

## TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

Assignment ID: TM1208927

<b>SUBMISSION TYPE:</b>	RESUBMISSION		
<b>NATURE OF CONVEYANCE:</b>	SECURITY INTEREST		
<b>RESUBMIT DOCUMENT ID:</b>	900851449		
<b>CONVEYING PARTY DATA</b>			
<b>Name</b>	<b>Formerly</b>	<b>Execution Date</b>	<b>Entity Type</b>
Karius, Inc.		04/25/2024	Corporation: DELAWARE
<b>RECEIVING PARTY DATA</b>			
<b>Company Name:</b>	OXFORD FINANCE LLC		
<b>Street Address:</b>	115 SOUTH UNION STREET		
<b>Internal Address:</b>	Suite 300		
<b>City:</b>	ALEXANDRIA		
<b>State/Country:</b>	VIRGINIA		
<b>Postal Code:</b>	22314		
<b>Entity Type:</b>	Limited Liability Company: DELAWARE		
<b>PROPERTY NUMBERS Total: 7</b>			
<b>Property Type</b>	<b>Number</b>	<b>Word Mark</b>	
<b>Serial Number:</b>	88396938	CLARITY AT SPEED	
<b>Serial Number:</b>	97365532	K	
<b>Serial Number:</b>	88669381	KARIUS	
<b>Serial Number:</b>	88669462	KARIUS	
<b>Serial Number:</b>	87074298	KARIUS	
<b>Serial Number:</b>	90222212	KARIUS TEST	
<b>Serial Number:</b>	97247153	KARIUS TEST	
<b>CORRESPONDENCE DATA</b>			
<b>Fax Number:</b>	7137547550		
<i>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.</i>			
<b>Phone:</b>	7133743550		
<b>Email:</b>	sheffieldl@gtlaw.com		
<b>Correspondent Name:</b>	Mrs. Lucresha M. Sheffield Paralegal		
<b>Address Line 1:</b>	1000 Louisiana Street		
<b>Address Line 2:</b>	Suite 6700		
<b>Address Line 4:</b>	Houston, TEXAS 77002		
<b>ATTORNEY DOCKET NUMBER:</b>	138179.016800		

<b>NAME OF SUBMITTER:</b>	LUCRESHA SHEFFIELD
<b>SIGNATURE:</b>	LUCRESHA SHEFFIELD
<b>DATE SIGNED:</b>	05/03/2024
<b>Total Attachments: 16</b> source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page1.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page2.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page3.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page4.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page5.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page6.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page7.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page8.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page9.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page10.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page11.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page12.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page13.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page14.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page15.tif source=Oxford Finance - Karius IP Security Agreement Executed 04-25-24#page16.tif	

## INTELLECTUAL PROPERTY SECURITY AGREEMENT

This Intellectual Property Security Agreement is entered into as of April 25, 2024 by and between OXFORD FINANCE LLC, a Delaware limited liability company with an office located at 115 South Union Street, Suite 300, Alexandria, Virginia 22314 (“**Oxford**”), as collateral agent (in such capacity, “**Collateral Agent**”), the Lenders listed on Schedule 1.1 of the Loan Agreement (as defined below) or otherwise a party thereto from time to time including Oxford in its capacity as a Lender (each a “**Lender**” and collectively, the “**Lenders**”), and Karius, 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 Amended and Restated 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 Collateral (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.

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 Intellectual Property Security 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.

*[Balance of Page Intentionally Left Blank]*

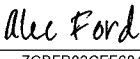
IN WITNESS WHEREOF, the parties have caused this Intellectual Property Security Agreement to be duly executed by its officers thereunto duly authorized as of the first date written above.

GRANTOR:

Address of Grantor:

975 Island Drive  
Redwood City, CA 94065  
Attn: Bill Quirk, Chief Financial Officer

KARIUS, INC.

DocuSigned by:  
  
By: \_\_\_\_\_  
Name: Alexander Ford  
Title: Chief Executive Officer

COLLATERAL AGENT:

Address of Lender:

115 South Union Street  
Suite 300  
Alexandria, VA 22314

OXFORD FINANCE LLC

By: \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

*[Signature Page to Intellectual Property Security Agreement]*

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

GRANTOR:

Address of Grantor:

KARIUS, INC.

Attn: \_\_\_\_\_

By: \_\_\_\_\_

Name:

Title: \_\_\_\_\_

Address of Lender:

115 South Union Street  
Suite 300  
Alexandria, VA 22314

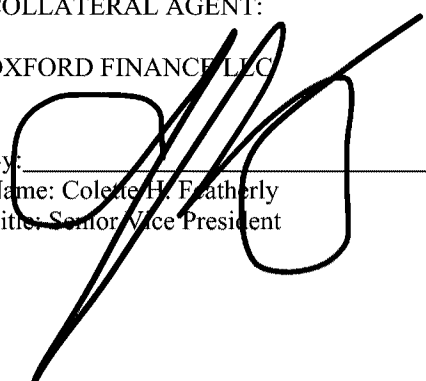
COLLATERAL AGENT:

OXFORD FINANCE LLC

By: \_\_\_\_\_

Name: Colette H. Featherly

Title: Senior Vice President



*[Signature Page to Intellectual Property Security Agreement]*

**TRADEMARK**  
**REEL: 008419 FRAME: 0577**

EXHIBIT A

Copyrights

None.

