# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT6197335

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

## **CONVEYING PARTY DATA**

Name	Execution Date
TOCAGEN INC.	06/15/2020

# **RECEIVING PARTY DATA**

Name:	DENOVO BIOPHARMA LLC
Street Address:	10240 SCIENCE CENTER DRIVE
Internal Address:	SUITE 120
City:	SAN DIEGO
State/Country:	CALIFORNIA
Postal Code:	92121

## **PROPERTY NUMBERS Total: 18**

Property Type	Number
Patent Number:	9320738
Patent Number:	9889133
Patent Number:	10449194
Patent Number:	8722867
Patent Number:	10035983
Patent Number:	9732326
Patent Number:	10407666
Application Number:	16044472
Application Number:	16560525
Patent Number:	10316333
Application Number:	16431626
Patent Number:	9669049
Application Number:	15611722
Application Number:	14438564
Patent Number:	9642921
Application Number:	15127388
Application Number:	15757292
PCT Number:	US1961297

PATENT REEL: 053192 FRAME: 0140

506150603

#### **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:** 4156835472

**Email:** eofficeaction@appcoll.com

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Address Line 2: SUITE 400

Address Line 4: SAN FRANCISCO, CALIFORNIA 94111

ATTORNEY DOCKET NUMBER:	4594-2800100
NAME OF SUBMITTER:	PENG CHEN
SIGNATURE:	/Peng Chen/
DATE SIGNED:	07/13/2020

#### **Total Attachments: 19**

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source=4594-2800100 - Patent Assignment Agreement - FULLY EXECUTED#page1.tif
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#### PATENT ASSIGNMENT

THIS PATENT ASSIGNMENT (this "Assignment") is made, entered into and effective as of June 15, 2020 ("the "Effective Date"), by Denovo Biopharma LLC, a Delaware limited liability company ("Assignee"), and Tocagen Inc., a Delaware corporation ("Assignor"). All capitalized terms used herein and not otherwise defined shall have the meaning ascribed to such terms in that certain Asset Purchase Agreement, dated April 17, 2020 (as amended, the "Purchase Agreement"), by and among the Assignor, the Assignee and the other parties signatory thereto.

#### **RECITALS:**

WHEREAS, pursuant to the Purchase Agreement, the Assignor has agreed to assign to the Assignee all of Assignor's right, title and interest in the patents and patent applications set forth in Schedule 1 attached hereto, which includes letters patent and patent applications and all reissues thereof and reexamination certificates therefore, and the inventions disclosed therein (the "Assigned Assets");

WHEREAS, the Assignor has agreed to execute this Assignment to enable the Assignee to record the assignment of, all of the Assignor's right, title and interest in and to the Assigned Assets, the associated registration and renewals, all goodwill associated therewith, and all other rights, including the right to sue and recover (for the sole use and benefit of the Assignee and its successors, assigns or other legal representatives) damages for past, present and future infringement, misappropriation, dilution or other violation or damage, if any, in each case free and clear of all mortgages, pledges, ownership interests, security interests, liens, reservations and contract rights of third parties, if any, in the Assigned Assets throughout the world (the "**Related Rights**").

NOW, THEREFORE, in consideration of the foregoing and the respective representations, warranties, covenants, agreements and conditions set forth herein, and other good and valuable consideration, the receipt and sufficiency of which are acknowledged, and intending to be legally bound, each party agrees as follows:

- 1. <u>Assignment.</u> Assignor has agreed to and does hereby sell, assign and transfer unto Assignee, its successors and assigns, all of Assignor's right, title and interest in and throughout the world, in and to the Assigned Assets and Related Rights; and Assignor has further agreed to and does hereby sell, assign and transfer unto Assignee, its successors and assigns, all of Assignor's right, title and interest in and throughout the world in and to said inventions, any other patent applications (including provisional, non-provisional, divisional, continuing, or reissue applications) based in whole or in part on the Assigned Assets in any country which have been or may be granted. The Assignee will hold all right, title and interest in and to the Assigned Assets and Related Rights as fully and exclusively as they would have been held and enjoyed by the Assignor had the assignment in this Section 1 not been made.
- 2. <u>Authorization</u>. The Assignor authorizes and requests the Assignee to request the U.S. Patent and Trademark Office and any other registering body throughout the world (each, a "**Registrar**") to record the Assignee as the assignee of the Assigned Assets. The Assignor shall, promptly upon presentation by the Assignee, execute, or procure the execution of, such transfer documents and provide such information as required by such Registrar. The Assignor covenants that the Assignor has full right to convey all interest in and to the Assigned Assets, and that the Assignor has not executed, and will not execute, any agreements in conflict with this covenant.
- 3. <u>Power of Attorney</u>. Assignor irrevocably designates and appoints Assignee and its duly authorized officers and agents as Assignor's agent and attorney in fact. The appointment is coupled with an interest, to act for and on his behalf to execute, verify and file any such documents and to do all other

lawfully permitted acts to further the purposes of this Agreement with the same legal force and effect as if executed by Assignor. Such rights and authority may be exercised by Assignee if Assignee is unable for any reason, after reasonable effort, to secure Assignor's signature on any document needed in connection with these actions specified.

