/547339	19-Nov-2014	20150079640	19-Mar-2015	06-Sep-2016	17-Aug-2030	Granted	TRANSAMINASE REACTIONS
10138503	United States of America 15/226397	02-Aug-2016	20160333381	17-Nov-2016	27-Nov-2018	29-Jul-2030	Granted	TRANSAMINASE REACTIONS
10767202	United States of America 16/164365	18-Oct-2018	20190040431	07-Feb-2019	08-Sep-2020	21-Jun-2030	Granted	TRANSAMINASE REACTIONS
11371067	United States of America 16/985080	04-Aug-2020	20200362377	19-Nov-2020	28-Jun-2022	21-Jun-2030	Granted	TRANSAMINASE REACTIONS
8178333	United States of America 17/751200	23-May-2022	20220290197	15-Sep-2022			Published	TRANSAMINASE REACTIONS
8674876	United States of America 13/436506	30-Mar-2012	20120244581	27-Sep-2012	05-Nov-2013	23-Jun-2029	Granted	BIOCATALYTIC PROCESSES FOR THE PREPARATION OF SUBSTANTIALLY STEREOMERICALLY PURE FUSED BICYCLIC PROLINE COMPOUNDS
8859784	United States of America 13/294930	11-Nov-2011	201201330087	24-May-2012	14-Oct-2014	23-Jun-2029	Granted	STEREOMERICALLY PURE FUSED BICYCLIC PROLINE COMPOUNDS USEFUL FOR PREPARING HEPATITIS C PROTEASE INHIBITORS
8383382	United States of America 12/890134	24-Sep-2010	20110111468	12-May-2011	26-Feb-2013	24-Dec-2030	Granted	VARIANT LOVD POLYPEPTIDES AND THEIR USES
8846362	United States of America 13/755113	31-Jan-2013	20130130351	23-May-2013	30-Sep-2014	24-Sep-2030	Granted	VARIANT LOVD POLYPEPTIDES AND THEIR USES
9181570	United States of America 14/465467	21-Aug-2014	20150037851	05-Feb-2015	10-Nov-2015	24-Sep-2030	Granted	VARIANT LOVD POLYPEPTIDES AND THEIR USES
9546388	United States of America 14/710893	13-May-2015	20150240276	27-Aug-2015	17-Jan-2017	24-Sep-2030	Granted	VARIANT LOVD POLYPEPTIDES AND THEIR USES
9932616	United States of America 15/372788	08-Dec-2016	20170081685	23-Mar-2017	03-Apr-2018	24-Sep-2030	Granted	VARIANT LOVD POLYPEPTIDES AND THEIR USES
10590445	United States of America 15/899907	20-Feb-2018	20180187225	05-Jul-2018	17-Mar-2020	12-Dec-2030	Granted	VARIANT LOVD POLYPEPTIDES AND THEIR USES

11046982	United States of America 16/784011	06-Feb-2020	20200157588	21-May-2020	29-Jun-2021	24-Sep-2030	Granted	VARIANT LOVD POLYPEPTIDES AND THEIR USES
	United States of America 17/330172	25-May-2021	20210277432	09-Sep-2021			Allowed	VARIANT LOVD POLYPEPTIDES AND THEIR USES
	United States of America 18/432,802	05-Feb-2024					Pending	VARIANT LOVD POLYPEPTIDES AND THEIR USES
8288131	United States of America 12/545761	21-Aug-2009	20100055751	04-Mar-2010	16-Oct-2012	21-Aug-2029	Granted	KETOREDUCTASE POLYPEPTIDES AND USES THEREOF
8455230	United States of America 13/610723	11-Sep-2012	20130005018	03-Jan-2013	04-Jun-2013	21-Aug-2029	Granted	POLYNUCLEOTIDES ENCODING ENGINEERED KETOREDUCTASE POLYPEPTIDES
8426178	United States of America 12/549154	27-Aug-2009	20100151534	17-Jun-2010	23-Apr-2013	17-May-2031	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF A 3-ARYL-3-HYDROXYPROPANAMINE FROM A 3-ARYL-3-KETOPROPANAMINE
8673607	United States of America 13/796985	12-Mar-2013	20130177962	11-Jul-2013	18-Mar-2014	27-Aug-2029	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF A 3-ARYL-3-HYDROXYPROPANAMINE FROM A 3-ARYL-3-KETOPROPANAMINE
8273554	United States of America 12/545034	20-Aug-2009	20100062499	11-Mar-2010	25-Sep-2012	01-Oct-2030	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE STEREOSSELECTIVE PRODUCTION OF (4S)-3-[(5S)-5(4-FLUOROPHENYL)-5-HYDROXYPENTANOLYL]-4PHENYL-1,3-OXAZOLIDIN-2-ONE
8415126	United States of America 13/590882	21-Aug-2012	20120322136	20-Dec-2012	09-Apr-2013	20-Aug-2029	Granted	POLYNUCLEOTIDES ENCODING RECOMBINANT KETOREDUCTASE POLYPEPTIDES
8956640	United States of America 13/764596	11-Feb-2013	20130210098	15-Aug-2013	17-Feb-2015	08-Oct-2029	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE STEREOSSELECTIVE PRODUCTION OF (4S)-3-[(5S)-5(4-FLUOROPHENYL)-5-HYDROXYPENTANOLYL]-4PHENYL-1,3-OXAZOLIDIN-2-ONE
9139820	United States of America 14/606127	27-Jan-2015	20150132806	14-May-2015	22-Sep-2015	20-Aug-2029	Granted	KETOREDUCTASE POLYPEPTIDES
9422530	United States of America 14/824766	12-Aug-2015	20150337272	26-Nov-2015	23-Aug-2016	20-Aug-2029	Granted	KETOREDUCTASE POLYPEPTIDES
9796964	United States of America 15/211505	15-Jul-2016	20160376565	28-Dec-2016	24-Oct-2017	20-Aug-2029	Granted	KETOREDUCTASE POLYPEPTIDES

10047348	United States of America	15/7/11070	21-Sep-2017	20180023059	25-Jan-2018	14-Aug-2018	20-Aug-2029	Granted	KETOREDUCTASE POLYPEPTIDES
10246687	United States of America	16/03/1177	10-Jul-2018	20180312817	01-Nov-2018	02-Apr-2019	20-Aug-2029	Granted	KETOREDUCTASE POLYPEPTIDES
10544401	United States of America	16/272507	11-Feb-2019	20190161740	30-May-2019	28-Jan-2020	20-Aug-2029	Granted	KETOREDUCTASE POLYPEPTIDES
10988739	United States of America	16/708109	09-Dec-2019	20200095561	26-Mar-2020	27-Apr-2021	20-Aug-2029	Granted	KETOREDUCTASE POLYPEPTIDES
8329438	United States of America	17/216414	29-Mar-2021	20210222135	22-Jul-2021		20-Aug-2029	Published	KETOREDUCTASE POLYPEPTIDES
8883475	United States of America	12/646907	23-Dec-2009	20100190218	29-Jul-2010	11-Dec-2012	20-Nov-2030	Granted	ENONE REDUCTASES
9121045	United States of America	14/504558	02-Oct-2014	20150031095	29-Jan-2015	01-Sep-2015	23-Dec-2029	Granted	ENONE REDUCTASES
9388438	United States of America	14/800306	15-Jul-2015	20150315613	05-Nov-2015	12-Jul-2016	23-Dec-2029	Granted	ENONE REDUCTASES
9617568	United States of America	15/176851	08-Jun-2016	20160273007	22-Sep-2016	11-Apr-2017	23-Dec-2029	Granted	ENONE REDUCTASES
10035988	United States of America	15/443148	27-Feb-2017	20170175087	22-Jun-2017	31-Jul-2018	23-Dec-2029	Granted	ENONE REDUCTASES
10494615	United States of America	16/021378	28-Jun-2018	20180312815	01-Nov-2018	03-Dec-2019	23-Dec-2029	Granted	ENONE REDUCTASES
10995321	United States of America	16/655488	17-Oct-2019	20200040311	06-Feb-2020	04-May-2021	23-Dec-2029	Granted	ENONE REDUCTASES
8187856	United States of America	12/642586	18-Dec-2009	20100173372	08-Jul-2010	29-May-2012	03-Oct-2030	Granted	RECOMBINANT HALOHYDRIN DEHALOGENASE POLYPEPTIDES
8580555	United States of America	13/452328	20-Apr-2012	20120220002	30-Aug-2012	12-Nov-2013	18-Dec-2028	Granted	RECOMBINANT HALOHYDRIN DEHALOGENASE POLYPEPTIDES
8247192	United States of America	12/615139	09-Nov-2009	20100143968	10-Jun-2010	21-Aug-2012	25-Feb-2031	Granted	PENICILLIN G ACYLASES
8569013	United States of America	13/542835	06-Jul-2012	20120270282	25-Oct-2012	29-Oct-2013	09-Nov-2029	Granted	PENICILLIN G ACYLASES
8614081	United States of America	13/381155	28-Dec-2011	20120142063	07-Jun-2012	24-Dec-2013	18-Aug-2030	Granted	NITRILASE BIOCATALYSTS

8288141	United States of America 12/549293	27-Aug-2009	20100173369	08-Jul-2010	16-Oct-2012	08-Apr-2030	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF 3-ARYL-3-HYDROXYPROPANAMINE FROM A 3-ARYL-3-KETOPROPANAMINE
8877475	United States of America 13/610166	11-Sep-2012	20130005017	03-Jan-2013	04-Nov-2014	05-Dec-2029	Granted	POLYNUCLEOTIDES ENCODING ENGINEERED KETOREDUCTASE POLYPEPTIDES
9228213	United States of America 14/503578	01-Oct-2014	201500031094	29-Jan-2015	05-Jan-2016	27-Aug-2029	Granted	POLYNUCLEOTIDES ENCODING ENGINEERED KETOREDUCTASE POLYPEPTIDES
9657320	United States of America 14/954564	30-Nov-2015	20160083759	24-Mar-2016	23-May-2017	27-Aug-2029	Granted	ENGINEERED KETOREDUCTASE POLYPEPTIDES
11512332	United States of America 16/932084	17-Jul-2020	20200340025	29-Oct-2020	29-Nov-2022	24-Sep-2029	Granted	ENGINEERED KETOREDUCTASE POLYPEPTIDES
10006069	United States of America 18/049,758	26-Oct-2022	20230104779	06-Apr-2023			Published	ENGINEERED KETOREDUCTASE POLYPEPTIDES
10752926	United States of America 15/489946	18-Apr-2017	20170226546	10-Aug-2017	26-Jun-2018	27-Aug-2029	Granted	ENGINEERED KETOREDUCTASE POLYPEPTIDES
9057085	United States of America 13/499364	11-Jun-2012	20120244582	27-Sep-2012	16-Jun-2015	26-Mar-2032	Granted	IMPROVED LOV-D ACYLTRANSFERASE MEDIATED ACYLATION
9399785	United States of America 14/709026	11-May-2015	20150259718	17-Sep-2015	26-Jul-2016	24-Sep-2030	Granted	IMPROVED LOV-D ACYLTRANSFERASE MEDIATED ACYLATION
9909156	United States of America 15/199095	30-Jun-2016	20160304921	20-Oct-2016	06-Mar-2018	24-Sep-2030	Granted	IMPROVED LOV-D ACYLTRANSFERASE MEDIATED ACYLATION
10428360	United States of America 15/887646	02-Feb-2018	20180179565	28-Jun-2018	01-Oct-2019	24-Sep-2030	Granted	IMPROVED LOV-D ACYLTRANSFERASE MEDIATED ACYLATION
10858680	United States of America 16/543817	19-Aug-2019	20190367956	05-Dec-2019	08-Dec-2020	24-Sep-2030	Granted	IMPROVED LOV-D ACYLTRANSFERASE MEDIATED ACYLATION
8895271	United States of America 17/089498	04-Nov-2020	20210071216	11-Mar-2021		24-Sep-2030	Published	LOV-D ACYLTRANSFERASE MEDIATED ACYLATION
9228216	United States of America 13/514750	08-Jun-2012	20130017580	17-Jan-2013	25-Nov-2014	24-Jul-2031	Granted	SYNTHESIS OF PRAZOLE COMPOUNDS
9422534	United States of America 14/528708	30-Oct-2014	20150056668	26-Feb-2015	05-Jan-2016	08-Dec-2030	Granted	SYNTHESIS OF PRAZOLE COMPOUNDS
9422534	United States of America 14/952119	25-Nov-2015	20160076008	17-Mar-2016	23-Aug-2016	08-Dec-2030	Granted	SYNTHESIS OF PRAZOLE COMPOUNDS