EXHIBIT B

Patents

[see attached]

Family Number	Case Number	Country	Application Number	Filing Date	Publication Number	Publication Date	Patent Number	Issue Date	Status	Owner	Inventors	Executed Assignment?	License status	Title
703	47697-703.101	US	621901114	07-Nov-2013					Expired	UNIV/LELAND STANFORD JUNIOR	QUAKE, Stephen R	Yes	Exclusively licensed to Kartus	METHOD OF USING CELL-FREE NUCLEIC ACID TO ASSESS MICROBIOME
703	47697-703.102	US	621901857	08-Nov-2013					Expired	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KHUSH, Kieran K.; QUAKE, Stephen R.; VALANTINE, Hannah	Yes	Exclusively licensed to Kartus	MEASUREMENTS OF THE HUMAN VIROME ENABLE PREDICTING IMMUNOCOMPETENCE
703	47697-703.201	US	146536300	07-Nov-2014	2015-0313391	14-May-2015	10450620	22-Oct-2019	ISSUED	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	Yes	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENT THEREOF
703	47697-703.301	US	16554236	28-Aug-2019	US-2020-0017926-A1	16-Jan-2020			Published	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	Yes	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENT THEREOF
703	47697-703.302	US	17347138	14-Jun-2021	US2021-0310084A1	07-Oct-2021	11365453	21-Jun-2022	ISSUED	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	Yes	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENT THEREOF
703	47697-703.303	US	17347180	14-Jun-2021	US2021-0310085A1	07-Oct-2021	11401562	02-Aug-2022	ISSUED	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	Yes	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENT THEREOF
703	47697-703.304	US	17347247	14-Jun-2021	US2021-0301356A1	30-Sep-2021	11427876	30-Aug-2022	ISSUED	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	Yes	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENT THEREOF
703	47697-703.305	US	18137350	20-Apr-2023					Pending	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	Yes	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENT THEREOF
703	47697-703.601	WO	PCT/US2014/064466	07-Nov-2014	2015/070086	14-May-2015			30 Months Expired	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	Yes	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703.611	EP	14860535.5	07-Nov-2014	3066236	14-Sep-2016	3066236	24-Aug-2022	Granted	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703.611	EP	22185212.2	07-Nov-2014	4130350	08-Feb-2023			Published	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703.621	DE	14860535.5	07-Nov-2014	3066236	14-Sep-2016	3066236	24-Aug-2022	Granted	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703.631	FR	14860535.5	07-Nov-2014	3066236	14-Sep-2016	3066236	24-Aug-2022	Granted	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703.642	GB	14860535.5	07-Nov-2014	3066236	14-Sep-2016	3066236	24-Aug-2022	Granted	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703.681	AU	2014346562	07-Nov-2014			2014346562	14-Mar-2019	Granted	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703.701	CA	2929557	07-Nov-2014	2929557	14-May-2015	2929557	26-Sep-2023	Granted	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703.711	CN	201460068555.8	07-Nov-2014	105829589	03-Aug-2016	ZL20148006855.8	02-Feb-2021	Granted	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703.711	CN	202110126389.8	07-Nov-2021	112877472	01-Jun-2021			Published	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703.731	IL	245446	07-Nov-2014					Granted	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwijn; KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kartus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF

TRADEMARK

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703	47697-703,7311 IL	2727174	07-Nov-2014	30-Nov-2020	2727174	01-Mar-2021	Granted	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703,7312 IL	2783449	07-Nov-2014	30-Sep-2021	2783449	31-Dec-2021	Granted	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703,7313 IL	2865106	07-Nov-2014	01-Sep-2022	2865106	02-Dec-2022	Granted	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703,761 JP	2016-528200	07-Nov-2014	2017-500015	05-Jan-2017		Allowed	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703,7611 JP	2020-200921	07-Nov-2014				Appealed	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703,7612 JP	2023-035735	07-Nov-2014	2023-071944	23-May-2023		Published	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703,771 KR	10-2016-7013334	07-Nov-2014		10-2205950	15-Jan-2021	Granted	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703,7711 KR	10-2021-7001442	07-Nov-2014	2021000894	25-Jan-2021		Allowed	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703,781 MX	MX/a/2016/005798	07-Nov-2014		383494	11-Jun-2021	Granted	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703,7811 MX	MX/a/2020/004247	07-Nov-2014				Pending	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703,7812 MX	MX/a/2021/006897	07-Nov-2014				Pending	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703,7813 MX	MX/a/2021/006895	07-Nov-2014				Pending	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703,7814 MX	MX/a/2021/006893	07-Nov-2014				Pending	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
703	47697-703,8911 HK	42023071756	07-Nov-2014	40082336	09-Jun-2023		Published	UNIV/LELAND STANFORD JUNIOR	DE VLAMINCK, Iwjfn, KERTESZ, Michael; KHUSH, Kieran K.; KOVARSKY, Mark A.; MARTIN, Lance; QUAKE, Stephen R.; VALANTINE, Hannah	See PCT	Exclusively licensed to Kantus	CELL-FREE NUCLEIC ACIDS FOR THE ANALYSIS OF THE HUMAN MICROBIOME AND COMPONENTS THEREOF
704	47697-704,101 US	62/163273	18-May-2015				Expired	Kantus Inc	BLAUWKAMP, Timothy A.; CHRISTIANS, Yes	Yes	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704,102 US	62/334348	10-May-2016				Expired	Kantus Inc	BLAUWKAMP, Timothy A.; CHRISTIANS, Yes	Yes	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704,201 US	15/157374	17-May-2016	2017-0016048	19-Jan-2017	11111520	ISSUED	Kantus Inc	BLAUWKAMP, Timothy A.; CHRISTIANS, Yes	Yes	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704,301 US	17/390550	30-Jul-2021	US-2022-0154246-A1	19-May-2022		Published	Kantus Inc	BLAUWKAMP, Timothy A.; CHRISTIANS, Yes	Yes	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704,601 WO	PCT/US2016/032393	17-May-2016	2016/187234	24-Nov-2016		Expired	Kantus Inc	BLAUWKAMP, Timothy A.; CHRISTIANS, Yes	Yes	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704,611 EP	16797172	17-May-2016	3298169	28-Mar-2018		Published	Kantus Inc	BLAUWKAMP, Timothy A.; CHRISTIANS, Yes	Yes	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704,701 CA	2986036	17-May-2016	2986036	24-Nov-2016	2986036	Granted	Kantus Inc	BLAUWKAMP, Timothy A.; CHRISTIANS, Yes	Yes	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704,711 CN	201680042387.4	17-May-2016	107922971	17-Apr-2018		Published	Kantus Inc	BLAUWKAMP, Timothy A.; CHRISTIANS, Yes	Yes	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704,7111 CN						Divisional to be filed	Kantus Inc	BLAUWKAMP, Timothy A.; CHRISTIANS, Yes	Yes	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS

704	47697-704.731	IL	255647	17-May-2016	255647	01-Apr-2022	255647	02-Jul-2022	Granted	Karius Inc	BLAUWKAMP; Timothy A.; CHRISTIANS, Fred; VILFAN, Igor D.; SMITH, Scott	See PCT	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704.741	IN	201717044299	17-May-2016	2017170442	09-Mar-2018	442138	01-Aug-2023	Granted	Karius Inc	BLAUWKAMP; Timothy A.; CHRISTIANS, Fred; VILFAN, Igor D.; SMITH, Scott	See PCT	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704.7411	IN	202118023367	17-May-2016	202118023367	02-Apr-2022			Published	Karius Inc	BLAUWKAMP; Timothy A.; CHRISTIANS, Fred; VILFAN, Igor D.; SMITH, Scott	See PCT	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704.7412	IN	202118023366	17-May-2016	202118023366	02-Apr-2022			Published	Karius Inc	BLAUWKAMP; Timothy A.; CHRISTIANS, Fred; VILFAN, Igor D.; SMITH, Scott	See PCT	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704.761	JP	2017-560813	17-May-2016	2018-520652	02-Aug-2018	6873921	23-Apr-2021	Granted	Karius Inc	BLAUWKAMP; Timothy A.; CHRISTIANS, Fred; VILFAN, Igor D.; SMITH, Scott	See PCT	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704.7611	JP	2021-071794	17-May-2016	2021-112200	05-Aug-2021			Appealed	Karius Inc	BLAUWKAMP; Timothy A.; CHRISTIANS, Fred; VILFAN, Igor D.; SMITH, Scott	See PCT	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704.7612	JP	2023-090282	17-May-2016	2023-110928	09-Aug-2023			Published	Karius Inc	BLAUWKAMP; Timothy A.; CHRISTIANS, Fred; VILFAN, Igor D.; SMITH, Scott	See PCT	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
704	47697-704.891	HK	18111278.0	17-May-2016	1251946A	03-May-2019			Published	Karius Inc	BLAUWKAMP; Timothy A.; CHRISTIANS, Fred; VILFAN, Igor D.; SMITH, Scott	See PCT	None	COMPOSITIONS AND METHODS FOR ENRICHING POPULATIONS OF NUCLEIC ACIDS
705	47697-705.101	US	627313668	25-Mar-2016					Expired Provisional	Karius Inc	CHRISTIANS, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM, Shivkumar; SANDERSON, Gabriel; ROSEN, Michael; KARINOLI, TAMBOUR, Oren; WEBER, Greg; GIBANSKY, Andrew	None	None	SYNTHETIC NUCLEIC ACID SPIKE-INS NORMALIZATION
705	47697-705.102	US	627397873	21-Sep-2016					Expired Provisional	Karius Inc	CHRISTIANS, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM, Shivkumar; SANDERSON, Gabriel; ROSEN, Michael; KARINOLI, TAMBOUR, Oren; WEBER, Greg; GIBANSKY, Andrew	None	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.103	US	62451363	27-Jan-2017					Expired Provisional	Karius Inc	CHRISTIANS, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM, Shivkumar; SANDERSON, Gabriel; ROSEN, Michael; KARINOLI, TAMBOUR, Oren; WEBER, Greg; GIBANSKY, Andrew	None	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.201	US	15469474	24-Mar-2017	2017-0275691	28-Sep-2017	9976181	22-May-2018	ISSUED	Karius Inc	CHRISTIANS, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM, Shivkumar; ROSEN, Michael; SIT, Rene	Yes	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.301	US	15953822	16-Apr-2018	US-2018-0237851-A1	23-Aug-2018	11078532	03-Aug-2021	ISSUED	Karius Inc	CHRISTIANS, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM, Shivkumar; ROSEN, Michael; SIT, Rene	Yes	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.302	US	17355682	23-Jun-2021	US-2021-0324467-A1	21-Oct-2021	11692224	04-Jul-2023	ISSUED	Karius Inc	CHRISTIANS, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM, Shivkumar; ROSEN, Michael; SIT, Rene	Yes	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.303	US	18313716	08-May-2023					Pending	Karius Inc	CHRISTIANS, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM, Shivkumar; ROSEN, Michael; SIT, Rene	Yes	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.601	WO	PCT/US2017/02417	24-Mar-2017	20171169864	28-Sep-2017			30 Months Expired	Karius Inc	CHRISTIANS, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM, Shivkumar; ROSEN, Michael; SIT, Rene	Yes	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.611	EP	17771302.1	24-Mar-2017	3433382	30-Jan-2019	3433382	01-Sep-2021	Granted	Karius Inc	KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM, Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.6112	EP	22199875.0	24-Mar-2017	4198146	21-Jun-2023			Published	Karius Inc	KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM, Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.621	DE	17771302.1	24-Mar-2017	3433382	30-Jan-2019	602017045	01-Sep-2021	Granted	Karius Inc	KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM, Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.631	FR	17771302.1	24-Mar-2017	3433382	30-Jan-2019	3433382	01-Sep-2021	Granted	Karius Inc	KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM, Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS

705	47697-705.641	GB	17771302.1	24-Mar-2017	34933982	30-Jan-2019	34933982	01-Sep-2021	Granted	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.681	AU	20117237199	24-Mar-2017		2011723719	18-Feb-2021	Granted	9	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.681.1	AU	2021200637	24-Mar-2017		2021200637	26-Aug-2021	Granted	7	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.681.2	AU	2021215106	24-Mar-2017				Pending		Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.701	CA	3014070	24-Mar-2017	3014070	28-Sep-2017	3014070	14-Mar-2023	Granted	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.701.1	CA	3185611	24-Mar-2017	3185611	28-Sep-2017			Published	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.711	CN	201780032561.1	24-Mar-2017	109312400	05-Feb-2019			Published	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.711.1	CN	202310458984.9	24-Mar-2017					Pending	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.731	IL	260924	24-Mar-2017		31-Jan-2021	260924	01-May-2021	Granted	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.731.1	IL	278000	24-Mar-2017	278000	01-Apr-2022	278000	02-Jul-2022	Granted	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.761	JP	2019-500764	24-Mar-2017	2019-509068	04-Apr-2019	6743268	31-Jul-2020	Granted	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.761.1	JP	2020-128223	24-Mar-2017	2020-182491	12-Nov-2020	7091397	17-Jun-2022	Granted	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.761.2	JP	2022-097298	24-Mar-2017	2022-120165	17-Aug-2022			Published	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.771	KR	10-2018-7030402	24-Mar-2017		10-2175718	02-Nov-2020	Granted		Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.771.1	KR	10-2020-7031598	24-Mar-2017	10-2020-0128194	11-Nov-2020	10-2326769	10-Nov-2021	Granted	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.771.2	KR	10-2021-7036722	24-Mar-2017	10-2021-0138154	18-Nov-2021	10-2531487	08-May-2023	Granted	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.781.1	MX	MX/a/2021/006911	24-Mar-2017					Pending	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
705	47697-705.781.2	MX	MX/a/2021/006999	24-Mar-2017					Pending	Karius Inc	CHRISTIAN, Fred; VILFAN, Igor D.; KERTESZ, Michael; BLAUWKAMP, Timothy A.; VENKATASUBRAHMANYAM Shivkumar; ROSEN, Michael; SIT, Rene	See PCT	None	SYNTHETIC NUCLEIC ACID SPIKE-INS
707	47697-707.101	US	62/372269	08-Aug-2016					Expired Provisional	Karius Inc	VILFAN, Igor D.; CHRISTIAN, Fred; BLAUWKAMP, Timothy A.; ROSEN, Michael	Yes	None	REDUCTION OF SIGNAL FROM CONTAMINANT NUCLEIC ACIDS
707	47697-707.301	US	16/263074	31-Jan-2019	US-2019-0256991.A1	22-Aug-2019			Published	Karius Inc	VILFAN, Igor D.; CHRISTIAN, Fred; BLAUWKAMP, Timothy A.; ROSEN, Michael	Yes	None	REDUCTION OF SIGNAL FROM CONTAMINANT NUCLEIC ACIDS