- 4. <u>Waiver of Rights</u>. Assignor will not assert any rights to any Assigned Assets or Related Rights after the Effective Date of this Agreement.
- 5. <u>Further Assurances</u>. Each party shall, upon the request of the other party, do, execute, acknowledge and deliver or cause to be done, executed, acknowledged and delivered all such further acts, deeds, assignments, transfers, conveyances, powers of attorney and assurances as may be required to carry out the intent of this Assignment.
- 6. <u>Entire Agreement</u>. This Assignment and the Purchase Agreement (including the other schedules and exhibits to the Purchase Agreement) contain the entire agreement of the parties with regard to the subject matter; provided, however, that this provision is not intended to abrogate any other written agreement between the parties executed with or after this Assignment.
- 7. <u>Successors and Assigns</u>. This Assignment shall be binding upon each party and its respective successors and assigns.
- 8. <u>Governing Law</u>. The parties specifically agree that this Assignment shall in all respects be interpreted, read construed and governed by the internal Laws of the State of Delaware, exclusive of its conflicts of law rules.
- 9. <u>Counterparts</u>. This Agreement may be executed in counterparts, each of which will be deemed an original, and all of which together will constitute one and the same instrument. This Agreement, and any amendments, to the extent signed and delivered by means of facsimile transmission or as an attachment to an electronic mail message in "PDF" or similar format, shall be treated in all manner and respects as an original agreement or instrument and shall have the same binding legal effect as if it were the original signed version delivered in person.

\*\*\*\*\*\*

Signatures on following page.

2

IN WITNESS WHEREOF, the parties hereto have caused this Patent Assignment to be duly executed effective as of the date first above written.

ASSIGNOR

Name: Marty J. Duvall

Title: Chief Executive Officer

ASSIGNEE:

DENOVO BIOPHARMA LLC

By: \_\_\_\_ By: \_\_\_\_\_\_Name: Wen Luo

Title: Chief Executive Officer

IN WITNESS WHEREOF, the parties hereto have caused this Patent Assignment to be duly executed effective as of the date first above written.

<u>ASSIGNOR</u> :
TOCAGEN INC.
By:Name: Marty J. Duvall
Title: Chief Executive Officer
<u>ASSIGNEE</u> :
DENOVO BIOPHARMA LLC

Name: Wen Luo

Title: Chief Executive Officer

# SCHEDULE 1

	006KR1	00014-	006JP2	00014-	006JP1	00014-	006IL3	00014-	006IL2	00014-	006IL1	00014-	006HK2	00014-	006EP1	00014-	006CN2	00014-	006CA1	00014-	006BR1	00014-	006AU2	00014-	006AU1	00014-		Ref.	Tocagen
		6/30/2008		6/30/2008		6/30/2008		6/30/2008		6/30/2008		6/30/2008		6/30/2008		6/30/2008		6/30/2008		6/30/2008		6/30/2008		6/30/2008		6/30/2008		Date	Priority
		Tocagen		e	Assigne																								
	uses thereof	Fluorocytosine and			Title																								
		KR		JP		JP		П		IL		IL		HK		EP		CN		CA		BR		AU		AU			Country
10-1813721	7002457	10-2011-	6170896	2014-227208	6092514	2011-516833		255813	246473	246473	209385	209385		17113265.2		09774387.6	X	201710036517.	2,724,740	2,724,740		PI 0915284-9	2013205004	2013205004	2009267052	2009267052		Patent No.	Application/
	12/22/2017	6/30/2009	7/26/2017	6/30/2009	2/17/2017	6/30/2009		6/30/2009	9/29/2018	6/30/2009	2/1/2017	6/30/2009		6/30/2009		6/30/2009		6/30/2009	2/21/2017	6/30/2009		6/30/2009	12/10/2015	6/30/2009	10/24/2013	6/30/2009	Grant Date	or	Filing. Issue
		Granted		Granted		Granted		Pending		Granted		Granted		Pending		Pending		Pending		Granted		Pending		Granted		Granted		2	Status
		6/30/2029		6/30/2029		6/30/2029				6/30/2029		6/30/2029								6/30/2029		N/A		6/30/2029		6/30/2029		Date	Expiration

Tocagen	Priority	Assigne	Title	Country	Application/	Filing, Issue	Status	Expiration
Ref.	Date	e		•	Patent No.	0r		Date
						Grant Date		
00014-	6/30/2008	Tocagen	Fluorocytosine and	KR	10-2017-	6/30/2009	Granted	6/30/2029
006KR2			uses thereof		7036825 10-1950635	2/14/2019		
00014-	6/30/2008	Tocagen	Fluorocytosine and	XM	MX/a/2010/014	6/30/2019	Granted	6/30/2029
006MX1			uses thereof		256 337213	2/17/2016		
00014-	6/30/2008	Tocagen	Fluorocytosine and	XM	MX/a/2016/002	6/30/2019	Granted	6/30/2029
006MX2		(	uses thereof		131	7/12/2019		
00014-	6/30/2008	Тосявен	Fluorocytosine and	SII	13/001 516	3/11/2011	Issued	11/25/2031
006US1		(	uses thereof		9,320,738	4/26/2016		
00014-	6/30/2008	Tocagen	Fluorocytosine and	US	15/136,056	4/22/2016	Issued	11/25/2031
006032			uses thereof		9,889,133	2/13/2018		
00014- 006US3	0/30/2008	Tocagen	uses thereof	S	10,449,194	2/ // 2018	Issued	11/23/2031
00014-	6/30/2008	Tocagen	Fluorocytosine and	US	15/891,243	2/7/2018	Pending	
006US4			uses thereof					
00014-	9/26/2008	Tocagen	Gene Therany	AU	2009303690	9/26/2009	Granted	9/26/2029
007AU1		(	Vectors and Cytosine		2009303690	10/2/2014		
			Deaminases					
00014- 007AU2	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine	AU	2013205006	9/26/2009 6/2/2016	Granted	9/26/2029
			Deaminases					
00014-	9/26/2008	Tocagen	Gene Therapy	BR	PI 0919113-5	9/26/2009	Pending	
COLDINA			Deaminases					
00014-	9/26/2008	Tocagen	Gene Therapy	CA	2,738,472	9/26/2009	Pending	
00701111			Deaminases					