9631181	United States of America 15/211329	15-Jul-2016	20160319252	03-Nov-2016	25-Apr-2017	08-Dec-2030	Granted	SYNTHESIS OF PRAZOLE COMPOUNDS
9040262	United States of America 13/695856	02-Nov-2012	20130052699	28-Feb-2013	26-May-2015	26-Mar-2032	Granted	BIOCATALYSTS FOR EZETIMBE SYNTHESIS
9388391	United States of America 14/692964	22-Apr-2015	20150218527	06-Aug-2015	12-Jul-2016	04-May-2031	Granted	BIOCATALYSTS FOR EZETIMBE SYNTHESIS
9644189	United States of America 15/179503	10-Jun-2016	20160281068	29-Sep-2016	09-May-2017	04-May-2031	Granted	BIOCATALYSTS FOR EZETIMBE SYNTHESIS
10053673	United States of America 15/478466	04-Apr-2017	20170204378	20-Jul-2017	21-Aug-2018	04-May-2031	Granted	BIOCATALYSTS FOR EZETIMBE SYNTHESIS
10544400	United States of America 16/032319	11-Jul-2018	20180312818	01-Nov-2018	28-Jan-2020	04-May-2031	Granted	BIOCATALYSTS FOR EZETIMBE SYNTHESIS
10995320	United States of America 16/712431	12-Dec-2019	20200123506	23-Apr-2020	04-May-2021	04-May-2031	Granted	BIOCATALYSTS FOR EZETIMBE SYNTHESIS
9080192	United States of America 13/577772	16-Oct-2012	20130029385	31-Jan-2013	14-Jul-2015	19-Mar-2031	Granted	PROCESSES USING AMINO ACID DEHYDROGENASES AND KETOREDUCTASE-BASED COFACTOR REGENERATING SYSTEM
9394551	United States of America 14/742215	17-Jun-2015	20150284749	08-Oct-2015	19-Jul-2016	08-Feb-2031	Granted	PROCESSES USING AMINO ACID DEHYDROGENASES AND KETOREDUCTASE-BASED COFACTOR REGENERATING SYSTEM
9714439	United States of America 15/184242	16-Jun-2016	20160281119	29-Sep-2016	25-Jul-2017	08-Feb-2031	Granted	PROCESSES USING AMINO ACID DEHYDROGENASES AND KETOREDUCTASE-BASED COFACTOR REGENERATING SYSTEM
10196667	United States of America 15/627652	20-Jun-2017	20170292141	12-Oct-2017	05-Feb-2019	08-Feb-2031	Granted	PROCESSES USING AMINO ACID DEHYDROGENASES AND KETOREDUCTASE-BASED COFACTOR REGENERATING SYSTEM
10604781	United States of America 16/221223	14-Dec-2018	20190112630	18-Apr-2019	31-Mar-2020	08-Feb-2031	Granted	PROCESSES USING AMINO ACID DEHYDROGENASES AND KETOREDUCTASE-BASED COFACTOR REGENERATING SYSTEM
11193157	United States of America 16/798044	21-Feb-2020	20200181672	11-Jun-2020	07-Dec-2021	08-Feb-2031	Granted	PROCESSES USING AMINO ACID DEHYDROGENASES AND KETOREDUCTASE-BASED COFACTOR REGENERATING SYSTEM

9228223	United States of America 13/757554	01-Feb-2013	20130165341	27-Jun-2013	05-Jan-2016	16-Feb-2028	Granted	STRUCTURE-ACTIVITY RELATIONSHIPS
7820421	United States of America 12/028780	08-Feb-2008	20080318295	25-Dec-2008	26-Oct-2010	16-Dec-2028	Granted	KETOREDUCTASES AND USES THEREOF
8071347	United States of America 12/881734	14-Sep-2010	20110165670	07-Jul-2011	06-Dec-2011	08-Feb-2028	Granted	KETOREDUCTASES AND USES THEREOF
8415127	United States of America 13/290773	07-Nov-2011	20120178142	12-Jul-2012	09-Apr-2013	08-Feb-2028	Granted	KETOREDUCTASES AND USES THEREOF
8980605	United States of America 13/793158	11-Mar-2013	20130196408	01-Aug-2013	17-Mar-2015	07-Nov-2031	Granted	KETOREDUCTASES AND USES THEREOF
7943356	United States of America 11/629000	08-Dec-2006	20090162893	25-Jun-2009	17-May-2011	19-May-2027	Granted	ALCOHOL DEHYDROGENASE FOR THE STEREOSELECTIVE PRODUCTION OF HYDROXY COMPOUNDS
7977078	United States of America 12/197286	24-Aug-2008	20090093031	09-Apr-2009	12-Jul-2011	24-Aug-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE STEREOSELECTIVE PRODUCTION OF (R)-3- HYDROXYTHIOLANE
8227229	United States of America 13/110789	18-May-2011	20110217754	08-Sep-2011	24-Jul-2012	24-Aug-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF (r)-3- HYDROXYTHIOLANE
8962285	United States of America 13/525048	15-Jun-2012	20120276599	01-Nov-2012	24-Feb-2015	08-May-2029	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF (r)-3- HYDROXYTHIOLANE
9394552	United States of America 14/597996	15-Jan-2015	20150125910	07-May-2015	19-Jul-2016	24-Aug-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF (r)-3- HYDROXYTHIOLANE
9932615	United States of America 15/184018	16-Jun-2016	20160289717	06-Oct-2016	03-Apr-2018	24-Aug-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF (R)-3- HYDROXYTHIOLANE

10385371	United States of America	15/902301	22-Feb-2018	20180187223	05-Jul-2018	20-Aug-2019	24-Aug-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF (R)-3-HYDROXYTHIOLANE
10851397	United States of America	16/457396	28-Jun-2019	20190323044	24-Oct-2019	01-Dec-2020	24-Aug-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF (R)-3-HYDROXYTHIOLANE
11427841	United States of America	17/080676	26-Oct-2020	20210054426	25-Feb-2021	30-Aug-2022	04-Sep-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF (R)-3-HYDROXYTHIOLANE
8748143	United States of America	17/813950	21-Jul-2022	20230068040	02-Mar-2023			Allowed	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF (R)-3-HYDROXYTHIOLANE
8512973	United States of America	13/970284	13-Sep-2008	20090191605	30-Jul-2009	10-Jun-2014	27-Jun-2031	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE REDUCTION OF ACETOPHENONES
8852909	United States of America	12/210195	20-Nov-2012	20130078692	28-Mar-2013	20-Aug-2013	13-Sep-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE REDUCTION OF ACETOPHENONES
9528131	United States of America	13/970284	19-Aug-2013	20130344552	26-Dec-2013	07-Oct-2014	20-Nov-2032	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE REDUCTION OF ACETOPHENONES
9951318	United States of America	14/501416	30-Sep-2014	20150017695	15-Jan-2015	27-Dec-2016	09-Mar-2029	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE REDUCTION OF ACETOPHENONES
10100288	United States of America	15/840381	13-Dec-2017	20180112191	26-Apr-2018	24-Apr-2018	13-Sep-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE REDUCTION OF ACETOPHENONES
10227572	United States of America	15/915927	08-Mar-2018	20180201909	19-Jul-2018	16-Oct-2018	13-Sep-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE REDUCTION OF ACETOPHENONES
	United States of America	16/126761	10-Sep-2018	20180371428	27-Dec-2018	12-Mar-2019	13-Sep-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE REDUCTION OF ACETOPHENONES

10927351	United States of America 16/253972	22-Jan-2019	20190144837	16-May-2019	23-Feb-2021	08-Jan-2029	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE REDUCTION OF ACETOPHENONES
1479756	United States of America 17/149463	14-Jan-2021	20210139861	13-May-2021	25-Oct-2022	13-Sep-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE REDUCTION OF ACETOPHENONES
9873863	United States of America 17/932420	15-Sep-2022	20230257721	17-Aug-2023			Published	KETOREDUCTASE POLYPEPTIDES FOR THE REDUCTION OF ACETOPHENONES
8088610	United States of America 12/240986	29-Sep-2008	20090155863	18-Jun-2009	03-Jan-2012	21-Jan-2029	Granted	KETOREDUCTASE POLYPEPTIDES AND USES THEREOF
8617853	United States of America 13/329986	19-Dec-2011	20120184000	19-Jul-2012	31-Dec-2013	08-Jun-2029	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF (S,3)-METHYL-2-(3-(2-(7-CHLOROQUINOLIN-2-YL)VINYL)PHENYL)-3-HYDROXYPROPYLBENZOATE
9267159	United States of America 13/992138	06-Jun-2013	20130260426	03-Oct-2013	23-Feb-2016	30-Jun-2032	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF ARMODAFINIL
9365835	United States of America 14/997277	15-Jan-2016	20160130566	12-May-2016	14-Jun-2016	07-Dec-2031	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF ARMODAFINIL
9528095	United States of America 15/159578	19-May-2016	20160264945	15-Sep-2016	27-Dec-2016	07-Dec-2031	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF ARMODAFINIL
9765306	United States of America 15/352970	16-Nov-2016	20170067036	09-Mar-2017	19-Sep-2017	07-Dec-2031	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF ARMODAFINIL
	United States of America 17/833788	06-Jun-2022	20220372452	24-Nov-2022			Published	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF ARMODAFINIL

9938509	United States of America 15/698319	07-Sep-2017	20180037872	08-Feb-2018	10-Apr-2018	07-Dec-2031	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF ARMODAFINIL
10087426	United States of America 15/903264	23-Feb-2018	20180195053	12-Jul-2018	02-Oct-2018	07-Dec-2031	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF ARMODAFINIL
10400223	United States of America 16/113684	27-Aug-2018	20180371431	27-Dec-2018	03-Sep-2019	07-Dec-2031	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF ARMODAFINIL
10557126	United States of America 16/524468	29-Jul-2019	20190345460	14-Nov-2019	11-Feb-2020	07-Dec-2031	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF ARMODAFINIL
10781429	United States of America 16/716239	16-Dec-2019	20200109376	09-Apr-2020	22-Sep-2020	07-Dec-2031	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF ARMODAFINIL
10961517	United States of America 16/995444	17-Aug-2020	20210002618	07-Jan-2021	30-Mar-2021	07-Dec-2031	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF ARMODAFINIL
11384343	United States of America 17/184427	24-Feb-2021	20210198638	01-Jul-2021	12-Jul-2022	07-Dec-2031	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF ARMODAFINIL
8852900	United States of America 13/704507	14-Dec-2012	20130089898	11-Apr-2013	07-Oct-2014	16-Jun-2031	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF (S)-3-(1-AMINOETHYL)-PHENOL
8932838	United States of America 14/463332	19-Aug-2014	20140356944	04-Dec-2014	13-Jan-2015	16-Jun-2031	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF (S)-3-(1-AMINOETHYL)-PHENOL
8932836	United States of America 13/817295	12-Mar-2013	20130164794	27-Jun-2013	13-Jan-2015	08-Aug-2031	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF (1R,2R)-2-(3,4-DIMETHOXYPHENETHOXY)CYCLOHEXANAMINE
7883879	United States of America 12/243968	01-Oct-2008	20090162909	25-Jun-2009	08-Feb-2011	01-Oct-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE

8257952	United States of America	12/977825	23-Dec-2010	20110159567	30-Jun-2011	04-Sep-2012	01-Oct-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE
8470572	United States of America	13/569900	08-Aug-2012	20130034895	07-Feb-2013	25-Jun-2013	01-Oct-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE
8980606	United States of America	13/925096	24-Jun-2013	20140057330	27-Feb-2014	17-Mar-2015	14-Dec-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE
9133442	United States of America	14/658407	16-Mar-2015	20150197731	16-Jul-2015	15-Sep-2015	01-Oct-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE
9382519	United States of America	14/822624	10-Aug-2015	20150337271	26-Nov-2015	05-Jul-2016	01-Oct-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE
9476034	United States of America	15/175317	07-Jun-2016	20160281067	29-Sep-2016	25-Oct-2016	01-Oct-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE
9580694	United States of America	15/272664	22-Sep-2016	20170002333	05-Jan-2017	28-Feb-2017	01-Oct-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE
9719071	United States of America	15/408673	18-Jan-2017	20170121689	04-May-2017	01-Aug-2017	01-Oct-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE
10329540	United States of America	15/631359	23-Jun-2017	20170313992	02-Nov-2017	25-Jun-2019	18-Mar-2029	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE
10597641	United States of America	16/404988	07-May-2019	20190256825	22-Aug-2019	24-Mar-2020	01-Oct-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE
11078466	United States of America	16/790474	13-Feb-2020	20200172880	04-Jun-2020	03-Aug-2021	01-Oct-2028	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE

9102963	United States of America 17/357673	24-Jun-2021	20210324347	21-Oct-2021						Published	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE
9365878	United States of America 18/472,540	22-Sep-2023								Pending	KETOREDUCTASE POLYPEPTIDES FOR THE PRODUCTION OF AZETIDINONE
9605290	United States of America 14/110964	05-Dec-2013	20140199735	17-Jul-2014	11-Aug-2015	14-May-2032	Granted				BIOCATALYTIC PROCESS FOR PREPARING ESILICARBAZEPINE AND ANALOGS THEREOF
9663683	United States of America 14/790311	02-Jul-2015	20150329835	19-Nov-2015	14-Jun-2016	12-Apr-2032	Granted				BIOCATALYTIC PROCESS FOR PREPARING ESILICARBAZEPINE AND ANALOGS THEREOF
9790527	United States of America 15/150686	10-May-2016	20160244792	25-Aug-2016	28-Mar-2017	12-Apr-2032	Granted				BIOCATALYTIC PROCESS FOR PREPARING ESILICARBAZEPINE AND ANALOGS THEREOF
10370688	United States of America 15/433852	15-Feb-2017	20170159028	08-Jun-2017	08-May-2018	12-Apr-2032	Granted				BIOCATALYTIC PROCESS FOR PREPARING ESILICARBAZEPINE AND ANALOGS THEREOF
10731189	United States of America 14/399034	05-Nov-2014	20150118719	30-Apr-2015	17-Oct-2017	07-May-2033	Granted				BIOCATALYSTS AND METHODS FOR HYDROXYLATION OF CHEMICAL COMPOUNDS
10995349	United States of America 15/357668	21-Nov-2016	20170121744	04-May-2017	06-Aug-2019	07-May-2033	Granted				BIOCATALYSTS AND METHODS FOR HYDROXYLATION OF CHEMICAL COMPOUNDS
11549132	United States of America 16/446866	20-Jun-2019	20190323046	24-Oct-2019	04-Aug-2020	07-May-2033	Granted				ENGINEERED PROLINE HYDROXYLASE POLYNUCLEOTIDES AND METHODS
	United States of America 16/913761	26-Jun-2020	20200325510	15-Oct-2020	04-May-2021	07-May-2033	Granted				ENGINEERED PROLINE HYDROXYLASE POLYPEPTIDES AND METHODS
	United States of America 17/221613	02-Apr-2021	20210230654	29-Jul-2021	10-Jan-2023	07-May-2033	Granted				BIOCATALYSTS AND METHODS FOR HYDROXYLATION OF CHEMICAL COMPOUNDS

9109209	United States of America 18/059,949	29-Nov-2022	20230227875	20-Jul-2023	Published	BIOCATALYSTS AND METHODS FOR HYDROXYLATION OF CHEMICAL COMPOUNDS		
9624478	United States of America 14/342713	04-Mar-2014	20140342412	20-Nov-2014	18-Aug-2015	07-Sep-2032	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF SUBSTITUTED LACTAMS
10633640	United States of America 14/799180	14-Jul-2015	20150307857	29-Oct-2015	18-Apr-2017	07-Sep-2032	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF SUBSTITUTED LACTAMS
10858635	United States of America 15/449677	03-Mar-2017	20170191043	06-Jul-2017	28-Apr-2020	03-Nov-2032	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF SUBSTITUTED LACTAMS
11597918	United States of America 16/825641	20-Mar-2020	20200231945	23-Jul-2020	08-Dec-2020	07-Sep-2032	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF SUBSTITUTED LACTAMS
9139819	United States of America 17/087484	02-Nov-2020	20210054352	25-Feb-2021	07-Mar-2023	14-Dec-2032	Granted	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF SUBSTITUTED LACTAMS
9422531	United States of America 18/164,522	03-Feb-2023	US 2023-0313155 A1	05-Oct-2023			Published	BIOCATALYSTS AND METHODS FOR THE SYNTHESIS OF SUBSTITUTED LACTAMS
9803178	United States of America 14/357964	13-May-2014	20140322769	30-Oct-2014	22-Sep-2015	14-Nov-2032	Granted	BIOCATALYSTS FOR THE PREPARATION OF HYDROXY SUBSTITUTED CARBAMATES
10100287	United States of America 14/825688	13-Aug-2015	20150344850	03-Dec-2015	23-Aug-2016	14-Nov-2032	Granted	BIOCATALYSTS FOR THE PREPARATION OF HYDROXY SUBSTITUTED CARBAMATES
9803178	United States of America 15/211990	15-Jul-2016	20160319247	03-Nov-2016	31-Oct-2017	14-Nov-2032	Granted	BIOCATALYSTS FOR THE PREPARATION OF HYDROXY SUBSTITUTED CARBAMATES
10100287	United States of America 15/711119	21-Sep-2017	20180010100	11-Jan-2018	16-Oct-2018	14-Nov-2032	Granted	BIOCATALYSTS FOR THE PREPARATION OF HYDROXY SUBSTITUTED CARBAMATES

10253303	United States of America 16/126044	10-Sep-2018	20180371427	27-Dec-2018	09-Apr-2019	14-Nov-2032	Granted	BIOCATALYSTS FOR THE PREPARATION OF HYDROXY SUBSTITUTED CARBAMATES
10851351	United States of America 16/284235	25-Feb-2019	20190177702	13-Jun-2019	01-Dec-2020	14-Nov-2032	Granted	BIOCATALYSTS FOR THE PREPARATION OF HYDROXY SUBSTITUTED CARBAMATES
11713451	United States of America 17/084405	29-Oct-2020	20210071151	11-Mar-2021	01-Aug-2023	15-Jul-2033	Granted	BIOCATALYSTS FOR THE PREPARATION OF HYDROXY SUBSTITUTED CARBAMATES
9139821	United States of America 18/333,393	12-Jun-2023	20240018489	18-Jan-2024			Published	BIOCATALYSTS FOR THE PREPARATION OF HYDROXY SUBSTITUTED CARBAMATES
9388395	United States of America 14/828839	18-Sep-2014	20150072383	12-Mar-2015	22-Sep-2015	22-Mar-2033	Granted	BIOCATALYSTS AND METHODS FOR SYNTHESIZING DERIVATIVES OF TRYPTAMINE AND TRYPTAMINE ANALOGS
9708588	United States of America 15/180355	13-Jun-2016	20160289649	06-Oct-2016	18-Jul-2017	22-Mar-2033	Granted	BIOCATALYSTS AND METHODS FOR SYNTHESIZING DERIVATIVES OF TRYPTAMINE AND TRYPTAMINE ANALOGS
10544402	United States of America 15/623698	15-Jun-2017	20170283781	05-Oct-2017	28-Jan-2020	07-Apr-2033	Granted	BIOCATALYSTS AND METHODS FOR SYNTHESIZING DERIVATIVES OF TRYPTAMINE AND TRYPTAMINE ANALOGS
11098291	United States of America 16/707724	09-Dec-2019	20200123512	23-Apr-2020	24-Aug-2021	22-Mar-2033	Granted	BIOCATALYSTS AND METHODS FOR SYNTHESIZING DERIVATIVES OF TRYPTAMINE AND TRYPTAMINE ANALOGS
9193957	United States of America 13/890944	09-May-2013	20130302859	14-Nov-2013	24-Nov-2015	12-Sep-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS

9296993	United States of America 14/887943	20-Oct-2015	2016040140	11-Feb-2016	29-Mar-2016	09-May-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
9487760	United States of America 15/048887	19-Feb-2016	20160168545	16-Jun-2016	08-Nov-2016	09-May-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
10947572	United States of America 17/002671	25-Aug-2020	20200385768	10-Dec-2020	16-Mar-2021	19-May-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
11377673	United States of America 17/091599	06-Nov-2020	20210054422	25-Feb-2021	05-Jul-2022	09-May-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
11618911	United States of America 17/830650	02-Jun-2022	20220315961	06-Oct-2022	04-Apr-2023	09-May-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
9695451	United States of America 18/171,272	17-Feb-2023	20230295673	21-Sep-2023			Published	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
9803224	United States of America 15/605061	25-May-2017	20170268028	21-Sep-2017	31-Oct-2017	09-May-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
9828614	United States of America 15/710462	20-Sep-2017			28-Nov-2017	09-May-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
9932613	United States of America 15/792446	24-Oct-2017	20180066292	08-Mar-2018	03-Apr-2018	09-May-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
10066250	United States of America 15/899834	20-Feb-2018	20180187221	05-Jul-2018	04-Sep-2018	09-May-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS

10160983	United States of America	16/054843	03-Aug-2018	20180346945	06-Dec-2018	25-Dec-2018	09-May-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
10308966	United States of America	16/195480	19-Nov-2018	20190078124	14-Mar-2019	04-Jun-2019	09-May-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
10494656	United States of America	16/391036	22-Apr-2019	20190249209	15-Aug-2019	03-Dec-2019	09-May-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
10787689	United States of America	16/655547	17-Oct-2019	20200032303	30-Jan-2020	29-Sep-2020	09-May-2033	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
9902943	United States of America	14/652887	17-Jun-2015	20150329837	19-Nov-2015	27-Feb-2018	16-Dec-2033	Granted	ENGINEERED BIOCATALYSTS AND METHODS FOR SYNTHESIZING CHIRAL AMINES
10435674	United States of America	15/290219	11-Oct-2016	20170022484	26-Jan-2017	08-Oct-2019	16-Dec-2033	Granted	ENGINEERED BIOCATALYSTS AND METHODS FOR SYNTHESIZING CHIRAL AMINES
10526587	United States of America	15/869455	12-Jan-2018	20180148698	31-May-2018	07-Jan-2020	01-Jun-2034	Granted	ENGINEERED BIOCATALYSTS AND METHODS FOR SYNTHESIZING CHIRAL AMINES
11034939	United States of America	16/701389	03-Dec-2019	20200109379	09-Apr-2020	15-Jun-2021	25-Dec-2033	Granted	ENGINEERED BIOCATALYSTS AND METHODS FOR SYNTHESIZING CHIRAL AMINES
11732248	United States of America	17/317231	11-May-2021	20210269777	02-Sep-2021	22-Aug-2023	05-May-2034	Granted	ENGINEERED BIOCATALYSTS AND METHODS FOR SYNTHESIZING CHIRAL AMINES
9540622	United States of America	18/344,690	29-Jun-2023	US 2023-0332115 A1	19-Oct-2023			Published	ENGINEERED BIOCATALYSTS AND METHODS FOR SYNTHESIZING CHIRAL AMINES
9540622	United States of America	14/760963	14-Jul-2015	20150353976	10-Dec-2015	10-Jan-2017	01-Mar-2034	Granted	ENGINEERED BIOCATALYSTS USEFUL FOR CARBAPENEM SYNTHESIS

9663771	United States of America 15/362083	28-Nov-2016	20170073654	16-Mar-2017	30-May-2017	16-Jan-2034	Granted	ENGINEERED BIOCATALYSTS USEFUL FOR CARBAPENEM SYNTHESIS
9617573	United States of America 14/768408	17-Aug-2015	20160002688	07-Jan-2016	11-Apr-2017	24-Feb-2034	Granted	ENGINEERED TRANSAMINASE POLYPEPTIDES FOR INDUSTRIAL BIOCATALYSIS
9963685	United States of America 15/443792	27-Feb-2017	20170175090	22-Jun-2017	08-May-2018	24-Feb-2034	Granted	ENGINEERED TRANSAMINASE POLYPEPTIDES FOR INDUSTRIAL BIOCATALYSIS
10604744	United States of America 15/945549	04-Apr-2018	20180223265	09-Aug-2018	31-Mar-2020	24-Feb-2034	Granted	ENGINEERED TRANSAMINASE POLYPEPTIDES FOR INDUSTRIAL BIOCATALYSIS
11098292	United States of America 16/790534	13-Feb-2020	20200172882	04-Jun-2020	24-Aug-2021	24-Feb-2034	Granted	ENGINEERED TRANSAMINASE POLYPEPTIDES FOR INDUSTRIAL BIOCATALYSIS
9822346	United States of America 17/379563	19-Jul-2021	20210348138	11-Nov-2021		24-Feb-2034	Published	ENGINEERED TRANSAMINASE POLYPEPTIDES FOR INDUSTRIAL BIOCATALYSIS
10407668	United States of America 15/783657	13-Oct-2017	20180030419	01-Feb-2018	10-Sep-2019	12-Nov-2034	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
11060072	United States of America 16/525834	30-Jul-2019	20190345458	14-Nov-2019	13-Jul-2021	12-Nov-2034	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
9708587	United States of America 14/794249	08-Jul-2015	2016010065	14-Jan-2016	18-Jul-2017	08-Jul-2035	Granted	NOVEL P450-BM3 VARIANTS WITH IMPROVED ACTIVITY
	United States of America 17/343058	09-Jun-2021	20210301266	30-Sep-2021			Published	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS

10100289	United States of America 15/619176	09-Jun-2017	20170275598	28-Sep-2017	16-Oct-2018	08-Jul-2035	Granted	NOVEL P450-BM3 VARIANTS WITH IMPROVED ACTIVITY
10689627	United States of America 16/131252	14-Sep-2018	20190002847	03-Jan-2019	23-Jun-2020	08-Jul-2035	Granted	NOVEL P450-BM3 VARIANTS WITH IMPROVED ACTIVITY
11279917	United States of America 15/931310	13-May-2020	20200332268	22-Oct-2020	22-Mar-2022	08-Jul-2035	Granted	NOVEL P450-BM3 VARIANTS WITH IMPROVED ACTIVITY
11807874	United States of America 17/672542	15-Feb-2022	20220169994	02-Jun-2022	07-Nov-2023	08-Jul-2035	Granted	NOVEL P450-BM3 VARIANTS WITH IMPROVED ACTIVITY
10370648	United States of America 15/519949	18-Apr-2017	20170355966	14-Dec-2017	06-Aug-2019	10-Feb-2036	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
10793836	United States of America 16/443250	17-Jun-2019	20190300865	03-Oct-2019	06-Oct-2020	24-Nov-2035	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
11352609	United States of America 17/010709	02-Sep-2020	20200399616	24-Dec-2020	07-Jun-2022	24-Nov-2035	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
11802274	United States of America 17/739028	06-May-2022	20220275349	01-Sep-2022	31-Oct-2023	24-Nov-2035	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
10696953	United States of America 18/471,524	21-Sep-2023					Pending	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
10696953	United States of America 15/543535	13-Jul-2017	20180002676	04-Jan-2018	30-Jun-2020	05-Feb-2036	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE SYNTHESIS OF CHIRAL COMPOUNDS

11236308	United States of America 16/874574	14-May-2020	20200347365	05-Nov-2020	01-Feb-2022	05-Feb-2036	Granted	KETOREDUCTASE POLYPEPTIDES FOR THE SYNTHESIS OF CHIRAL COMPOUNDS
	United States of America 17/553455	16-Dec-2021	20220106575	07-Apr-2022			Published	KETOREDUCTASE POLYPEPTIDES FOR THE SYNTHESIS OF CHIRAL COMPOUNDS
9944916	United States of America 15/148056	06-May-2016	20160326508	10-Nov-2016	17-Apr-2018	06-May-2036	Granted	PENICILLIN-G ACYLASES
10400231	United States of America 15/914258	07-Mar-2018	20180201919	19-Jul-2018	03-Sep-2019	06-May-2036	Granted	PENICILLIN-G ACYLASES
10781436	United States of America 16/524546	29-Jul-2019	20190345474	14-Nov-2019	22-Sep-2020	06-May-2036	Granted	PENICILLIN-G ACYLASES
11180747	United States of America 16/995630	17-Aug-2020	20200385699	10-Dec-2020	23-Nov-2021	06-May-2036	Granted	VARIANT PENICILLIN-G ACYLASES
	United States of America 17/504852	19-Oct-2021	20220042004	10-Feb-2022			Published	PENICILLIN-G ACYLASES
9683220	United States of America 15/171116	02-Jun-2016	20170009213	12-Jan-2017	20-Jun-2017	02-Jun-2036	Granted	NOVEL P450-BM3 VARIANTS WITH IMPROVED ACTIVITY
10113153	United States of America 15/591816	10-May-2017	20170247667	31-Aug-2017	30-Oct-2018	02-Jun-2036	Granted	NOVEL P450-BM3 VARIANTS WITH IMPROVED ACTIVITY
10450550	United States of America 16/152709	05-Oct-2018	20190024059	24-Jan-2019	22-Oct-2019	02-Jun-2036	Granted	NOVEL P450-BM3 VARIANTS WITH IMPROVED ACTIVITY
10704030	United States of America 16/562673	06-Sep-2019	20200002685	02-Jan-2020	07-Jul-2020	02-Jun-2036	Granted	NOVEL P450-BM3 VARIANTS WITH IMPROVED ACTIVITY

10982197	United States of America 16/890408	02-Jun-2020	20200291365	17-Sep-2020	20-Apr-2021	02-Jun-2036	Granted	NOVEL P450-BM3 VARIANTS WITH IMPROVED ACTIVITY
11591578	United States of America 17/203421	16-Mar-2021	20210214694	15-Jul-2021	28-Feb-2023	02-Jun-2036	Granted	NOVEL P450-BM3 VARIANTS WITH IMPROVED ACTIVITY
	United States of America 18/153,620	12-Jan-2023	20230250403	10-Aug-2023			Published	NOVEL P450-BM3 VARIANTS WITH IMPROVED ACTIVITY
11046936	United States of America 16/319537	22-Jan-2019	20200208123	02-Jul-2020	29-Jun-2021	15-Oct-2037	Granted	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
	United States of America 17/330686	26-May-2021	20210284973	16-Sep-2021			Allowed	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
10184117	United States of America 15/491692	19-Apr-2017	20170355968	14-Dec-2017	22-Jan-2019	19-Apr-2037	Granted	BIOCATALYSTS AND METHODS FOR HYDROXYLATION OF CHEMICAL COMPOUNDS
10844358	United States of America 16/196205	20-Nov-2018	20190078061	14-Mar-2019	24-Nov-2020	19-Apr-2037	Granted	BIOCATALYSTS AND METHODS FOR HYDROXYLATION OF CHEMICAL COMPOUNDS
11634695	United States of America 17/072910	16-Oct-2020	20210032605	04-Feb-2021	25-Apr-2023	07-Jun-2037	Granted	BIOCATALYSTS AND METHODS FOR HYDROXYLATION OF CHEMICAL COMPOUNDS
	United States of America 18/180,711	08-Mar-2023	20230272354	31-Aug-2023			Published	BIOCATALYSTS AND METHODS FOR HYDROXYLATION OF CHEMICAL COMPOUNDS
10724025	United States of America 15/588378	05-May-2017	20170321202	09-Nov-2017	28-Jul-2020	26-Dec-2037	Granted	PENICILLIN-G ACYLASES
11214786	United States of America 16/902001	15-Jun-2020	20200339972	29-Oct-2020	04-Jan-2022	05-May-2037	Granted	PENICILLIN-G ACYLASES

10745681	United States of America	17/537941	30-Nov-2021	20220154164	19-May-2022	Allowed	PENICILLIN-G ACYLASES
10865402	United States of America	15/861849	04-Jan-2018	20180187180	05-Jul-2018	Granted	PENICILLIN-G ACYLASES
11591588	United States of America	16/927129	13-Jul-2020	20200339973	29-Oct-2020	Granted	PENICILLIN-G ACYLASES
11643642	United States of America	16/616041	22-Nov-2019	20200115696	16-Apr-2020	Granted	PENICILLIN-G ACYLASES
11319531	United States of America	16/652941	01-Apr-2020	20200263150	20-Aug-2020	Granted	TRANSGLUTAMINASE VARIANTS
11015180	United States of America	16/218003	12-Dec-2018	20190177707	13-Jun-2019	Granted	CARBOXYESTERASE POLYPEPTIDES FOR AMIDE COUPLING
11021729	United States of America	16/605576	16-Oct-2019	20200123585	23-Apr-2020	Granted	KETOREDUCTASE POLYPEPTIDES AND POLYNUCLEOTIDES

11746369	United States of America	17/239953	26-Apr-2021	20210254119	19-Aug-2021	05-Sep-2023	19-May-2038	Granted	KETOREDUCTASE POLYPEPTIDES AND POLYNUCLEOTIDES
11359183	United States of America	18/352,899	14-Jul-2023					Pending	KETOREDUCTASE POLYPEPTIDES AND POLYNUCLEOTIDES
11034948	United States of America	16/615999	22-Nov-2019	20200109378	09-Apr-2020	14-Jun-2022	23-May-2038	Granted	ENGINEERED TRANSAMINASE POLYPEPTIDES FOR INDUSTRIAL BIOCATALYSIS
11795445	United States of America	17/316165	10-May-2021	20210261940	26-Aug-2021	24-Oct-2023	24-Mar-2040	Granted	ENGINEERED PHOSPHOPENTOMUTASE VARIANT ENZYMES
1162105	United States of America	16/460025	02-Jul-2019	20200010834	09-Jan-2020	02-Nov-2021	02-Jul-2039	Granted	ENGINEERED PURINE NUCLEOSIDE PHOSPHORYLASE VARIANT ENZYMES
11274286	United States of America	17/490215	30-Sep-2021	20220010316	13-Jan-2022			Published	ENGINEERED PURINE NUCLEOSIDE PHOSPHORYLASE VARIANT ENZYMES
11845968	United States of America	17/592869	04-Feb-2022	20220162580	26-May-2022	19-Dec-2023	02-Jul-2039	Granted	ENGINEERED DEOXYRIBOSE-PHOSPHATE ALDOLASES

