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| PATENT ASSIGNMENT COVER SHEET |
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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| YOSHIMI KUROIWA | 05/02/2012 |
| HIROAKI MATSUSHITA | 05/02/2012 |
| AKIKO SANO | 05/08/2012 |
| RECEIVING PARTY DATA | |
| Name: | SAB, LLC |
| Street Address: | 2301 E. 60TH STREET NORTH |
| City: | SIOUX FALLS |
| State/Country: | SOUTH DAKOTA |
| Postal Code: | 57104 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 15070842 |
| CORRESPONDENCE DATA | |
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| ATTORNEY DOCKET NUMBER: | 13-100-PCT2USCON |
| NAME OF SUBMITTER: | ISADORA F BIELSKY |
| SIGNATURE: | /Isadora F. Bielsky/ |
| DATE SIGNED: | 03/28/2016 |
| Total Attachments: 5 | |
| source=13-100-PCT2USCON_executed Assginment from inventors#page2.tif | |
| source=13-100-PCT2USCON_executed Assginment from inventors#page3.tif | |
| source=SAB LLC Name Change#page1.tif | |

source=13-100-PCT2USCON Assignment (Inventors to Kyowa Hakko) Executed#page1.tif

source=13-100-PCT2USCON Assignment (Inventors to Kyowa Hakko) Executed#page2.tif

ASSIGNMENT

Whereas, I/we Yoshimi KUROIWA and Hiroaki MATSUSHITA, both of SD, U.S.A. and Akiko SANO of Tokyo, Japan

hereinafter called assignor(s), have invented certain improvements in
HUMAN ARTIFICIAL CHROMOSOME VECTOR
and executed an application for Letters Patent of the United States of America therefor on

May 2, 2012 ; and

Whereas, Kyowa Hakko Kirin Co., Ltd. of
1-6-1, Ohtemachi, Chiyoda-ku, Tokyo 100-8185 Japan

(assignee), desires to acquire the entire right, title and interest in the application and invention, and to any United States patents to be obtained therefor;

Now therefore, for valuable consideration, receipt whereof is hereby acknowledged,

I/We, the above named assignor(s), hereby sell, assign and transfer to the above named assignee, its successors and assigns, the entire right, title and interest in the application and the invention disclosed therein for the United States of America, including the right to claim priority under 35 U.S.C. § 119, and I/we request the Director - U.S. Patent and Trademark Office to issue any Letters Patent granted upon the invention set forth in the application to the assignee, its successors and assigns; and I/we will execute without further consideration all papers deemed necessary by the assignee in connection with the United States application when called upon to do so by the assignee.

I/We hereby authorize and request my/our attorneys SUGHRUE MION, PLLC of 2100 Pennsylvania Avenue, N.W., Washington, D.C. 20037-3213 to insert here in parentheses (Application number _____, filed _____) the filing date and application number of said application when known.

Date: May 2, 2012

s/ 
Yoshimi KUROIWA

Date: May 2, 2012

s/ 
Hiroaki MATSUSHITA

Date:

s/ _____
Akiko SANO

Date:

s/ _____

Date:

s/ _____

Date:

s/ _____

(Legalization not required for recording but is prima facie evidence of execution under 35 U.S.C. §261)

PATENT
REEL: 028224 FRAME: 0418

PATENT
REEL: 038112 FRAME: 0558

ASSIGNMENT

Whereas, I/we Yoshimi KUROIWA and Hiroaki MATSUSHITA, both of SD, U.S.A. and Akiko SANO of Tokyo, Japan

hereinafter called assignor(s), have invented certain improvements in
HUMAN ARTIFICIAL CHROMOSOME VECTOR
and executed an application for Letters Patent of the United States of America therefor on

May 8, 2012 ; and

Whereas, Kyowa Hakko Kirin Co., Ltd. of
1-6-1, Ohtemachi, Chiyoda-ku, Tokyo 100-8185 Japan

(assignee), desires to acquire the entire right, title and interest in the application and invention, and to any United States patents to be obtained therefor;


Now therefore, for valuable consideration, receipt whereof is hereby acknowledged,

I/We, the above named assignor(s), hereby sell, assign and transfer to the above named assignee, its successors and assigns, the entire right, title and interest in the application and the invention disclosed therein for the United States of America, including the right to claim priority under 35 U.S.C. § 119, and I/we request the Director – U.S. Patent and Trademark Office to issue any Letters Patent granted upon the invention set forth in the application to the assignee, its successors and assigns; and I/we will execute without further consideration all papers deemed necessary by the assignee in connection with the United States application when called upon to do so by the assignee.