Ref.         Date         e         Patent No.         patent No.         or Grant Date         Date           00014- 007CN1         9/26/2008         Tocagen Vectors and Cytosine Vectors and Cytosine 007CN2         CN         200980147509. EA         1/16/2016         Grant Date         9/26/2009         Grant Cd         9/26/2009         9/26/2009         Granted         9/26/2009         9/26/2009         9/26/2009         Granted         9/26/2009         9/26/2009         9/26/2009         Granted         9/26/2009         9/26/2009         Granted         9/26/2009         9/26/2009         Granted         9/26/2009         9/26/2009         Pending           00014- 007EN1         9/26/2008         Tocagen Peaminases         Gene Therapy Vectors and Cytosine Peaminases         EA         201510505943.         9/26/2009         Pending         9/26/2009         Pending           00014- 007EN1         9/26/2008         Tocagen Peaminases         Gene Therapy Vectors and Cytosine Peaminases         EA         201510524987.         9/26/2009         Pending         9/26/2009         Pending <th>Tocagen</th> <th>Priority</th> <th>Assigne</th> <th>Title</th> <th>Country</th> <th>Application/</th> <th>Filing, Issue</th> <th>Status</th> <th>Expiration</th>	Tocagen	Priority	Assigne	Title	Country	Application/	Filing, Issue	Status	Expiration
9/26/2008   Tocagen   Gene Therapy   CN   200980147509.   6	Ket.	Date	e			Patent No.	or Grant Date		Date
200980147515. 9/26/2009   Granted   EA	00014- 007CN1	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine Deaminases	CN	200980147509. 6 ZL	9/26/2009 11/16/2016	Granted	9/26/2029
9/26/2008   Tocagen   Recombinant Vectors   CN   200980147515.   9/26/2009   Granted   I   2009801475   I   2009801475   I   2009801475   I   2009801475   I   2009801475   I   201510505943.   9/26/2009   Pending   Vectors and Cytosine   Pending   Vectors and Cytosine   Vectors and Cytosine   Pending   Vectors and Cytosine   Pending						6			
9/26/2008   Tocagen   Gene Therapy   CN   201510505943.   9/26/2009   Pending   Vectors and Cytosine   Pocagen   Deaminases   Py26/2008   Tocagen   Gene Therapy   Vectors and Cytosine   Py26/2008   Tocagen   Gene Therapy   Vectors and Cytosine   Py26/2008   Tocagen   Gene Therapy   EA   201170492   9/26/2009   Pending   Py26/2008   Tocagen   Gene Therapy   EA   201790824   9/26/2009   Pending   Py26/2008   Tocagen   Deaminases   EA   201790824   9/26/2009   Pending   Py26/2008   Tocagen   Deaminases   EA   201790824   9/26/2009   Pending	00014- 007CN2	9/26/2008	Tocagen	Recombinant Vectors	CN	200980147515.	9/26/2009 10/21/2015	Granted	9/26/2029
9/26/2008 Tocagen Gene Therapy Vectors and Cytosine 1 9/26/2008 Tocagen Recombinant Vector CN 201510624987. 9/26/2009 Pending 9/26/2008 Tocagen Gene Therapy Vectors and Cytosine 1 9/26/2008 Tocagen Gene Therapy Vectors and Cytosine 2 Poeaminases 2 Poeaminases 4 d in AT, DE, DK, DE, DK, DS, FI, FR, GB, IE, IT, LU, MC, NL, SE).	00/012					ZL2009801475 15.1	10/21/2010		
Deaminases	00014- 007CN3	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine	CN	201510505943. 4	9/26/2009	Pending	
P/26/2008   Tocagen   Gene Therapy   EA   201170492   9/26/2009   Pending				Deaminases					
9/26/2008   Tocagen   Gene Therapy   EA   201170492   9/26/2009   Granted   Vectors and Cytosine   P/26/2008   Tocagen   Gene Therapy   EA   201790824   9/26/2009   Pending   P/26/2008   Tocagen   Gene Therapy   EP   O9820986.9   9/26/2009   Granted   P/26/2008   Tocagen   Deaminases   EP   O9820986.9   9/26/2009   Granted   P/26/2008   Deaminases   BE, CH, DE, DK, ES, FI, FR, GB, IE, IT, LU, MC, NL, SE)   NL, SE)   NL, SE)   NL, SE)	00014- 007CN4	9/26/2008	Tocagen	Recombinant Vector	CN	201510624987. 9	9/26/2009	Pending	
Deaminases	00014- 007F A 1	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine	EA	201170492 027693	9/26/2009 8/31/2017	Granted	9/26/2029
9/26/2008 Tocagen Gene Therapy 2				Deaminases					
Deaminases	00014- 007E A 2	9/26/2008	Tocagen	Gene Therapy	EA	201790824	9/26/2009	Pending	
9/26/2008   Tocagen   Gene Therapy   EP   09820986.9   9/26/2009   Granted   Vectors and Cytosine   d in AT,   BE, CH,   DE, DK,   ES, FI,   FR, GB,   IE, IT,   LU, MC,   NL, SE)   NL, SE)   Moderate   Gene Therapy   Granted   Gene Therapy   Gene Therapy   Gene Therapy   Granted   Gene Therapy   Gene Ther	00/EA2			Vectors and Cytosine Deaminases					
Deaminases  d in AT,  BE, CH,  DE, DK,  ES, FI,  FR, GB,  IE, IT,  LU, MC,  NL, SE)	00014- 007EP1	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine	EP (Validate	09820986.9 2346995	9/26/2009 11/7/2018	Granted	9/26/2029
DE, DK, ES, FI, FR, GB, IE, IT, LU, MC, NL, SE)	,			Deaminases	d in AT, BE, CH,				
ES, FI, FR, GB, IE, IT, LU, MC, NL, SE)					DE, DK,				
FR, GB, IE, IT, LU, MC, NL, SE)					ES, FI,				
IE, IT, LU, MC, NL, SE)					FR, GB,				
NL, SE)					IE, IT,				
					LU, MC,				