	United States of America	18/503,542	07-Nov-2023							Pending	ENGINEERED DEOXYRIBOSE- PHOSPHATE ALDOLASES
	United States of America		12-Feb-2024	18/683245						Pending	ENGINEERED NUCLEOSIDE DEOXYRIBOSYLTRANSFERASE VARIANT ENZYMES
11466259	United States of America	16/460376	02-Jul-2019	20200010869	09-Jan-2020	11-Oct-2022	02-Jul-2039			Granted	ENGINEERED GALACTOSE OXIDASE VARIANT ENZYMES
	United States of America	17/931003	09-Sep-2022	20230026007	26-Jan-2023		02-Jul-2039			Published	ENGINEERED GALACTOSE OXIDASE VARIANT ENZYMES
10889806	United States of America	16/460147	02-Jul-2019	20200010815	09-Jan-2020	12-Jan-2021	02-Jul-2039			Granted	ENGINEERED PANTOTHENATE KINASE VARIANT ENZYMES
	United States of America	17/120646	14-Dec-2020	20210102179	08-Apr-2021					Published	ENGINEERED PANTOTHENATE KINASE VARIANT ENZYMES
11198861	United States of America	16/441458	14-Jun-2019	20200017845	16-Jan-2020	14-Dec-2021	25-Jul-2039			Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
	United States of America	17/420378	01-Jul-2021	20220090033	24-Mar-2022					Published	ENGINEERED TRANSAMINASE POLYPEPTIDES
	United States of America	17/600345	30-Sep-2021	20220213518	07-Jul-2022					Published	ENGINEERED IMINE REDUCTASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
	United States of America	17/600357	30-Sep-2021	20220145268	12-May-2022					Published	ENGINEERED GLUCOSE DEHYDROGENASES AND METHODS FOR THE REDUCTIVE AMINATION OF KETONE AND AMINE COMPOUNDS
	United States of America	17/635163	14-Feb-2022	20220290110	15-Sep-2022					Published	PEROXIDASE ACTIVITY TOWARDS 10- ACETYL-3,7- DIHYDROXYPHENOXAZINE
	United States of America	17/617527	08-Dec-2021	20220251523	11-Aug-2022					Published	ENGINEERED ACETATE KINASE VARIANT ENZYMES
	United States of America	17/617533	08-Dec-2021	20220243183	04-Aug-2022					Published	ENGINEERED SUCROSE PHOSPHORYLASE VARIANT ENZYMES
	United States of America	17/776900	13-May-2022	20230002744	05-Jan-2023					Published	BIOCATALYSTS AND METHODS FOR HYDROXYLATION OF CHEMICAL COMPOUNDS
11788071	United States of America	17/223677	06-Apr-2021	20210317421	14-Oct-2021	17-Oct-2023	05-Jun-2041			Granted	ENGINEERED TRANSAMINASE POLYPEPTIDES
	United States of America	18/459,797	01-Sep-2023	US 2024- 0002816 A1	04-Jan-2024					Published	ENGINEERED TRANSAMINASE POLYPEPTIDES

11913037	United States of America 17/711382	01-Apr-2022	20220325257	13-Oct-2022	27-Feb-2024	01-Apr-2042	Granted	ENGINEERED ADENYLATE KINASE VARIANT ENZYMES
	United States of America 18/413,338	16-Jan-2024					Pending	ENGINEERED ADENYLATE KINASE VARIANT ENZYMES
	United States of America 17/711401	01-Apr-2022	20220325284	13-Oct-2022			Published	ENGINEERED GUANYLATE KINASE VARIANT ENZYMES
	United States of America 17/711430	01-Apr-2022	20220325285	13-Oct-2022			Published	ENGINEERED CYCLIC GMP-AMP SYNTHASE (cGAS) VARIANT ENZYMES
11913036	United States of America 17/711451	01-Apr-2022	20220325256	13-Oct-2022	27-Feb-2024	01-Apr-2042	Granted	ENGINEERED ACETATE KINASE VARIANT ENZYMES
	United States of America 18/420,071	23-Jan-2024					Pending	ENGINEERED ACETATE KINASE VARIANT ENZYMES
	United States of America 17/916510	30-Sep-2022	20230159904	25-May-2023			Published	CARBOXYESTERASE POLYPEPTIDES FOR KINETIC RESOLUTION
	United States of America 18/247,054	28-Mar-2023	US 2024-0002817 A1	04-Jan-2024			Published	ENGINEERED PANTOTHENATE KINASE VARIANT ENZYMES
	United States of America 18/247,863	04-Apr-2023	US 2023-0374470 A1	23-Nov-2023			Published	ENGINEERED GALACTOSE OXIDASE VARIANT ENZYMES
	United States of America 18/247,866	04-Apr-2023	US 2023-0374486 A1	23-Nov-2023			Published	ENGINEERED PHOSPHOPENTOMUTASE VARIANT ENZYMES
	United States of America 18/024942	06-Mar-2023	20240026401	25-Jan-2024			Published	ENGINEERED BIOCATALYSTS AND METHODS FOR SYNTHESIZING CHIRAL AMINES
11898174	United States of America 17/555012	17-Dec-2021	20220195400	23-Jun-2022	13-Feb-2024	06-Jan-2042	Granted	ENGINEERED URIDINE PHOSPHORYLASE VARIANT ENZYMES
	United States of America 18/403,265	03-Jan-2024					Pending	ENGINEERED URIDINE PHOSPHORYLASE VARIANT ENZYMES
	United States of America 18/163,132	01-Feb-2023	20230242946	03-Aug-2023			Published	ENGINEERED ENONE REDUCTASE AND KETOREDUCTASE VARIANT ENZYMES
	United States of America 18/181,760	10-Mar-2023	20230287361	14-Sep-2023			Published	ENGINEERED MONOAMINE OXIDASES FOR THE PREPARATION OF STEREOERICALLY PURE FUSED BICYCLIC PROLINE COMPOUNDS
	United States of America 18/516,310	21-Nov-2023					Pending	P450-BM3 VARIANTS WITH IMPROVED ACTIVITY
	United States of America 18/516,054	21-Nov-2023					Pending	P450-BM3 VARIANTS WITH IMPROVED ACTIVITY

7829157	United States of America 10/916311	11-Aug-2004	20060195947	31-Aug-2006	08-Dec-2009	11-Aug-2024	Granted	KETOREDUCTASE POLYPEPTIDES AND RELATED POLYNUCLEOTIDES
7833767	United States of America 12/576195	08-Oct-2009	20100028972	04-Feb-2010	16-Nov-2010		Granted	KETOREDUCTASE POLYPEPTIDES AND RELATED POLYNUCLEOTIDES
7807423	United States of America 11/502745	10-Aug-2006	20070161094	12-Jul-2007	05-Oct-2010	18-Feb-2024	Granted	ENZYMATIC PROCESSES FOR THE PRODUCTION OF 4-SUBSTITUTED 3-HYDROXYBUTYRIC ACID DERIVATIVES
7816111	United States of America 10/915927	11-Aug-2004	20050095619	05-May-2005	19-Oct-2010	26-Sep-2025	Granted	IMPROVED GLUCOSE DEHYDROGENASE POLYPEPTIDES AND RELATED POLYNUCLEOTIDES
7939309	United States of America 12/790784	28-May-2010	20100304459	02-Dec-2010	10-May-2011		Granted	IMPROVED GLUCOSE DEHYDROGENASE POLYPEPTIDES AND RELATED POLYNUCLEOTIDES
7824898	United States of America 10/917179	11-Aug-2004	20050153417	14-Jul-2005	02-Nov-2010	11-Aug-2024	Granted	HALOHYDRIN DEHALOGENASES AND RELATED POLYNUCLEOTIDES
8101395	United States of America 12/573824	05-Oct-2009	20100167345	01-Jul-2010	24-Jan-2012		Granted	HALOHYDRIN DEHALOGENASES AND RELATED POLYNUCLEOTIDES
8535910	United States of America 13/349514	12-Jan-2012	20120208259	16-Aug-2012	17-Sep-2013	05-Nov-2029	Granted	HALOHYDRIN DEHALOGENASES AND RELATED POLYNUCLEOTIDES
7541171	United States of America 11/067323	23-Feb-2005	20050272064	08-Dec-2005	02-Jun-2009	11-Aug-2024	Granted	IMPROVED HALOHYDRIN DEHALOGENASES AND RELATED POLYNUCLEOTIDES
7588928	United States of America 11/266747	02-Nov-2005	20060099700	11-May-2006	15-Sep-2009		Granted	IMPROVED HALOHYDRIN DEHALOGENASES AND RELATED POLYNUCLEOTIDES
8252554	United States of America 12/505374	17-Jul-2009	20090298125	03-Dec-2009	28-Aug-2012		Granted	IMPROVED HALOHYDRIN DEHALOGENASES AND RELATED POLYNUCLEOTIDES
7790432	United States of America 11/919271	20-Mar-2009	20100099143	22-Apr-2010	07-Sep-2010	09-Mar-2026	Granted	ALANINE 2,3-AMINOMUTASES AND RELATED POLYNUCLEOTIDES
8030051	United States of America 11/581946	16-Oct-2006	20100248312	30-Sep-2010	04-Oct-2011	15-Jan-2030	Granted	ALANINE 2,3-AMINOMUTASES AND RELATED POLYNUCLEOTIDES
7879585	United States of America 11/865696	01-Oct-2007	0248539	09-Oct-2008	01-Feb-2011	01-Oct-2027	Granted	COMPOSITIONS AND METHODS FOR PRODUCING STEREISOERICALLY PURE STATINS AND SYNTHETIC INTERMEDIATES THEREFOR