707	47697-707.601	WO	PCT/US2017/04578	202018/03	15-Feb-2018	30 Months	Expired	Karius Inc	VILFAN, Igor D.; CHRISTIANS, Fred; BLAUWKAMP, Timothy A.; ROSEN, Michael	Yes	None	REDUCTION OF SIGNAL FROM CONTAMINANT NUCLEIC ACIDS	
707	47697-707.611	EP	17840106.3	07-Aug-2017	3497218	19-Jun-2019	3497218	16-Mar-2022	Granted	Karius Inc	See PCT	REDUCTION OF SIGNAL FROM CONTAMINANT NUCLEIC ACIDS	
707	47697-707.611	EP	22155855.4	07-Aug-2017	4074824	19-Oct-2022			Published	Karius Inc	See PCT	REDUCTION OF SIGNAL FROM CONTAMINANT NUCLEIC ACIDS	
707	47697-707.621	DE	17840106.3	07-Aug-2017	3497218	19-Jun-2019	602017054	16-Mar-2022	Granted	Karius Inc	See PCT	REDUCTION OF SIGNAL FROM CONTAMINANT NUCLEIC ACIDS	
707	47697-707.631	FR	17840106.3	07-Aug-2017	3497218	19-Jun-2019	3497218	16-Mar-2022	Granted	Karius Inc	See PCT	REDUCTION OF SIGNAL FROM CONTAMINANT NUCLEIC ACIDS	
707	47697-707.641	GB	17840106.3	07-Aug-2017	3497218	19-Jun-2019	3497218	16-Mar-2022	Granted	Karius Inc	See PCT	REDUCTION OF SIGNAL FROM CONTAMINANT NUCLEIC ACIDS	
707	47697-707.701	CA	3031231	07-Aug-2017	3031231	15-Feb-2018			Published	Karius Inc	See PCT	REDUCTION OF SIGNAL FROM CONTAMINANT NUCLEIC ACIDS	
709	47697-709.101	US	62484856	12-Apr-2017		Expired	Provisional	Karius Inc	BLAUWKAMP, Timothy A.; SIT, Rene; VILFAN, Igor D.	Yes	None	SAMPLE PREPARATION METHODS, SYSTEMS AND COMPOSITIONS	
709	47697-709.201	US	15952203	12-Apr-2018	US2018-0371538A1	27-Dec-2018	10697008	30-Jun-2020	ISSUED	Karius Inc	Yes	None	SAMPLE PREPARATION METHODS, SYSTEMS AND COMPOSITIONS
709	47697-709.301	US	171484674	24-Sep-2021	US-2022-0186304-A1	16-Jun-2022	11834711		ISSUED	Karius Inc	Yes	None	SAMPLE PREPARATION METHODS, SYSTEMS AND COMPOSITIONS
709	47697-709.302	US	18486005	12-Oct-2023		Pending			Pending	Karius Inc	Yes	None	SAMPLE PREPARATION METHODS, SYSTEMS AND COMPOSITIONS
709	47697-709.401	US	15930489	13-May-2020	US-2020-0399691-A1	24-Dec-2020	11180800	23-Nov-2021	ISSUED	Karius Inc	Yes	None	SAMPLE PREPARATION METHODS, SYSTEMS AND COMPOSITIONS
709	47697-709.601	WO		12-Apr-2018	WO2018/19153	18-Oct-2018			Expired	Karius Inc	Yes	None	SAMPLE PREPARATION METHODS, SYSTEMS AND COMPOSITIONS
709	47697-709.611	EP	18784107.7	12-Apr-2018	3610034	19-Feb-2020	3610034	08-Jun-2022	Granted	Karius Inc	See PCT	SAMPLE PREPARATION METHODS, SYSTEMS AND COMPOSITIONS	
709	47697-709.621	DE	18784107.7	12-Apr-2018	3610034	19-Feb-2020	602018036	08-Jun-2022	Granted	Karius Inc	See PCT	SAMPLE PREPARATION METHODS, SYSTEMS AND COMPOSITIONS	
709	47697-709.631	FR	18784107.7	12-Apr-2018	3610034	19-Feb-2020	3610034	08-Jun-2022	Granted	Karius Inc	See PCT	SAMPLE PREPARATION METHODS, SYSTEMS AND COMPOSITIONS	
709	47697-709.641	GB	18784107.7	12-Apr-2018	3610034	19-Feb-2020	3610034	08-Jun-2022	Granted	Karius Inc	See PCT	SAMPLE PREPARATION METHODS, SYSTEMS AND COMPOSITIONS	
709	47697-709.701	CA	3059370	12-Apr-2018	3059370	18-Oct-2018	3059370	10-May-2022	Granted	Karius Inc	See PCT	SAMPLE PREPARATION METHODS, SYSTEMS AND COMPOSITIONS	
711	47697-711.101	US	62644357	16-Mar-2018		Expired	Provisional	Karius Inc	VILFAN, Igor D.; BLAUWKAMP, Timothy A.; ROSEN, Michael; HULSE, Liza	Yes	None	SAMPLE SERIES TO DIFFERENTIATE TARGET NUCLEIC ACIDS FROM CONTAMINANT NUCLEIC ACIDS	
711	47697-711.301	US	16884343	27-May-2020	2020-0291457	17-Sep-2020	11674167	13-Jun-2023	ISSUED	Karius Inc	Yes	None	SAMPLE SERIES TO DIFFERENTIATE TARGET NUCLEIC ACIDS FROM CONTAMINANT NUCLEIC ACIDS
711	47697-711.302	US	18300911	14-Apr-2023		Pending			Pending	Karius Inc	Yes	None	SAMPLE SERIES TO DIFFERENTIATE TARGET NUCLEIC ACIDS FROM CONTAMINANT NUCLEIC ACIDS
711	47697-711.601	WO		12-Mar-2019		30 Months	Expired	Karius Inc	VILFAN, Igor D.; BLAUWKAMP, Timothy A.; ROSEN, Michael; HULSE, Liza	Yes	None	SAMPLE SERIES TO DIFFERENTIATE TARGET NUCLEIC ACIDS FROM CONTAMINANT NUCLEIC ACIDS	
711	47697-711.611	EP	19766804.9	12-Mar-2019	EP3765592	20-Jan-2021			Published	Karius Inc	See PCT	SAMPLE SERIES TO DIFFERENTIATE TARGET NUCLEIC ACIDS FROM CONTAMINANT NUCLEIC ACIDS	
711	47697-711.701	CA	3062601	12-Mar-2019	3062601	19-Sep-2019			Published	Karius Inc	See PCT	SAMPLE SERIES TO DIFFERENTIATE TARGET NUCLEIC ACIDS FROM CONTAMINANT NUCLEIC ACIDS	
712	47697-712.101	US	62771082	21-Nov-2018		Expired	Provisional	Karius Inc	HOLLEMON, Desiree; HONG, David K	Yes	None	DETECTION AND PREDICTION OF INFECTIOUS DISEASE	
712	47697-712.102	US	627849618	17-May-2019		Expired	Provisional	Karius Inc	BERCOVICI, Sivan; BLAIR, Lily; BLAUWKAMP, Timothy A.; LINDNER, Martin M.S.; ROSEN, Michael J.; VILFAN, Igor D.	Yes	None	DETECTION AND PREDICTION OF INFECTIOUS DISEASE	
712	47697-712.301	US	17323834	18-May-2021	US-2021-0403986-A1	30-Dec-2021			Published	Karius Inc	Yes	None	DETECTION AND PREDICTION OF INFECTIOUS DISEASE
712	47697-712.601	WO	PCT/US2019/06266	21-Nov-2019	WO2020/106987	28-May-2020			30 Months	Expired	Yes	None	DETECTION AND PREDICTION OF INFECTIOUS DISEASE