Tocagen Ref.	Priority Date	Assigne e	Title	Country	Application/ Patent No.	Filing, Issue or	Status	Expiration Date
						Grant Date		
00014- 007EP2	9/26/2008	Tocagen	Recombinant Vectors	EP (Validate d in FR, DE, IT, ES, GB)	09816967.5 2344648	9/26/2009 11/14/2018	Granted	9/26/2029
00014-	9/26/2008	Tocagen	Gene Therapy	EP	18188075.8	9/26/2009	Pending	
007EP3			Vectors and Cytosine Deaminases					
00014-	9/26/2008	Tocagen	Recombinant Vectors	EP	0.0286181	9/26/2009	Pending	
00014-	9/26/2008	Tocagen	Gene Therapy	ID	W00 2011	9/26/2009	Pending	
007ID1			Vectors and Cytosine Deaminases		01382			
00014-	9/26/2008	Tocagen	Gene Therapy	II	211847	9/26/2009	Granted	9/26/2029
007IL1			Vectors and Cytosine Deaminases		211847	3/1/2017		
00014-	9/26/2008	Tocagen	Gene Therapy	IL	248833	9/26/2009	Granted	9/26/2029
00/11/2			Deaminases		20000	5/1/2017		
00014-	9/26/2008	Tocagen	Gene Therapy	$\Pi$	264214	9/26/2009	Pending	
007IL3			Vectors and Cytosine Deaminases					
00014-	9/26/2008	Tocagen	Gene Therapy	NI	2659/DELNP/2	9/26/2009	Pending	
007IN1			Vectors and Cytosine Deaminases		011			
00014-	9/26/2008	Tocagen	Gene Therapy	JP	2011-529291	9/26/2009	Granted	9/26/2029
007JP1			Vectors and Cytosine Deaminases		5771147	9/30/2016		
00014-	9/26/2008	Tocagen	Recombinant Vectors	JP	2011-529292	9/26/2009	Granted	9/26/2029
00/JF2					3004130	1/23/2013		

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Tocagen Ref.	Priority  Date	Assigne e	Title	Country	Application/ Patent No.	Filing, Issue 0r	Status	Expiration Date
						Grant Date		
00014- 007JP3	9/26/2008	Tocagen	Recombinant Vectors	JP	2015-004923 5992548	9/26/2009 8/26/2016	Granted	9/26/2029
00014- 007JP4	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine Deaminases	JP	2015-097980 6062485	9/26/2009 12/22/2016	Granted	9/26/2029
00014- 007JP5	9/26/2008	Tocagen	Recombinant Vectors	JP	2016-159893 6523224	9/26/2009 5/10/2019	Granted	9/26/2029
00014- 007JP6	9/26/2008	Tocagen	Recombinant Vectors	JP	2019-086133	9/26/2009	Pending	
00014- 007KR1	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine Deaminases	KR	10-2011- 7008744 10-1724162	9/26/2009 3/31/2017	Granted	9/26/2029
00014- 007KR2	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine Deaminases	KR	10-2016- 7016947 10-1870056	9/26/2009 6/15/2018	Granted	9/26/2029
00014- 007KR3	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine Deaminases	KR	10-2018- 7016894 10-2025502	9/26/2009	Granted	9/26/2029
00014- 007MX1	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine Deaminases	MX	MX/a/2011/003 039 332230	9/26/2009 8/7/2015	Granted	9/26/2029
00014- 007MX2	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine Deaminases	MX	MX/a/2015/010 159 357418	9/26/2009 7/9/2018	Granted	9/26/2029
00014- 007MX3	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine Deaminases	MX	MX/a/2018/008 440	9/26/2009	Pending	_
00014- 007 <b>M</b> Y1	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine	MY	PI 2011001328 MY-156333-A	9/26/2009 2/15/2016	Granted	9/26/2029