8273547	United States of America 12/978022	23-Dec-2010	20110195465	11-Aug-2011	25-Sep-2012	01-Oct-2027	Granted	COMPOSITIONS AND METHODS FOR PRODUCING STEREOISOMERICALLY PURE STATINS AND SYNTHETIC INTERMEDIATES THEREFOR
8617864	United States of America 13/571248	09-Aug-2012	20130040364	14-Feb-2013	31-Dec-2013	01-Oct-2027	Granted	POLYNUCLEOTIDES ENCODING KETOREDUCTASES FOR PRODUCING STEREOISOMERICALLY PURE STATINS AND SYNTHETIC INTERMEDIATES THEREFOR
8986965	United States of America 13/578525	10-Aug-2012	20130143291	06-Jun-2013	24-Mar-2015	13-Jun-2031	Granted	PRODUCTION OF MONOTERPENES
9005946	United States of America 13/203909	30-Aug-2011	20120009631	12-Jan-2012	14-Apr-2015	31-Jan-2032	Granted	VARIANT ENDOGLUCANASES AND RELATED POLYNUCLEOTIDES
9464278	United States of America 14/642267	09-Mar-2015	20150218541	06-Aug-2015	11-Oct-2016	16-Apr-2030	Granted	VARIANT ENDOGLUCANASES AND RELATED POLYNUCLEOTIDES
8663960	United States of America 13/493795	11-Jun-2012	20120315676	13-Dec-2012	04-Mar-2014	31-Mar-2030	Granted	ENDOGLUCANASES
8357523	United States of America 12/816989	16-Jun-2010	20100317059	16-Dec-2010	22-Jan-2013	02-Mar-2031	Granted	BETA-GLUCOSIDASE VARIANT ENZYMES AND RELATED POLYNUCLEOTIDES
8530201	United States of America 13/719431	19-Dec-2012	20130095530	18-Apr-2013	10-Sep-2013	16-Jun-2030	Granted	BETA-GLUCOSIDASE VARIANT ENZYMES AND RELATED POLYNUCLEOTIDES
8715975	United States of America 14/018531	05-Sep-2013	20140004586	02-Jan-2014	06-May-2014	16-Jun-2030	Granted	BETA-GLUCOSIDASE VARIANT ENZYMES AND RELATED POLYNUCLEOTIDES
8216815	United States of America 12/825939	29-Jun-2010	20110000125	06-Jan-2011	10-Jul-2012	28-Sep-2030	Granted	PRODUCTION OF FATTY ALCOHOLS WITH FATTY ALCOHOL FORMING ACYL-COA REDUCTASES
8574877	United States of America 13/494709	12-Jun-2012	20130040352	14-Feb-2013	05-Nov-2013	29-Jun-2030	Granted	PRODUCTION OF FATTY ALCOHOLS WITH FATTY ALCOHOL FORMING ACYL-COA REDUCTASES
8883467	United States of America 14/040371	27-Sep-2013	20140099686	10-Apr-2014	11-Nov-2014	29-Jun-2030	Granted	PRODUCTION OF FATTY ALCOHOLS WITH FATTY ALCOHOL FORMING ACYL-COA REDUCTASES
8785170	United States of America 13/393495	29-Feb-2012	20120156754	21-Jun-2012	22-Jul-2014	21-Oct-2030	Granted	VARIANT CBH2 CELLULASES AND RELATED POLYNUCLEOTIDES
9102927	United States of America 14/311914	23-Jun-2014	20140302588	09-Oct-2014	11-Aug-2015	31-Aug-2030	Granted	VARIANT CBH2 CELLULASES AND RELATED POLYNUCLEOTIDES
8993277	United States of America 14/134839	19-Dec-2013	20140113352	24-Apr-2014	31-Mar-2015	19-Nov-2030	Granted	RECOMBINANT THERMOASCUS AURANTIACUS BETA-GLUCOSIDASE VARIANTS FOR PRODUCTION OF FERMENTABLE SUGARS FROM CELLULOSIC BIOMASS

8715962	United States of America 13/577715	08-Aug-2012	20130011888	10-Jan-2013	06-May-2014	18-Sep-2032	Granted	PRODUCTION OF GERANYL DIPHOSPHATE
8574878	United States of America 13/171138	28-Jun-2011	20120009640	12-Jan-2012	05-Nov-2013	25-Oct-2031	Granted	IMPROVED FATTY ALCOHOL FORMING ACYL REDUCTASES (FARS) AND METHODS OF USE THEREOF
9163221	United States of America 14/040550	27-Sep-2013	20140093929	03-Apr-2014	20-Oct-2015	04-Aug-2031	Granted	FATTY ALCOHOL FORMING ACYL REDUCTASES (FARS) AND METHODS OF USE THEREOF
9752171	United States of America 14/871483	30-Sep-2015	2016010132	14-Jan-2016	05-Sep-2017	27-May-2031	Granted	PENTOSE FERMENTATION BY A RECOMBINANT MICROORGANISM
9068235	United States of America 13/286860	01-Nov-2011	20120107880	03-May-2012	30-Jun-2015	06-Apr-2034	Granted	FUNGAL STRAINS
9528098	United States of America 14/717447	20-May-2015	20150252342	10-Sep-2015	27-Dec-2016	01-Nov-2031	Granted	FUNGAL STRAINS
8900847	United States of America 13/496368	12-Apr-2012	20120190076	26-Jul-2012	02-Dec-2014	14-Feb-2031	Granted	RECOMBINANT C1 BETA-GLUCOSIDASE FOR PRODUCTION OF SUGARS FROM CELLULOSIC BIOMASS
9175324	United States of America 14/531727	03-Nov-2014	20150050702	19-Feb-2015	03-Nov-2015	30-Sep-2030	Granted	RECOMBINANT C1 BETA-GLUCOSIDASE FOR PRODUCTION OF SUGARS FROM CELLULOSIC BIOMASS
8685690	United States of America 13/416608	09-Mar-2012	20120164696	28-Jun-2012	01-Apr-2014	24-Nov-2030	Granted	RECOMBINANT BETA-GLUCOSIDASE VARIANTS FOR PRODUCTION OF SOLUBLE SUGARS FROM CELLULOSIC BIOMASS
8323947	United States of America 13/416555	09-Mar-2012	20120164709	28-Jun-2012	04-Dec-2012	24-Nov-2030	Granted	RECOMBINANT BETA-GLUCOSIDASE VARIANTS FOR PRODUCTION OF SOLUBLE SUGARS FROM CELLULOSIC BIOMASS
8759064	United States of America 13/107849	13-May-2011	20120003703	05-Jan-2012	24-Jun-2014	16-Jul-2031	Granted	CELLOBIHYDROLASE VARIANTS
9080163	United States of America 14/274589	09-May-2014	20140322796	30-Oct-2014	14-Jul-2015	13-May-2031	Granted	CELLOBIHYDROLASE VARIANTS
8298795	United States of America 13/215193	22-Aug-2011	20120083019	05-Apr-2012	30-Oct-2012	22-Aug-2031	Granted	USE OF GLYCOSIDE HYDROLASE 61 FAMILY PROTEINS IN PROCESSING OF CELLULOSE
9493802	United States of America 13/640471	10-Oct-2012	20140186896	03-Jul-2014	15-Nov-2016	22-Aug-2031	Granted	USE OF GLYCOSIDE HYDROLASE 61 FAMILY PROTEINS IN PROCESSING OF CELLULOSE

8956845	United States of America 14/289021	28-May-2014	20140256018	11-Sep-2014	17-Feb-2015	16-Jun-2030	Granted	BETA-GLUCOSIDASE VARIANTS
9150843	United States of America 14/540422	13-Nov-2014	20150064766	05-Mar-2015	06-Oct-2015	16-Jun-2030	Granted	BETA-GLUCOSIDASE VARIANTS
8309328	United States of America 13/539799	02-Jul-2012	20120270278	25-Oct-2012	13-Nov-2012	02-Nov-2030	Granted	COMPOSITIONS AND METHODS FOR PRODUCTION OF FERMENTABLE SUGARS
8945903	United States of America 13/549300	13-Jul-2012	20130062693	28-Feb-2013	03-Feb-2015	12-Oct-2032	Granted	CELLOBIOHYDROLASE VARIANTS
8877474	United States of America 13/592024	22-Aug-2012	20130052713	28-Feb-2013	04-Nov-2014	12-Jan-2033	Granted	GH61 GLYCOSIDE HYDROLASE PROTEIN VARIANTS AND COFACTORS THAT ENHANCE GH61 ACTIVITY
8951758	United States of America 13/592060	22-Aug-2012	20130052698	28-Feb-2013	10-Feb-2015	04-Oct-2032	Granted	GH61 GLYCOSIDE HYDROLASE PROTEIN VARIANTS AND COFACTORS THAT ENHANCE GH61 ACTIVITY
9434919	United States of America 14/950712	24-Nov-2015	20160075990	17-Mar-2016	06-Sep-2016	29-Aug-2032	Granted	FUNGAL PROTEASES
8354261	United States of America 13/174479	30-Jun-2011	2012009653	12-Jan-2012	15-Jan-2013	30-Jun-2031	Granted	HIGHLY STABLE BETA-CLASS CARBONIC ANHYDRASES USEFUL IN CARBON CAPTURE SYSTEMS
8420364	United States of America 13/174393	30-Jun-2011	20120009652	12-Jan-2012	16-Apr-2013	30-Jun-2031	Granted	HIGHLY STABLE BETA-CLASS CARBONIC ANHYDRASES USEFUL IN CARBON CAPTURE SYSTEMS
8512989	United States of America 13/721586	20-Dec-2012	20130171718	04-Jul-2013	20-Aug-2013	30-Jun-2031	Granted	HIGHLY STABLE BETA-CLASS CARBONIC ANHYDRASES USEFUL IN CARBON CAPTURE SYSTEMS
8354262	United States of America 13/174253	30-Jun-2011	20120009646	12-Jan-2012	15-Jan-2013	30-Jun-2031	Granted	CHEMICALLY MODIFIED CARBONIC ANHYDRASES USEFUL IN CARBON CAPTURE SYSTEMS
8569031	United States of America 13/721648	20-Dec-2012	20130189756	25-Jul-2013	29-Oct-2013	30-Jun-2031	Granted	CHEMICALLY MODIFIED CARBONIC ANHYDRASES USEFUL IN CARBON CAPTURE SYSTEMS
9447436	United States of America 14/366517	18-Jun-2014	20140336423	13-Nov-2014	20-Sep-2016	29-Jan-2033	Granted	PRODUCTION OF SATURATED FATTY ALCOHOLS FROM ENGINEERED MICROORGANISMS
9512447	United States of America 14/650953	10-Jun-2015	20160010115	14-Jan-2016	06-Dec-2016	04-Dec-2033	Granted	MODIFIED NATIVE β -KETOACYL-ACP SYNTHASES AND ENGINEERED MICROORGANISMS
9714437	United States of America 15/149859	09-May-2016	20160244787	25-Aug-2016	25-Jul-2017	19-Apr-2033	Granted	PRODUCTION OF FATTY ALCOHOLS FROM ENGINEERED MICROORGANISMS

9650655	United States of America	14/4/15665	19-Jan-2015	20150176040	25-Jun-2015	16-May-2017	16-Sep-2033	Granted	PRODUCTION OF FATTY ALCOHOLS FROM ENGINEERED MICROORGANISMS
9506087	United States of America	14/4/19706	05-Feb-2015	20150225745	13-Aug-2015	29-Nov-2016	06-Aug-2033	Granted	GLUCOSE AND XYLLOSE CO-UTILIZATION IN E. COLI
9670493	United States of America	14/773554	08-Sep-2015	2016017342	21-Jan-2016	06-Jun-2017	11-May-2034	Granted	LOW-PHOSPHATE REPRESSIBLE PROMOTER
9611462	United States of America	14/366761	19-Jun-2014	20140370552	18-Dec-2014	04-Apr-2017	24-Nov-2033	Granted	ENDOGLUCANASE 1B (EG1B) VARIANTS
8956644	United States of America	13/914475	10-Jun-2013	20140017733	16-Jan-2014	17-Feb-2015	10-Jun-2033	Granted	FUNGAL XYLANASES AND XYLOSIDASES
8980578	United States of America	13/914482	10-Jun-2013	20140051119	20-Feb-2014	17-Mar-2015	10-Jun-2033	Granted	FUNGAL BETA-XYLOSIDASE VARIANTS
9476077	United States of America	14/636988	03-Mar-2015	20150191759	09-Jul-2015	25-Oct-2016	10-Jun-2033	Granted	FUNGAL BETA-XYLOSIDASE VARIANTS
9611468	United States of America	14/255539	17-Apr-2014	20140314843	23-Oct-2014	04-Apr-2017	01-Oct-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
10160963	United States of America	15/431491	13-Feb-2017	20170191050	06-Jul-2017	25-Dec-2018	05-Aug-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
10294468	United States of America	16/176896	31-Oct-2018	20190055535	21-Feb-2019	21-May-2019	17-Apr-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
10717974	United States of America	16/389203	19-Apr-2019	20190241882	08-Aug-2019	21-Jul-2020	17-Apr-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
10975367	United States of America	16/813207	09-Mar-2020	20200199566	25-Jun-2020	13-Apr-2021	17-Apr-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
10494623	United States of America	17/220684	01-Apr-2021	20210222146	22-Jul-2021		17-Apr-2034	Published	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
10870843	United States of America	16/176986	31-Oct-2018	20190055536	21-Feb-2019	03-Dec-2019	17-Apr-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
10941391	United States of America	16/601993	15-Oct-2019	20200032235	30-Jan-2020	22-Dec-2020	17-Apr-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
10941391	United States of America	16/653061	15-Oct-2019	20200032236	30-Jan-2020	09-Mar-2021	17-Apr-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
11913045	United States of America	17/009925	02-Sep-2020	20200399627	24-Dec-2020	27-Feb-2024	27-Feb-2035	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
10487319	United States of America	15/720060	29-Sep-2017	20180037880	08-Feb-2018	26-Nov-2019	08-Jul-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
10640759	United States of America	16/601173	14-Oct-2019	20200032233	30-Jan-2020	05-May-2020	17-Apr-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
11401515	United States of America	16/831698	26-Mar-2020	20200231959	23-Jul-2020	02-Aug-2022	17-Apr-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES

11136571	United States of America	16/601228	14-Oct-2019	20200040325	06-Feb-2020	05-Oct-2021	17-Apr-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
11130947	United States of America	16/601278	14-Oct-2019	20200032234	30-Jan-2020	28-Sep-2021	17-Apr-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
10144924	United States of America	15/720198	29-Sep-2017	20180016568	18-Jan-2018	04-Dec-2018	17-Apr-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
10356639	United States of America	16/166359	22-Oct-2018	20190040377	07-Feb-2019	23-Jul-2019	17-Apr-2034	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
10273229	United States of America	15/504120	15-Feb-2017	20170334886	23-Nov-2017	30-Apr-2019	18-Sep-2035	Granted	N-SUBSTITUTED 4-AMINOQUINAZOLINE DERIVATIVES AND METHODS OF USE
10045987	United States of America	15/504134	15-Feb-2017	20170273978	28-Sep-2017	14-Aug-2018	27-Aug-2035	Granted	IMIDAZOYL ANILIDE DERIVATIVES AND METHODS OF USE
9605252	United States of America	14/688126	16-Apr-2015	20150299689	22-Oct-2015	28-Mar-2017	16-Apr-2035	Granted	ENGINEERED TYROSINE AMMONIA LYASE
10287567	United States of America	15/432429	14-Feb-2017	20170159038	08-Jun-2017	14-May-2019	08-May-2035	Granted	POLYNUCLEOTIDES ENCODING ENGINEERED TYROSINE AMMONIA LYASE
11015184	United States of America	16/689503	20-Nov-2019	20200071688	05-Mar-2020	25-May-2021	16-Apr-2035	Granted	ENGINEERED TYROSINE AMMONIA LYASE
10973888	United States of America	16/985742	05-Aug-2020	20200360489	19-Nov-2020	13-Apr-2021	02-Dec-2035	Granted	HUMAN ALPHA-GALACTOSIDASE VARIANTS
11278600	United States of America	16/985761	05-Aug-2020	20200360490	19-Nov-2020	22-Mar-2022	02-Dec-2035	Granted	HUMAN ALPHA-GALACTOSIDASE VARIANTS
11497798	United States of America	16/985788	05-Aug-2020	20200405826	31-Dec-2020	15-Nov-2022	02-Dec-2035	Granted	HUMAN ALPHA-GALACTOSIDASE VARIANTS
10995329	United States of America	15/894446	12-Feb-2018	20180230448	16-Aug-2018	04-May-2021	05-Jun-2039	Granted	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
	United States of America	18/154.388	13-Jan-2023	20230295598	21-Sep-2023			Published	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
	United States of America	18/154.475	13-Jan-2023	20230295599	21-Sep-2023			Published	ENGINEERED PHENYLALANINE AMMONIA LYASE POLYPEPTIDES
	United States of America	17/255217	22-Dec-2020	20210269789	02-Sep-2021			Published	ENGINEERED BRANCHED CHAIN KETOACID DECARBOXYLASES
10900055	United States of America	16/436176	10-Jun-2019	20190376097	12-Dec-2019	26-Jan-2021	10-Jun-2039	Granted	ENGINEERED TYROSINE AMMONIA LYASE
11421253	United States of America	17/148834	14-Jan-2021	20210130855	06-May-2021	23-Aug-2022	10-Jun-2039	Granted	ENGINEERED TYROSINE AMMONIA LYASE

11473077	United States of America 16/705656	06-Dec-2019	20200190499	18-Jun-2020	18-Oct-2022	12-Aug-2040	Granted	ENGINEERED TYROSINE AMMONIA LYASE
11427813	United States of America 16/721102	19-Dec-2019	20200199563	25-Jun-2020	30-Aug-2022	21-Feb-2040	Granted	HUMAN ALPHA-GALACTOSIDASE VARIANTS
	United States of America 17/814371	22-Jul-2022	20220356458	10-Nov-2022			Published	HUMAN ALPHA-GALACTOSIDASE VARIANTS
	United States of America 17/749034	19-May-2022	20220403362	22-Dec-2022			Published	ENGINEERED METHIONINE GAMMA LYASE VARIANTS
	United States of America 18/363,976	02-Aug-2023	20240018504	18-Jan-2024			Published	ENGINEERED LEUCINE DECARBOXYLASES
	United States of America 17/126647	18-Dec-2020	20210189365	24-Jun-2021			Allowed	ENGINEERED ACID ALPHA-GLUCOSIDASE VARIANTS
	United States of America 17/186462	26-Feb-2021	20210269787	02-Sep-2021			Published	HUMAN ALPHA-GALACTOSIDASE VARIANTS
	United States of America 17/460141	27-Aug-2021	20220090039	24-Mar-2022			Allowed	ENGINEERED PROTEASE VARIANTS
11767519	United States of America 17/460147	27-Aug-2021	20220090038	24-Mar-2022	26-Sep-2023	27-Aug-2041	Granted	ENGINEERED AMYLASE VARIANTS
	United States of America 18/462,237	06-Sep-2023	2024-0026326A1	25-Jan-2024			Published	ENGINEERED AMYLASE VARIANTS
	United States of America 18/167,614	10-Feb-2023	20230279404	07-Sep-2023			Published	ENGINEERED OXALATE DECARBOXYLASES
	United States of America 18/051,856	01-Nov-2022	20230277635	07-Sep-2023			Published	ENGINEERED LEUCINE DECARBOXYLASES
	United States of America 63/511,347	30-Jun-2023				30-Jun-2024	Pending	ENGINEERED ACID ALPHA-GLUCOSIDASE VARIANTS
	United States of America 18/150,761	05-Jan-2023	US2023-0340073A1	26-Oct-2023			Published	RECOMBINANT FACTOR VIII VARIANTS
	United States of America 18/315,466	10-May-2023	2024-0026331A1	25-Jan-2024			Published	RECOMBINANT NEPRISIN POLYPEPTIDES AND METHODS OF EXPRESSION
	United States of America 63/486,037	20-Feb-2023				20-Feb-2024	Pending	ENGINEERED BETA-GALACTOSIDASE POLYPEPTIDES
	United States of America 63/502,053	12-May-2023				12-May-2024	Pending	ENGINEERED AAV POLYPEPTIDES
	United States of America 63/502,058	12-May-2023				12-May-2024	Pending	ENGINEERED GLUCOCEREBROSIDASE VARIANTS
	United States of America 63/580,130	01-Sep-2023				01-Sep-2024	Pending	IGM PROTEASES
	United States of America 63/505,055	30-May-2023				30-May-2024	Pending	ENGINEERED PROTEASE POLYPEPTIDES

11299723	United States of America 16/306029	30-Nov-2018	20190211318	11-Jul-2019	12-Apr-2022	10-Nov-2038	Granted	ENGINEERED BETA-GLUCOSIDASES AND GLUCOSYLATION METHODS
	United States of America 17/7761126	16-Mar-2022	20230287360	14-Sep-2023			Published	KETOREDUCTASE POLYPEPTIDES AND POLYNUCLEOTIDES
	United States of America 15/972919	07-May-2018	20180320162	08-Nov-2018			Published	ENGINEERED LIGASE VARIANTS
10738286	United States of America 16/012462	19-Jun-2018	20190002850	03-Jan-2019	11-Aug-2020	14-Jul-2038	Granted	T7 RNA POLYMERASE VARIANTS
	United States of America 17/558454	21-Dec-2021	20220186197	16-Jun-2022			Published	T7 RNA POLYMERASE VARIANTS
11236311	United States of America 16/938793	24-Jul-2020	20200354698	12-Nov-2020	01-Feb-2022	19-Jun-2038	Granted	T7 RNA POLYMERASE VARIANTS
11236312	United States of America 16/942599	29-Jul-2020	20200354699	12-Nov-2020	01-Feb-2022	19-Jun-2038	Granted	T7 RNA POLYMERASE VARIANTS
10793841	United States of America 16/012478	19-Jun-2018	20190002851	03-Jan-2019	06-Oct-2020	08-Sep-2038	Granted	T7 RNA POLYMERASE VARIANTS
11060075	United States of America 16/666280	28-Oct-2019	20200131485	30-Apr-2020	13-Jul-2021	28-Oct-2039	Granted	ENGINEERED DNA POLYMERASE VARIANTS
	United States of America 17/345404	11-Jun-2021	20210309977	07-Oct-2021			Allowed	ENGINEERED DNA POLYMERASE VARIANTS
	United States of America 18/046,893	14-Oct-2022	20230183790	15-Jun-2023			Published	RECOMBINANT REVERSE TRANSCRIPTASE VARIANTS
	United States of America 18/046,451	13-Oct-2022	20230183663	15-Jun-2023			Published	ENGINEERED TERMINAL DEOXYNUCLEOTIDYL TRANSFERASE VARIANTS
	United States of America 18/046,895	14-Oct-2022	20230193224	22-Jun-2023			Published	ENGINEERED DNA POLYMERASE VARIANTS
	United States of America 63/494,211	04-Apr-2023			04-Apr-2024		Pending	ENGINEERED DNA POLYMERASE VARIANTS
	United States of America 18/395,294	22-Dec-2023					Pending	ENGINEERED RNA LIGASE VARIANTS
	United States of America 18/420,040	23-Jan-2024					Pending	ENGINEERED DNA LIGASE VARIANTS
	United States of America 63/500,119	04-May-2023			04-May-2024		Pending	ENGINEERED DNA POLYMERASE VARIANTS
	United States of America 63/502,006	12-May-2023			12-May-2024		Pending	ENGINEERED RNA POLYMERASE VARIANTS
	United States of America 63/502,017	12-May-2023			12-May-2024		Pending	ENGINEERED RNA POLYMERASE VARIANTS
	United States of America 63/622,732	19-Jan-2024			19-Jan-2025		Pending	ENGINEERED TRANSPOSASE VARIANTS