712	4/7697-712.611	EP	19898226.8	21-Nov-2019	3864087	29-Sep-2021	Published	Karius Inc	BERCOVICI, Svanit; BLAIR, Lily; BLAUWKAMP, Timothy A.; EUGSTER, Peter J.; HOLLEMON, Desiree; HONG, David K.; KAWLI, Tugdil; KOWARSKY, Mark Alec; LINDNER, Martin M.S.; ROSEN, Michael J.; SPACEK, Danek; VILFAN, Igor D	See PCT	None	DETECTION AND PREDICTION OF INFECTIOUS DISEASE
712	4/7697-712.701	CA	3118742	21-Nov-2019	3118742	28-May-2020	Published	Karius Inc	BERCOVICI, Svanit; BLAIR, Lily; BLAUWKAMP, Timothy A.; EUGSTER, Peter J.; HOLLEMON, Desiree; HONG, David K.; KAWLI, Tugdil; KOWARSKY, Mark Alec; LINDNER, Martin M.S.; ROSEN, Michael J.; SPACEK, Danek; VILFAN, Igor D	See PCT	None	DETECTION AND PREDICTION OF INFECTIOUS DISEASE
712	4/7697-712.711	CN	2019800839444.7	21-Nov-2019	CN11322746.8A	06-Aug-2021	Published	Karius Inc	BERCOVICI, Svanit; BLAIR, Lily; BLAUWKAMP, Timothy A.; EUGSTER, Peter J.; HOLLEMON, Desiree; HONG, David K.; KAWLI, Tugdil; KOWARSKY, Mark Alec; LINDNER, Martin M.S.; ROSEN, Michael J.; SPACEK, Danek; VILFAN, Igor D	See PCT	None	DETECTION AND PREDICTION OF INFECTIOUS DISEASE
712	4/7697-712.731	IL	289247	21-Nov-2019			Pending	Karius Inc	BERCOVICI, Svanit; BLAIR, Lily; BLAUWKAMP, Timothy A.; EUGSTER, Peter J.; HOLLEMON, Desiree; HONG, David K.; KAWLI, Tugdil; KOWARSKY, Mark Alec; LINDNER, Martin M.S.; ROSEN, Michael J.; SPACEK, Danek; VILFAN, Igor D	See PCT	None	DETECTION AND PREDICTION OF INFECTIOUS DISEASE
713	4/7697-713.301	US	17323843	18-May-2021	US-2022-0010303-A1	13-Jan-2022	Published	Karius Inc	BERCOVICI, Svanit; BLAIR, Lily; BLAUWKAMP, Timothy A.; EUGSTER, Peter J.; HONG, David K.; KAWLI, Tugdil; Danek, VILFAN, Igor D	Yes	None	DIRECT-TO-LIBRARY METHODS, SYSTEMS, AND COMPOSITIONS
713	4/7697-713.601	WO	PCT/US2019/06248.8	20-Nov-2019	WO2020/10.6993	28-May-2020	30 Months Expired	Karius Inc	BERCOVICI, Svanit; BLAIR, Lily; BLAUWKAMP, Timothy A.; EUGSTER, Peter J.; HONG, David K.; KAWLI, Tugdil; M.S.; ROSEN, Michael J.; SPACEK, Danek; VILFAN, Igor D	Yes	None	DIRECT-TO-LIBRARY METHODS, SYSTEMS, AND COMPOSITIONS
713	4/7697-713.611	EP	19887248.3	20-Nov-2019	3884065	29-Sep-2021	Allowed	Karius Inc	BERCOVICI, Svanit; BLAIR, Lily; BLAUWKAMP, Timothy A.; EUGSTER, Peter J.; HONG, David K.; KAWLI, Tugdil; M.S.; ROSEN, Michael J.; SPACEK, Danek; VILFAN, Igor D	See PCT	None	DIRECT-TO-LIBRARY METHODS, SYSTEMS, AND COMPOSITIONS
713	4/7697-713.701	CA	3118990	20-Nov-2019	3118990	28-May-2020	Published	Karius Inc	BERCOVICI, Svanit; BLAIR, Lily; BLAUWKAMP, Timothy A.; EUGSTER, Peter J.; HONG, David K.; KAWLI, Tugdil; M.S.; ROSEN, Michael J.; SPACEK, Danek; VILFAN, Igor D	See PCT	None	DIRECT-TO-LIBRARY METHODS, SYSTEMS, AND COMPOSITIONS
719	4/7697-719.101	US	63127039	17-Dec-2020			Expired Provisional	Karius Inc and St. Jude	HONG, David K.; AHMED, Asim; HOLLEMON, Desiree	In process	Co-owned	PLASMA MICROBIAL CELL-FREE DNA SEQUENCING TO PREDICT BLOODSTREAM INFECTION IN PEDIATRIC PATIENTS WITH RELAPSED OR REFRACTORY CANCER
719	4/7697-719.201	US	17553583	16-Dec-2021	US-2022-0195496-A1	23-Jun-2022	Published	Karius Inc and St. Jude	AHMED, Asim; DUTTAGUPTA, Radha; BLAIR, Lily; RICKETTS, William; DUTTAGUPTA, Radha; AHMED, Asim	In process	Co-owned	NON-INVASIVE PREDICTION OF INVASIVE FUNGAL INFECTION BY PLASMA-BASED MICROBIAL CELL-FREE DNA NEXT-GENERATION SEQUENCING IN PEDIATRIC PATIENTS WITH RELAPSED OR REFRACTORY LEUKEMIA
719	4/7697-725.101	US	63139243	19-Jan-2021			Expired Provisional	Karius Inc	converted into 17553583 (7/19, 201)			
720	4/7697-720.101	US	63128552	21-Dec-2020			Expired Provisional	Karius Inc and University of Pittsburgh	AHMED, Asim; DUTTAGUPTA, Radha	Yes	Co-owned	MICROBIAL CELL FREE NUCLEIC ACIDS AND SECONDARY INFECTION DETECTION IN COVID-19 POSITIVE SUBJECTS
720	4/7697-720.301	US	18338128	20-Jun-2023			Pending	Karius Inc and University of Pittsburgh	AHMED, Asim; DUTTAGUPTA, Radha; KITSIOS, Georgios D.	Yes	Co-owned	SEQUENCING MICROBIAL CELL-FREE NUCLEIC ACIDS TO DETECT INFLAMMATION, SECONDARY INFECTION, AND DISEASE SEVERITY
720	4/7697-720.601	WO	PCT/US2021/06444.5	20-Dec-2021	WO2022/140.302	30-Jun-2022	30 Months Expired	Karius Inc and University of Pittsburgh	AHMED, Asim; DUTTAGUPTA, Radha; KITSIOS, Georgios D.	Yes	Co-owned	SEQUENCING MICROBIAL CELL-FREE NUCLEIC ACIDS TO DETECT INFLAMMATION, SECONDARY INFECTION, AND DISEASE SEVERITY
720	4/7697-720.611	EP	21912000.3	20-Dec-2021	4263866	25-Oct-2023	Published	Karius Inc and University of Pittsburgh	AHMED, Asim; DUTTAGUPTA, Radha; KITSIOS, Georgios D.	See PCT	Co-owned	SEQUENCING MICROBIAL CELL-FREE NUCLEIC ACIDS TO DETECT INFLAMMATION, SECONDARY INFECTION, AND DISEASE SEVERITY
720	4/7697-720.771	KR	10-2023-7024847	20-Dec-2021			Pending	Karius Inc and University of Pittsburgh	AHMED, Asim; DUTTAGUPTA, Radha; KITSIOS, Georgios D.	See PCT	Co-owned	SEQUENCING MICROBIAL CELL-FREE NUCLEIC ACIDS TO DETECT INFLAMMATION, SECONDARY INFECTION, AND DISEASE SEVERITY
720	4/7697-720.821	SG	1120230480DQ	20-Dec-2021			Pending	Karius Inc and University of Pittsburgh	AHMED, Asim; DUTTAGUPTA, Radha; KITSIOS, Georgios D.	See PCT	Co-owned	SEQUENCING MICROBIAL CELL-FREE NUCLEIC ACIDS TO DETECT INFLAMMATION, SECONDARY INFECTION, AND DISEASE SEVERITY