Tocagen	Priority	Assigne	Title	Country	Application/	Filing, Issue	Status	<b>Expiration</b>
Ref.	Date	e			Patent No.	or Grant Data		Date
			Deaminases					
00014-	9/26/2008	Tocagen	Gene Therapy	ZN	592070	9/26/2009	Granted	9/26/2029
007NZ1		(	Vectors and Cytosine		592070	11/5/2012		
			Deaminases					
00014- 007PH1	9/26/2008	Tocagen	Gene Therapy Vectors and Cytosine	PH	1-2011-500630 1-2011-500630	9/26/2009	Granted	9/26/2029
			Deaminases					
00014-	9/26/2008	Tocagen	Gene Therapy	SG	201102149-0	9/26/2009	Granted	9/26/2029
007SG1			Vectors and Cytosine		169834	6/22/2015		
			Deaminases					
00014-	9/26/2008	Tocagen	Gene Therapy	UA	201105174	9/26/2009	Granted	9/26/2029
007UA1			Vectors and Cytosine		104298	1/27/2014		
			Deaminases					
00014-	9/26/2008	Tocagen	Gene Therapy	US	13/072,705	3/26/2011	Issued	12/4/2031
007US1			Vectors and Cytosine		8,722,867	5/13/2014		
			Deaminases					
00014-	9/26/2008	Tocagen	Gene Therapy	US	14/274,556	5/9/2014	Issued	12/4/2031
007US3			Vectors and Cytosine		10,035,983	7/31/2018		
			Deaminases					
00014-	9/26/2008	Tocagen	Recombinant Vectors	US	14/477,741	9/4/2014	Issued	12/4/2031
007US4					9,732,326	8/15/2017		
00014-	9/26/2008	Tocagen	Recombinant Vectors	US	15/672,029	8/8/2017	Issued	12/4/2031
007US5					10,407,666	9/10/2019		
00014-	9/26/2008	Tocagen	Gene Therapy	US	16/044,472	7/24/2018	Pending	
007US6			Vectors and Cytosine					
			Deaminases					
00014-	9/26/2008	Tocagen	Recombinant Vectors	US	16/560,525	9/4/2019	Pending	
007US7								
00014-	9/26/2008	Tocagen	Gene Therapy	ZA	2011/02115	9/26/2009	Granted	9/26/2029
007ZA1			Vectors and Cytosine		2011/02115	7/25/2012		

Date   Product   Producer Cells For   Competent Retroviral   Compe	3	7	A	7721	7	A 10 1	Tielian Tanana	C1~1~	1
Deaminascs	Ref.	Date	e	TICK	Country	Patent No.	or	DIAIUS	Date
							Grant Date		
6/17/2009   Tocagen   Producer Cells For CA   2,764,107   6/17/2010   Pending Replication   Campetent Retroviral Vectors   Producer Cells For CN   201710168480.   6/17/2010   Pending Replication   Competent Retroviral Vectors   Producer Cells For CN   201710168480.   6/17/2010   Pending Replication   Competent Retroviral Vectors   EP   10790193.6   6/17/2010   Granted Replication   ES, GB, FI, FR, TT, Vectors   ES, CH)   ES, GB, CH)   Competent Retroviral   Gin AT, Vectors   EB, DK, FI, FR, DE, LF, FR,				Deaminases					
6/17/2009   Tocagen   Producer Cells For CA   2.764.107   6/17/2010   Pending Replication   Vectors									
Competent Retroviral   Vectors   Vectors   Vectors   Vectors   Vectors   Vectors   Replication   Competent Retroviral   Vectors   CN   201710168480.   6/17/2010   Pending   Producer Cells For   EP   10790193.6   6/17/2010   Granted	00014- 008CA1	6/17/2009	Tocagen	Producer Cells For Replication	CA	2,764,107	6/17/2010	Pending	
6/17/2009   Tocagen   Producer Cells For   CN   Competent Retroviral   Vectors   EP   10790193.6   6/17/2010   Granted   Competent Retroviral   ES, GB,   E, IT,   Competent Retroviral   ES, SE, CH,   IC/17/2009   Tocagen   Producer Cells For   EP   1019371.0   Granted   G/17/2009   Granted   G/17/2009   Tocagen   Producer Cells For   EP   1019371.0   Granted   G/17/2010   Granted   G/17/2009   Granted   G/17/2009   Granted   G/17/2010   G/17/				Competent Retroviral Vectors					
Replication   Competent Retroviral   Vectors   EP   10790193.6   6/17/2010   Granted   Vectors   EP   10790193.6   6/17/2010   Granted   Competent Retroviral   d in AT,   Vectors   BE, DE, DK, FI, FR, NL, ES, GB,   IE, IT,   ES, CH)   SE, CH)   Froducer Cells For   EP   101371.0   Granted   G/17/2009   Granted   Granted   G/17/2009   G/	00014-	6/17/2009	Tocagen	Producer Cells For	CN	201710168480.	6/17/2010	Pending	
Mathematical Producer Cells For   EP   10790193.6   6/17/2010   Granted	008CN2		,	Replication Competent Retroviral		6			
Replication	00014-	6/17/2009	Tocagen	Producer Cells For	EP	10790193.6	6/17/2010	Granted	6/17/2030
Competent Retroviral   d in AT,   BE, DE,   DK, FI,   FR, NL,   ES, GB,     ES, GB,	008EP1		•	Replication	(Validate	2443242	10/26/2016		
FR, NL,   ES, GB,   E, IT,     SE, CH)				Competent Retroviral	d in AT,				
FR, NL,   ES, GB,				ACCIOIS	DK, FI,				
E, IT,   SE, CH   Competent Retroviral   d in AT, Vectors   FI, FR, DE, IE, IT, LU, MC, NL, ES, SE, CH, GB   Froducer Cells For   EP   19156480.6   6/17/2010   Pending   Producer Cells For   EP   19156480.6   6/17/2010   Pending   Producer Cells For   SE, CH, CB   CH, CB					FR, NL, ES, GB,				
6/17/2009 Tocagen Producer Cells For EP 16191371.0 6/17/2010 Granted Replication (Validate 3159415 3/13/2019  Competent Retroviral d in AT, PI, FR, DE, IE, IT, LU, MC, NL, ES, SE, CH, GB)  6/17/2009 Tocagen Producer Cells For EP 19156480.6 6/17/2010 Pending					IE, IT, SE, CH)				
Competent Retroviral d in AT, Vectors BE, DK, FI, FR, DE, IE, IT, LU, MC, NL, ES, SE, CH, GB) 6/17/2009 Tocagen Producer Cells For EP 19156480.6 6/17/2010	00014- 008EP2	6/17/2009	Tocagen	Producer Cells For Replication	EP (Validate	16191371.0 3159415	6/17/2010 3/13/2019	Granted	6/17/2030
Vectors  BE, DK, FI, FR, DE, IE, IT, LU, MC, NL, ES, SE, CH, GB)  6/17/2009  Tocagen  Producer Cells For EP  19156480.6  6/17/2010				Competent Retroviral	d in AT,				
DE, IE, IT, LU, MC, NL, ES, SE, CH, GB) 6/17/2009 Tocagen Producer Cells For EP 19156480.6 6/17/2010				Vectors	BE, DK, FI. FR.				
HT, LU, MC, NL, ES, SE, CH, GB) 6/17/2009 Tocagen Producer Cells For EP 19156480.6 6/17/2010					DE, IE,				
MC, NL, ES, SE, CH, GB) 6/17/2009 Tocagen Producer Cells For EP 19156480.6 6/17/2010					IT, LU,				
ES, SE, CH, GB)  6/17/2009 Tocagen Producer Cells For EP 19156480.6 6/17/2010					MC, NL,				
6/17/2009 Tocagen Producer Cells For EP 19156480.6 6/17/2010					ES, SE,				
	00014-	6/17/2009	Tocagen	Producer Cells For	EP	19156480.6	6/17/2010	Pending	