11723960	United States of America	17/181924	22-Feb-2021	20210220451	22-Jul-2021	15-Aug-2023	05-Dec-2035	Granted	COMPOSITIONS AND METHODS FOR TREATING GLUTEN INTOLERANCE AND DISORDERS ARISING THEREFROM
10857214	United States of America	15/382560	16-Dec-2016	20170232077	17-Aug-2017	08-Dec-2020	19-Aug-2038	Granted	COMPOSITIONS AND METHODS FOR TREATING GLUTEN INTOLERANCE AND DISORDERS ARISING THEREFROM
11701411	United States of America	17/102290	23-Nov-2020	20210093699	01-Apr-2021	18-Jul-2023	15-Sep-2037	Granted	COMPOSITIONS AND METHODS FOR TREATING GLUTEN INTOLERANCE AND DISORDERS ARISING THEREFROM
	United States of America	18/485,855	12-Oct-2023					Pending	ENGINEERED TERMINAL DEOXYNUCLEOTIDYL TRANSFERASE VARIANTS
	United States of America	63/499,770	03-May-2023				03-May-2024	Pending	ENGINEERED TERMINAL DEOXYNUCLEOTIDYL TRANSFERASE VARIANTS
	United States of America	18/485,925	12-Oct-2023					Pending	ENGINEERED 3'-KINASE VARIANTS AND METHODS OF USE
	United States of America	63/589,818	12-Oct-2023				12-Oct-2024	Pending	ENGINEERED ADENOSINE KINASE VARIANTS
9745565	United States of America	14/506456	03-Oct-2014	20150265686	24-Sep-2015	29-Aug-2017	12-Sep-2033	Granted	TREATMENT OF GLUTEN INTOLERANCE AND RELATED CONDITIONS
9623092	United States of America	13/912077	06-Jun-2013	20140140980	22-May-2014	18-Apr-2017	06-Jun-2033	Granted	TREATMENT OF GLUTEN INTOLERANCE AND RELATED CONDITIONS
9005610	United States of America	13/843369	15-Mar-2013	20140186330	03-Jul-2014	14-Apr-2015	15-Mar-2033	Granted	TREATMENT OF GLUTEN INTOLERANCE AND RELATED CONDITIONS
10266818	United States of America	15/209681	13-Jul-2016	20170067040	09-Mar-2017	23-Apr-2019	15-Mar-2033	Granted	TREATMENT OF GLUTEN INTOLERANCE AND RELATED CONDITIONS
10982201	United States of America	16/357191	18-Mar-2019	20200040322	06-Feb-2020	20-Apr-2021	15-Mar-2033	Granted	TREATMENT OF GLUTEN INTOLERANCE AND RELATED CONDITIONS
11725198	United States of America	17/209879	23-Mar-2021	2021230569	29-Jul-2021	15-Aug-2023	13-May-2033	Granted	TREATMENT OF GLUTEN INTOLERANCE AND RELATED CONDITIONS
10960059	United States of America	15/906972	27-Feb-2018	20190022194	24-Jan-2019	30-Mar-2021	16-Jun-2035	Granted	COMPOSITIONS AND METHODS FOR TREATING GLUTEN INTOLERANCE AND DISORDERS ARISING THEREFROM
	United States of America	17/181924	22-Feb-2021	20210220451	22-Jul-2021	15-Aug-2023	05-Dec-2035	Granted	COMPOSITIONS AND METHODS FOR TREATING GLUTEN INTOLERANCE AND DISORDERS ARISING THEREFROM
	United States of America	15/382560	16-Dec-2016	20170232077	17-Aug-2017	08-Dec-2020	19-Aug-2038	Granted	COMPOSITIONS AND METHODS FOR TREATING GLUTEN INTOLERANCE AND DISORDERS ARISING THEREFROM
	United States of America	17/102290	23-Nov-2020	20210093699	01-Apr-2021	18-Jul-2023	15-Sep-2037	Granted	COMPOSITIONS AND METHODS FOR TREATING GLUTEN INTOLERANCE AND DISORDERS ARISING THEREFROM
	United States of America	18/485,855	12-Oct-2023					Pending	ENGINEERED TERMINAL DEOXYNUCLEOTIDYL TRANSFERASE VARIANTS
	United States of America	63/499,770	03-May-2023				03-May-2024	Pending	ENGINEERED TERMINAL DEOXYNUCLEOTIDYL TRANSFERASE VARIANTS
	United States of America	18/485,925	12-Oct-2023					Pending	ENGINEERED 3'-KINASE VARIANTS AND METHODS OF USE
	United States of America	63/589,818	12-Oct-2023				12-Oct-2024	Pending	ENGINEERED ADENOSINE KINASE VARIANTS



7226768	United States of America	10/201213	22-Jul-2002	20030100744	29-May-2003	05-Jun-2007	19-Nov-2023	Granted	CYTOCHROME P450 OXYGENASES	California Institute of Technology
7524664	United States of America	10/869825	15-Jun-2004	20050059128	17-Mar-2005	28-Apr-2009	30-Apr-2025	Granted	REGIO-AND ENANTIO-SELECTIVE ALKANE HYDROXYLATION WITH MODIFIED CYTOCHROMES P450	California Institute of Technology
7863030	United States of America	12/424454	15-Apr-2009	20090298148	03-Dec-2009	04-Jan-2011	15-Jun-2024	Granted	REGIO-AND ENANTIO-SELECTIVE ALKANE HYDROXYLATION WITH MODIFIED CYTOCHROMES P450	California Institute of Technology
8343744	United States of America	12/983841	03-Jan-2011	20110244537	06-Oct-2011	01-Jan-2013	15-Jun-2024	Granted	REGIO-AND ENANTIO-SELECTIVE ALKANE HYDROXYLATION WITH MODIFIED CYTOCHROMES P450	California Institute of Technology
8741616	United States of America	13/673977	09-Nov-2012	20130273626	17-Oct-2013	03-Jun-2014	15-Jun-2024	Granted	REGIO-AND ENANTIO-SELECTIVE ALKANE HYDROXYLATION WITH MODIFIED CYTOCHROMES P450	California Institute of Technology
9145549	United States of America	14/293465	02-Jun-2014	20150010976	08-Jan-2015	29-Sep-2015	15-Jun-2024	Granted	ALKANE HYDROXYLATION WITH MODIFIED CYTOCHROMES P450	California Institute of Technology
7435570	United States of America	10/916369	11-Aug-2004	20050037411	17-Feb-2005	14-Oct-2008	19-Aug-2025	Granted	THERMOSTABLE PEROXIDE-DRIVEN CYTOCHROME P450 OXYGENASE VARIANTS	California Institute of Technology
8715988	United States of America	11/697404	06-Apr-2007	20080057577	06-Mar-2008	06-May-2014	21-Dec-2028	Granted	ALKANE OXIDATION BY MODIFIED HYDROXYLASES	California Institute of Technology
9074178	United States of America	14/270268	05-May-2014	20150004668	01-Jan-2015	07-Jul-2015	28-Mar-2026	Granted	ALKANE OXIDATION BY MODIFIED HYDROXYLASES	California Institute of Technology
9404096	United States of America	14/788365	30-Jun-2015	20160024482	28-Jan-2016	02-Aug-2016	28-Mar-2026	Granted	ALKANE OXIDATION BY MODIFIED HYDROXYLASES	California Institute of Technology
9963720	United States of America	15/224900	01-Aug-2016	20170183689	29-Jun-2017	08-May-2018	28-Mar-2026	Granted	ALKANE OXIDATION BY MODIFIED HYDROXYLASES	California Institute of Technology
10648006	United States of America	15/942001	30-Mar-2018	20180273983	27-Sep-2018	12-May-2020	28-Mar-2026	Granted	ALKANE OXIDATION BY MODIFIED HYDROXYLASES	California Institute of Technology
11214817	United States of America	16/872275	11-May-2020	20200399662	24-Dec-2020	04-Jan-2022	28-Mar-2026	Granted	ALKANE OXIDATION BY MODIFIED HYDROXYLASES	California Institute of Technology
8026085	United States of America	11/890218	23-Dec-2021	20220112524	14-Apr-2022			Published	ALKANE OXIDATION BY MODIFIED HYDROXYLASES	California Institute of Technology
8252559	United States of America	12/365884	04-Feb-2009	20090209010	05-Mar-2009	27-Sep-2011	02-Feb-2029	Granted	METHODS AND SYSTEMS FOR SELECTIVE FLUORINATION OF ORGANIC MOLECULES	California Institute of Technology
8211664	United States of America	12/227671	24-Nov-2008	20090191602	30-Jul-2009	03-Jul-2012	28-Jul-2029	Granted	METHODS AND SYSTEMS FOR SELECTIVE FLUORINATION OF ORGANIC MOLECULES	California Institute of Technology
8951754	United States of America	13/540188	02-Jul-2012	20120315680	13-Dec-2012	10-Feb-2015	24-May-2027	Granted	METHODS AND MATERIALS FOR MAKING SIMVASTATIN AND RELATED COMPOUNDS	The Regents of the University of California
9970037	United States of America	14/599100	16-Jan-2015	20150203884	23-Jul-2015	15-May-2018	02-Sep-2027	Granted	METHODS AND MATERIALS FOR MAKING SIMVASTATIN AND RELATED COMPOUNDS	The Regents of the University of California
10793884	United States of America	15/971738	04-May-2018	20180355391	13-Dec-2018	06-Oct-2020	18-Jun-2027	Granted	METHODS AND MATERIALS FOR MAKING SIMVASTATIN AND RELATED COMPOUNDS	The Regents of the University of California

8981056	United States of America 13/499356	30-Mar-2012	20120190038	26-Jul-2012	17-Mar-2015	08-Oct-2030	Granted	LOYD MUTANTS EXHIBITING IMPROVED PROPERTIES TOWARDS SIMVASTATIN SYNTHESIS	The Regents of the University of California
9499803	United States of America 14/615792	06-Feb-2015	20150218531	06-Aug-2015	22-Nov-2016	08-Oct-2030	Granted	VARIANT LOVD POLYPEPTIDE	The Regents of the University of California
10246889	United States of America 15/296844	18-Oct-2016	20170029790	02-Feb-2017	02-Apr-2019	08-Oct-2030	Granted	VARIANT LOVD POLYPEPTIDE	The Regents of the University of California
10689628	United States of America 16/277921	15-Feb-2019	20190169580	06-Jun-2019	23-Jun-2020	08-Oct-2030	Granted	VARIANT LOVD POLYPEPTIDE	The Regents of the University of California

*Indicates Codexis
Mayflower case --
awaiting assignment
recordation confirmation
from relevant patent
office.

EXHIBIT C

Trademarks

<u>Description</u>	<u>Serial/Registration No.</u>	<u>File Date</u>
ECO SYNTHESIS	98198117	9/26/2023
ATOMS	88954925	6/9/2020
CODEEVOLVER	85271911	3/21/2011
CODEEVOLVER	85230914	2/1/2011
MOSAIC	88957280	6/10/2020
RIPTIDE	88957577	6/10/2020
STRATEGIST	88957585	6/10/2020
UNLOCK THE POWER OF PROTEINS	87599778	9/7/2017
	76679500	7/12/2007
APS	88952685	6/8/2020
HARVESTER	88957277	6/10/2020
SAGE	86398607	9/18/2014
ANALOGENE	88952693	6/8/2020
ECORNA	98198083	9/26/2023
MOSAIC	85945921	5/30/2013
MICROCYP	86069388	9/19/2013
CODEX	77371744	1/15/2008
CODEXIS	87706489	12/4/2017
	87706494	12/4/2017
PROSAR	87309996	1/23/2017
MCYP	86398596	9/18/2014
AMELI	88952692	6/8/2020
CONTINUITY	88954930	6/9/2020
FORAGER	88954933	6/9/2020
CODEXIS	76362246	1/24/2002