720	47697-721.101	US	63199497	03-Jan-2021	Provisional - converted into PCT/US2021/064445 (720.601)	Katus Inc	AHMED, Asim; BLAIR, Lily; DALAI, Sudeb; BERCOVICI, Sivan; HO, Carine	Yes	INFLAMMATORY HOST RESPONSES PROGNOSIS AND CIRCULATING MICROBIAL CELL-FREE DNA
720	47697-724.101	US	63139245	19-Jan-2021	Expired - Provisional - converted into PCT/US2021/064445 (720.601)	Katus Inc	AHMED, Asim; DUTTAGUPTA, Radha	Yes	PLASMA MICROBIAL CELL-FREE DNA LOAD IS ASSOCIATED WITH MORTALITY IN PATIENTS WITH COVID-19
722	47697-722.101	US	63136060	11-Jan-2021	Expired	Katus Inc	SMOLLIN, Matthew; DEGENER, Nick; EQUJUS, Ozlem; ARUN, Aparna; DEVRIES, Christian; MACINTYRE, Ann; AHMED, Asim	Yes	RAPID, NON-INVASIVE DETECTION AND SERIAL MONITORING OF INFECTIONS IN PEDIATRIC PATIENTS USING MICROBIAL CELL-FREE DNA SEQUENCING
722	47697-722.301	US	18349071	07-Jul-2023	Pending	Katus Inc	SMOLLIN, Matthew; DEGENER, Nick; EQUJUS, Ozlem; ARUN, Aparna; DEVRIES, Christian; MACINTYRE, Ann; BAICHWAL, Varsha; AHMED, Asim	None	RAPID, NON-INVASIVE DETECTION AND SERIAL MONITORING OF INFECTIONS IN SUBJECTS USING MICROBIAL CELL-FREE DNA SEQUENCING
722	47697-722.601	WO	PCT/US2022011967	10-Jan-2022	WO20221150725	14-Jul-2022	30 Months Expired	Katus Inc	RAPID, NON-INVASIVE DETECTION AND SERIAL MONITORING OF INFECTIONS IN SUBJECTS USING MICROBIAL CELL-FREE DNA SEQUENCING
722	47697-722.611	EP	22737296.1	10-Jan-2022	4274913	15-Nov-2023	Published	Katus Inc	RAPID, NON-INVASIVE DETECTION AND SERIAL MONITORING OF INFECTIONS IN SUBJECTS USING MICROBIAL CELL-FREE DNA SEQUENCING
722	47697-722.711	CN					Unfiled	Katus Inc	RAPID, NON-INVASIVE DETECTION AND SERIAL MONITORING OF INFECTIONS IN SUBJECTS USING MICROBIAL CELL-FREE DNA SEQUENCING
722	47697-722.771	KR					Unfiled	Katus Inc	RAPID, NON-INVASIVE DETECTION AND SERIAL MONITORING OF INFECTIONS IN SUBJECTS USING MICROBIAL CELL-FREE DNA SEQUENCING
722	47697-722.821	SG					Unfiled	Katus Inc	RAPID, NON-INVASIVE DETECTION AND SERIAL MONITORING OF INFECTIONS IN SUBJECTS USING MICROBIAL CELL-FREE DNA SEQUENCING
722	47697-723.101	US	63136076	11-Jan-2021			Expired - Provisional - converted into PCT/US2022/011967 (722.601)	Katus Inc	RAPID, NON-INVASIVE DETECTION OF BARTONELLA SPP. INFECTIONS IN PEDIATRIC PATIENTS USING MICROBIAL CELL-FREE DNA SEQUENCING
727	47697-727.101	US	63148858	12-Feb-2021			Expired	Katus Inc and State University of New York	Co-owned
727	47697-727.301	US	18365876	04-Aug-2023			Pending	Katus Inc and State University of New York	Co-owned
727	47697-727.601	WO	PCT/US2022016232	11-Feb-2022	WO20221174117	18-Aug-2022	30 Months Expired	Katus Inc and State University of New York	Co-owned
727	47697-727.611	EP	22753468.2	11-Feb-2022			Pending	Katus Inc and State University of New York	Co-owned
727	47697-727.701	CA	3207956	11-Feb-2022	3207956	18-Aug-2022	Published	Katus Inc and State University of New York	Co-owned
727	47697-727.711	CN	Awaiting	11-Feb-2022			Pending	Katus Inc and State University of New York	Co-owned
727	47697-727.771	KR	10-2023-7030562	11-Feb-2022			Pending	Katus Inc and State University of New York	Co-owned
727	47697-727.781	MX	MX/a/2023009368	11-Feb-2022			Pending	Katus Inc and State University of New York	Co-owned
743	47697-743.101	US	63496935	18-Apr-2023			Pending	Katus Inc	None
744	47697-744.101	US	63487592	28-Feb-2023			Expired	Katus Inc	None
744	47697-744.301	US	181610208	19-Mar-2024			Continuation, Pending	Katus Inc	None
757	47697-757.101	US	639554922	16-Feb-2024			Pending	Katus, Inc.	In process