Tocagen	Priority	Assigne	Title	Country	Application/	Filing. Issue	Status	Expiration
Ref.	Date	e		,	Patent No.	or Grant Date		Date
008EP3			Replication					
			Competent Retroviral Vectors					
00014-	6/17/2009	Tocagen	Producer Cells For	HK	18100049.1	6/17/2010	Pending	
008HK2			Replication				,	
			Competent Retroviral					
			Vectors					
00014-	6/17/2009	Tocagen	Producer Cells For	IL	216799	6/17/2010	Granted	6/17/2030
008IL1			Replication		216799	12/29/2017		
			Competent Retroviral					
			Vectors	1			1	
00014-	6/17/2009	Tocagen	Producer Cells For	L	254118	6/17/2010	Granted	6/17/2030
0001102			Competent Retroviral		£0+110	10/1/2017		
			Vectors					
00014-	6/17/2009	Tocagen	Producer Cells For	IN	10014/DELNP/	6/17/2010	Granted	6/17/2030
008IN1			Replication		2011	11/27/2019		
			Competent Retroviral		325978			
00014-	6/17/2009	Tocagen	Producer Cells For	JP	2012-516300	6/17/2010	Granted	6/17/2030
008JP1			Replication		5923037	4/22/2016		
			Competent Retroviral Vectors					
00014-	6/17/2009	Tocagen	Producer Cells For	JP	2015-251391	6/17/2010	Granted	6/17/2030
008JP2			Replication		6335869	5/11/2018		
			Vectors					
00014-	6/17/2009	Tocagen	Producer Cells For	JP	2018-087936	6/17/2010	Granted	6/17/2030
008JP3			Replication		6609663	11/1/2019		
			Competent Retroviral					

00014- 6/17/2009 T 008SG1 6/17/2009 T 00014- 6/17/2009 T 008US1 6/17/2009 T 00014- 6/17/2009 T 00014- 3/29/2010 T 00014- 3/29/2010 T 00014- 3/29/2010 T	Assigne	Title	Country	Application/	Filing, Issue	Status	Expiration
6/17/2009 6/17/2009 6/17/2009 6/17/2009 3/29/2010 3/29/2010	e 			Patent No.	or Grant Date		Date
6/17/2009 6/17/2009 6/17/2009 6/17/2009 3/29/2010 3/29/2010		Vectors					
6/17/2009 6/17/2009 6/17/2009 3/29/2010	Tocagen	Producer Cells For	SG	201109341-6	6/17/2010	Granted	6/17/2030
6/17/2009 6/17/2009 6/17/2009 3/29/2010 3/29/2010		Replication		176890	4/26/2017		
6/17/2009 6/17/2009 6/17/2009 3/29/2010 3/29/2010		Competent Retroviral					
6/17/2009 6/17/2009 6/17/2009 3/29/2010 3/29/2010		Vectors					
6/17/2009 6/17/2009 3/29/2010 3/29/2010	Tocagen	Producer Cells For	SG	10201701942V	6/17/2010	Pending	
6/17/2009 6/17/2009 3/29/2010 3/29/2010		Replication					
6/17/2009 6/17/2009 3/29/2010 3/29/2010		Competent Retroviral					
6/17/2009 6/17/2009 3/29/2010 3/29/2010	+	vectors		2000		-	711202
6/17/2009 3/29/2010 3/29/2010	Tocagen	Producer Cells For	S	13/376,827	12/7/2011	Issued	6/12/2032
3 6/17/2009 1 3/29/2010 1 3/29/2010		Replication		10,316,333	6/11/2019		
3 6/17/2009 1 3/29/2010 1 3/29/2010		Competent Retroviral					
3 6/17/2009 3 3/29/2010 1 3/29/2010		Vectors					
3/29/2010	Tocagen	Producer Cells For	US	16/431,626	6/4/2019	Pending	
3/29/2010		Replication					
3/29/2010		Competent Retroviral					
3/29/2010		Vectors					
3/29/2010							
3/29/2010	Tocagen	Recombinant Vectors	EP	11766479.7	3/29/2011	Granted	3/29/2031
3/29/2010		with Multiplicity of	(Validate	2547353	3/6/2019		
3/29/2010		Infection	d in FR,				
3/29/2010		Cancer Treatment	DE, GB)				
3/29/2010		Vector					
(	Tocagen	Recombinant Vectors	JP	2013-502771	3/29/2011	Granted	3/29/2031
		with Multiplicity of		6014020	9/30/2016		
		Infection					
		Cancer Treatment					
		with Recombinant					
		VI4					