I/We hereby authorize and request my/our attorneys SUGHRUE MION, PLLC of 2100 Pennsylvania Avenue, N.W., Washington, D.C. 20037-3213 to insert here in parentheses (Application number _____, filed _____) the filing date and application number of said application when known.

Date: s/ _____
Yoshimi KUROIWA

Date: s/ _____
Hiroaki MATSUSHITA

Date: May 8, 2012 s/  _____
Akiko SANO

Date: s/ _____

Date: s/ _____

Date: s/ _____

(Legalization not required for recording but is prima facie evidence of execution under 35 U.S.C. §261)

RECORDED: 05/17/2012

PATENT
REEL: 028224 FRAME: 0419

PATENT
REEL: 038112 FRAME: 0559

State of South Dakota



OFFICE OF THE SECRETARY OF STATE

Certificate of Amendment Domestic LLC

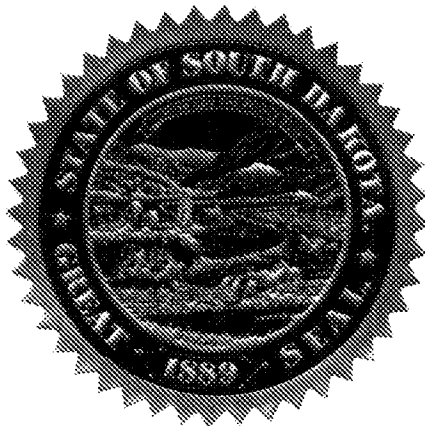
ORGANIZATIONAL ID# DL030426

I, Jason Gant, Secretary of State of the State of South Dakota, hereby certify that the Amendment to the Initial Filing of

'SANFORD APPLIED BIOSCIENCES, L.L.C.', changing its name to 'SAB, LLC' duly signed and verified, have been received in this office and are found to conform to law.

ACCORDINGLY, and by virtue of the authority vested in me by law, I hereby issue this Certificate of Amendment and attach hereto a duplicate of the Amendment to the Initial Filing.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the Great Seal of the State of South Dakota, at Pierre, the Capital, this 05/29/2014.



Jason M. Gant
Secretary of State

6/2/2014 8:38:32 AM
Change ID: 1174842

PATENT

REEL: 038112 FRAME: 0560

Assignment

Whereas, KYOWA HAKKO KIRIN CO., LTD., of 1-6-1, Ohtemachi, Chiyoda-ku, Tokyo 100-8185, JAPAN, hereinafter referred to as the "Assignor," is the owner of the entire right, title, and interest in and to:

U.S. Application No. 13/510,305 entitled "Human Artificial Chromosome Vector", by virtue of an assignment from the inventors thereof recorded on May 17, 2012, at Reel/Frame 028223/0462; and of

U.S. Application No. 13/510,327 entitled "Human Artificial Chromosome Vector", by virtue of an assignment from the inventors thereof recorded on May 17, 2012, at Reel/Frame 028224/0417; and

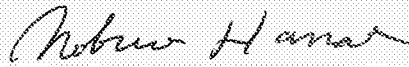
Whereas, SANFORD APPLIED BIOSCIENCES, L.L.C., of 2301 E. 60th Street North, Sioux Falls, South Dakota 57104, UNITED STATES, hereinafter referred to as the "Assignees," desires to acquire the entire right, title, and interest in said United States Patent Applications;

Now therefore, for valuable consideration, receipt whereof is hereby acknowledged,

We, the above named Assignor, hereby sell, assign and transfer to the above named Assignee, their successors and assigns, our entire right, title and interest in and to said United States Application No. 13/510,305 and United States Application No. 13/510,327, and the inventions disclosed therein for the United States of America, including the right to claim priority under 35 U.S.C. §119, and we request the Director of the U.S. Patent and Trademark Office to issue any continuing applications, reissue applications and reexamination applications based thereon to the above-named Assignor, its successors and assigns; and we will execute without further consideration all papers deemed necessary by the above named Assignor in connection with United States Application No. 13/510,305 and United States Application No. 13/510,327, when called upon to do so by the above named Assignee.

Date: 10 April 2013

(signature of assignor)/



(name of assignor's representative)/

Nobuo Hanai

(title)/

President and CEO

Assignment
(U.S. Application Nos. 13/510,305 and 13/510,327)

Date: 10 Apr 2013


(signature of assignee)/ SANFORD APPLIED BIOSCIENCES, L.L.C.

(name of assignee's representative)/ Eddie Sullivan, Ph.D.

(title)/ Vice-President