TRADEMARK

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EXHIBIT C

Trademarks

[see attached]

TRADEMARK	COUNTRY	CLASS(ES)	APPLICATION DATE	APPLICATION NUMBER	REGISTRATIO N DATE	REGISTRATION NUMBER	STATUS	OWNER
CLARITY AT SPEED	United States of America	044	04/22/2019	88396938	05/19/2020	6060142	Registered	Karius, Inc.
K logo	Canada	005, 009, 042, 044	09/13/2022	1689475			Pending	Karius, Inc.
K logo	European Union	005, 009, 042, 044	09/13/2022	1689475	09/08/2023	1689475	Registered	Karius, Inc.
K logo	Republic of Korea	005, 009, 042, 044	09/13/2022	1689475	02/06/2024	1689475	Registered	Karius, Inc.
K logo	Switzerland	005, 009, 042, 044	09/13/2022	1689475	09/07/2023	1689475	Registered	Karius, Inc.
K logo	United Kingdom	005, 009, 042, 044	09/13/2022	1689475	01/09/2023	1689475	Registered	Karius, Inc.
K logo	United States of America	005, 009, 042, 044	04/15/2022	97365532			Allowed	Karius, Inc.
KARIUS	Argentina	042	04/06/2020	3885551	07/16/2021	3183688	Registered	Karius, Inc.
KARIUS	Argentina	44	04/06/2020	3885553	01/12/2022	3253203	Registered	Karius, Inc.
KARIUS	Australia	042, 044	04/01/2020	1530969	09/14/2020	1530969	Registered	Karius, Inc.
KARIUS	Brazil	042, 044	04/01/2020	1530969	03/10/2021	1530969	Registered	Karius, Inc.
KARIUS	Canada	042, 044	04/01/2020	1530969	10/12/2022	1530969	Registered	Karius, Inc.
KARIUS	China	042	04/01/2020	1530969	05/19/2021	1530969	Registered	Karius, Inc.
KARIUS	China	044	04/18/2022	64035347	11/07/2023	64035347	Registered	Karius, Inc.
KARIUS	European Union	042, 044	04/01/2020	1530969	10/01/2020	1530969	Registered	Karius, Inc.
KARIUS	Hong Kong	042, 044	04/02/2020	305238351	09/09/2020	305238351	Registered	Karius, Inc.
KARIUS	India	042, 044	04/01/2020	1530969	01/25/2021	1530969	Registered	Karius, Inc.



TRADEMARK	COUNTRY	CLASS(ES)	APPLICATION DATE	APPLICATION NUMBER	REGISTRATIO N DATE	REGISTRATION NUMBER	STATUS	OWNER
KARIUS	Japan	042, 044	04/01/2020	1530969	06/17/2021	1530969	Registered	Karius, Inc.
KARIUS	Mexico	042, 044	04/01/2020	1530969	08/13/2021	1530969	Registered	Karius, Inc.
KARIUS	New Zealand	042, 044	04/01/2020	1530969	02/02/2021	1530969	Registered	Karius, Inc.
KARIUS	Republic of Korea	042, 044	04/01/2020	1530969	06/22/2021	1530969	Registered	Karius, Inc.
KARIUS	Russian Federation	042, 044	04/01/2020	1530969	06/26/2021	1530969	Registered	Karius, Inc.
KARIUS	Switzerland	042, 044	04/01/2020	1530969	03/24/2021	1530969	Registered	Karius, Inc.
KARIUS	Taiwan	042, 044	04/06/2020	109021014	11/01/2020	02099383	Registered	Karius, Inc.
KARIUS	United Kingdom	042, 044	04/01/2020	1530969	11/30/2021	1530969	Registered	Karius, Inc.
KARIUS	United States of America	042	10/25/2019	88669381	04/27/2021	6336033	Registered	Karius, Inc.
KARIUS	United States of America	44	10/25/2019	88669462	08/25/2020	6134464	Registered	Karius, Inc.
KARIUS	United States of America	005	06/16/2016	87074298	05/29/2018	5481685	Registered	Karius, Inc.
KARIUS (stylized)	China	005	07/14/2023	72839554	01/21/2024	72839554	Registered	Karius, Inc.
KARIUS (stylized)	China	009	07/14/2023	72833102	01/21/2024	72833102	Registered	Karius, Inc.
KARIUS (stylized)	China	042	07/14/2023	72839226	01/21/2024	72839226	Registered	Karius, Inc.
KARIUS (stylized)	China	044	07/14/2023	72851307	01/21/2024	72851307	Registered	Karius, Inc.
KARIUS TEST	United States of America	44	09/29/2020	90222212	02/22/2022	6654808	Registered	Karius, Inc.
KARIUS TEST (stylized)	Canada	005, 044	07/22/2022	1679068			Pending	Karius, Inc.

TRADEMARK	COUNTRY	CLASS(ES)	APPLICATION DATE	APPLICATION NUMBER	REGISTRATIO N DATE	REGISTRATION NUMBER	STATUS	OWNER
KARIUS TEST (stylized)	China	005, 044	07/22/2022	1679068	10/09/2023	1679068	Registered	Karius, Inc.
KARIUS TEST (stylized)	European Union	005, 044	07/22/2022	1679068	01/19/2023	1679068	Registered	Karius, Inc.
KARIUS TEST (stylized)	Republic of Korea	005, 044	07/22/2022	1679068			Published	Karius, Inc.
KARIUS TEST (stylized)	Switzerland	005, 044	07/22/2022	1679068	07/12/2023	1679068	Registered	Karius, Inc.
KARIUS TEST (stylized)	United Kingdom	005, 044	07/22/2022	1679068	11/15/2022	1679068	Registered	Karius, Inc.
KARIUS TEST (stylized)	United States of America	005, 044	01/31/2022	97247153	09/05/2023	7153785	Registered	Karius, Inc.

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