Tocagen Priority Assigne Title Country Application/ Ref. Date e Patent No.		00014-   7/26/2010   Tocagen   Retrovirus Detection   CA   2,803,011   010CA1	00014-       7/26/2010       Tocagen       Retrovirus Detection       EP       14191299.8         010EP2       d in DE,       FR, IT         ES GB)       ES GB)	00014- 010US1         7/26/2010         Tocagen         Retrovirus Detection         US         13/810,403           9,663,834	00014- 10/31/2010 Tocagen Antisera Assays for 013EP1 Humans and Other MLV Related Viruses (Validate 2633321 Mammals DE, IT, ES, GB)	00014- 11/19/2010 Tocagen Enhanced Cancer EP 11837255.6  Treatment and Monitoring Using Recombinant Vectors	00014-         11/19/2010         Tocagen         Enhanced Cancer         US         13/882,487           015US1         Treatment and         9,669,049           Monitoring Using         Recombinant Vectors	00014-
Application/ Filing, Issue Patent No. or Grant Date		CA 2,803,011 7/16/2011	EP 14191299.8 7/16/2011 (validate 2913402 FR, IT ES GB)	US 13/810,403 3/29/2013 9,663,834 5/30/2017	EP 11837226.7 10/28/2011 es (Validate 2633321 12/6/2017 er d in FR, DE, IT, ES, GB)	EP 11837255.6 10/31/2011	US 13/882,487 8/20/2013 9,669,049 6/6/2017	US 15/611,722 6/1/2017
Status	2	Granted	Granted	Issued	Granted	Pending	Issued	Pending
Expiration Date		7/26/2030	7/26/2030	9/14/2033	10/28/2031		11/19/2034	

Tocagen	Priority	Assigne	Title	Country	Application/	Filing. Issue	Status	Expiration
Ref.	Date	e		٠	Patent No.	<b>0r</b>		Date
						Grant Date		
00014- 017CN1	10/25/2012	Tocagen	Retroviral Vector Comprising Mini-	CN	201380067486. 4	10/24/2013	Pending	
00014-	10/25/2012	Tocagen	Retroviral Vector	FP (To	13840830 0	10/24/2013	Pending	
017EP1		Ö	Comprising Mini-	Be	2909324		Ö	
			Promoter Cassette	Validated				
				in AT,				
				BE, CZ,				
				רב בב				
				FI. FR.				
				DE, GB,				
				CB HII				
				IS. IE.				
				IT, LI,				
				LU,				
				NL, NO,				
				PL, PT,				
				ES, SE,				
				SI, SK,				
00014-	10/25/2012	Tocagen	Retroviral Vector	EP	19190376.4	10/24/2013	Pending	
017EP2		,	Comprising Mini-				,	
			Promoter Cassette					
00014-	10/25/2012	Tocagen	Retroviral Vector	JP	2015-539817	10/24/2013	Granted	10/24/2033
017JP1			Comprising Mini-		6419706	10/19/2018		
			Promoter Cassette					
00014-	10/25/2012	Tocagen	Retroviral Vector	JP	2018-128726	10/24/2013	Pending	
017JP2			Comprising Mini-					
			Promoter Cassette	!				
00014-	10/25/2012	Tocagen	Retroviral Vector	US	14/438,564	4/24/2015	Pending	

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Ref.	Date	e		Council	Patent No.	or Grant Date	<b>7</b>	Date
017US1			Comprising Mini- Promoter Cassette					
00014	12/20/2012	7		311	14/127 002	12/20/2012	1,	11112/2021
018001	12/20/2012	Tocagen	Cancer Combination Therapy and Recombinant Vectors	US	9,642,921	12/20/2013 5/9/2017	Issued	11/12/2034
				-				
00014- 020EP1	6/15/2013	Tocagen	Immunosuppressive Components	EP (Validate	3008175	6/15/2014 8/7/2019	Issued	6/15/2034
020EF1			Associated with	d in GB,	30081/3	8/ //2019		
			Retroviral	DE, IT,				
			Replicating Vectors	FR, ES)				
00014- 020JP1	6/15/2013	Tocagen	Immunosuppressive Components	JP	2016-519704	6/15/2014	Pending	
			Associated with					
			Replicating Vectors					
00014- 021CA1	3/26/2014	Tocagen	A Retroviral Non- Replicating Vector	CA	2,943,640	3/25/2015	Pending	
			Having Immune					
			Stimulating Activity					
00014-	3/26/2014	Tocagen	A Retroviral Non-	EP	15769100.7	3/25/2015	Pending	
021EP1			Replicating Vector	(Validate				
			Having Immune	d in DE,				
			Stimulating Activity	ES, FR,				
				GB and IT)				
00014-	3/26/2014	Tocagen	A Retroviral Non-	EP	19219628.5	3/25/2015	Pending	

	Pending	9/1/2016	16842998.3	EP	Recombinant Vectors	Tocagen	9/4/2015	00014-
	c				Comprising 2A Peptide	c		024EA1
	Pending	9/1/2016	201890640	EA	Recombinant Vectors	Tocagen	9/4/2015	00014-
	(		1		Comprising 2A Peptide	(		024CN1
	Pending	9/1/2016	201680050920.	CN	Recombinant Vectors	Tocagen	9/4/2015	00014-
	Pending	9/1/2016	2,996,797	CA	Recombinant Vectors Comprising 2A Peptide	Tocagen	9/4/2015	024CA1
	:		) ) ) ) () 1	}	Peptide	1		)
	rending	9/1/2010	83.8	DN	Comprising 2A	Tocagen	9/4/2013	024BR1
	Dan din a	0/1/2016	מוממוממו	חמ	Danahinant Vicator	700000	01470015	00014
	Pending	9/1/2010	201031/930	AU	Comprising 2A Peptide	Tocagen	9/4/2013	00014- 024AU1
	Dan din a	0/1/0016	2016217026	<b>^ T</b> 7	Danamkinant Wastana	7	011/0015	00014
					Activity			
					Stimulating			
					Having Immune			
	,				Replicating Vector	,		021US1
	Pending	9/19/2016	15/127,388	SU	A Retroviral Non-	Tocagen	3/26/2014	00014-
					Activity			
					Stimulating			
					Having Immune			
					Replicating Vector			021JP1
	Pending	3/25/2015	2016-558674	JP	A Retroviral Non-	Tocagen	3/26/2014	00014-
					Stimulating Activity			
					Having Immune			
					Replicating Vector			021EP2
		Grant Date						
Date		or	Patent No.			e	Date	Ref.
Expiration	Status	Filing, Issue	Application/	Country	Title	Assigne	Priority	Tocagen
								Ĭ

Tocagen	Priority	Assigne	Title	Country	Application/	Filing, Issue	Status	Expiration
Ref.	Date	e			Patent No.	or Grant Date		Date
024EP1			Comprising 2A Peptide					
00014-	9/4/2015	Tocagen	Recombinant Vectors	HK	18110849.2	9/1/2016	Pending	
024HK1			Comprising 2A Peptide					
00014-	9/4/2015	Tocagen	Recombinant Vectors	ID	PID201801899	9/1/2016	Pending	
024ID1			Comprising 2A Peptide					
00014-	9/4/2015	Tocagen	Recombinant Vectors	IL	257819	9/1/2016	Pending	
024IL1			Comprising 2A Peptide					
00014-	9/4/2015	Tocagen	Recombinant Vectors	IN	201817009419	9/1/2016	Pending	
024IN1			Comprising 2A Peptide					
00014-	9/4/2015	Tocagen	Recombinant Vectors	JP	2018-511704	9/1/2016	Pending	
024JP1			Comprising 2A Peptide					
00014-	9/4/2015	Tocagen	Recombinant Vectors	KR	10-2018-	9/1/2016	Pending	
024KR1			Comprising 2A Peptide		7008093			
00014-	9/4/2015	Tocagen	Recombinant Vectors	XW	MX/a/2018/002	9/1/2016	Pending	
024MX1			Comprising 2A Peptide		744			
00014-	9/4/2015	Tocagen	Recombinant Vectors	MΥ	PI 2018000315	9/1/2016	Pending	
024MY1			Comprising 2A Peptide					
00014-	9/4/2015	Tocagen	Recombinant Vectors	ZN	739939	9/1/2016	Pending	
024NZ1			Comprising 2A Peptide					
00014-	9/4/2015	Tocagen	Recombinant Vectors	PH	1-2018-500477	9/1/2016	Pending	

Tocagen	Priority	Assigne	Title	Country	Application/	Filing, Issue	Status	Expiration
Kel.	Date	e			ratent No.	Grant Date		Date
024PH1			Comprising 2A					
			Peptide					
00014-	9/4/2015	Tocagen	Recombinant Vectors	SG	11201801731S	9/1/2016	Pending	
024SG1			Comprising 2A					
			Peptide					
00014-	9/4/2015	Tocagen	Recombinant Vectors	UA	2018 03568	9/1/2016	Pending	
024UA1			Comprising 2A					
	0110017	3	i opade	110	1 = 11 = 1 = 2 = 2	2000	:	
00014-	9/4/2015	Tocagen	Recombinant Vectors	$\cup S$	15/757,292	3/2/2018	Pending	
024US1			Comprising 2A  Pentide					
00014-	9/4/2015	Tocagen	Recombinant Vectors	ZA	2018/01140	9/1/2016	Pending	
024ZA1			Comprising 2A					
			Peptide					
00014-	9/4/2015	Tocagen	Recombinant Vectors	ZA	2019/00878	9/1/2016	Pending	
024ZA2			Comprising 2A					
			Peptide					
00014-	11/13/2018	Tocagen	Recombinant Vectors	OW	PCT/US19/612	11/13/2019	Pending	
034WO1			Comprising Secretory		97			
			Signal Domain					

**RECORDED: 07/13/2020**