PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT2930659

| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|-------------------|----------------|
| DANE GOFF | 09/12/2011 |
| DONALD PAYAN | 09/28/2011 |
| RAJINDER SINGH | 09/20/2011 |
| SIMON SHAW | 09/12/2011 |
| DAVID CARROLL | 09/12/2011 |
| YASUMICHI HITOSHI | 09/20/2011 |

RECEIVING PARTY DATA

| Name: | RIGEL PHARMACEUTICALS, INC. |
|-----------------|-----------------------------|
| Street Address: | 1180 VETERANS BOULEVARD |
| City: | SOUTH SAN FRANCISCO |
| State/Country: | CALIFORNIA |
| Postal Code: | 94080 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 14325766 |

CORRESPONDENCE DATA

Fax Number: (312)913-0002

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: 312-913-0001 Email: neth@mbhb.com

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP **Correspondent Name:**

Address Line 1: 300 SOUTH WACKER DRIVE Address Line 4: CHICAGO, ILLINOIS 60606

| ATTORNEY DOCKET NUMBER: | 10-921-US-DIV |
|-------------------------|------------------|
| NAME OF SUBMITTER: | JAMES V. SUGGS |
| SIGNATURE: | /James V. Suggs/ |
| DATE SIGNED: | 07/09/2014 |

Total Attachments: 10

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REEL: 033270 FRAME: 0121 502884061

PATENT

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PATENT REEL: 033270 FRAME: 0122

ASSIGNMENT

Case No.: 10-921

Serial No.: 61/368,928

Filed: July 29, 2010

Case No.: 10-921-US

Serial No.: 13/194,810

Filed: July 29, 2011

Case No.: 10-921-WO

Serial No.: PCT/US2011/46019

Filed: July 29, 2011

Inventors: Dane Goff, et al

In consideration of One Dollar (\$1.00) and other good and valuable considerations in hand paid, the receipt and sufficiency whereof are hereby acknowledged, the undersigned hereby assign to:

Rigel Pharmaceuticals, Inc. 1180 Veterans Boulevard South San Francisco, California 94080

its successors and assigns, the entire right, title and interest in the invention or improvements of the undersigned disclosed in United States patent applications entitled as:

Substituted Pyridine Compounds and Methods of Using the Same

and identified as:

Case No. 10-921

and disclosed in the United States patent application and Patent Cooperation Treaty application entitled as:

AMPK-Activating Heterocyclic Compounds And Methods For Using The Same

and identified as:

Case No. 10-921-US and 10-921-WO

in the offices of McDonnell Boehnen Hulbert & Berghoff LLP and in said application and any and all other applications, both United States and foreign, which the undersigned may file, either solely or jointly with others, on said invention or improvements, and in any and all Letters Patent of the United States and foreign countries, which may be obtained on any of said applications, and in any reissue or extension of such patents, and further assigns to said assignee the priority right provided by the International Convention.

The undersigned hereby authorize and request the Commissioner of Patents and Trademarks to issue said Letters Patent to said assignee.

The undersigned hereby authorize and request the attorneys of record in said application to insert in this assignment the filing date and serial number of said application when officially known, and the date of execution of the application.

The undersigned warrant themselves to be the owners of the entire right, title and interest in said invention or improvements and to have the right to make this assignment, and further warrant that there are no outstanding prior assignments, licenses, or other encumbrances on the interest herein assigned.

For said considerations the undersigned hereby agree, upon the request and at the expense of said assignee, its successors and assigns, to execute any and all divisional, continuation and substitute applications for said invention or improvements, and any necessary oath, affidavit or declaration relating thereto, and any application for the reissue or extension of any Letters Patent that may be granted upon said application and any and all applications and other documents for Letters Patent in foreign countries on said invention or improvements, that said assignee, its successors or assigns may deem necessary or expedient, and for the said considerations the undersigned authorize said assignee to apply for patents for said invention or improvements in its own name in such countries where such procedure is proper and further agree, upon the request of said assignee, its successors and assigns, to cooperate to the best of the ability of the undersigned with said assignee, its successors and assigns, in any proceedings or transactions involving such applications or patents, including the preparation and execution of preliminary statements, giving and producing evidence, and performing any and all other acts necessary to obtain, maintain and enforce said Letters Patent, both United States and foreign, and vest all rights therein hereby conveyed in the assignee, its successors and assigns, whereby said Letters Patent will be held and enjoyed by the said assignee, its successors and assigns, to the full end of the term for which said Letters Patent will be granted, as fully and entirely as the same would have been held and enjoyed by the undersigned if this assignment had not been made.

WITNESS my hand and seal this /2 day of ______

, 2011.

Dane Goff

State of (alifornia

County of San Mateo

The foregoing instrument was acknowledged before me this 2 day of September, 2011.

TERESA MARIE LASAGA
Commission # 1863176
Notary Public - California
San Mateo County
My Comm. Expires Aug 29, 2013

NOTARY PUBLIC

| WITNESS my hand and seal this 28 day of Septe | , 2011. |
|--|---------------------------------|
| | Donald Payan |
| State of <u>California</u> County of <u>San Mateo</u> | · · |
| County of San reated | |
| The foregoing instrument was acknowledged before me | this 28 day of September, 2011. |
| TERESA MARIE LASAGA Commission # 1863176 Notary Public - California San Mateo County My Comm. Expires Aug 29, 2013 | he la NOTARY PUBLIC |
| | |
| WITNESS my hand and seal this 76 day of | žę , 2011. |
| | |
| | Rajinder Singh |
| State of California | |
| County of San Mateo | |
| The foregoing instrument was acknowledged before me | this 20 day of September, 2011. |
| TERESA MARIE LASAGA Commission # 1863176 Notary Public - California San Mateo County | NOTARY PUBLIC |
| My Comm. Expires Aug 29, 2013 | |

- 3 -

| WITNESS my hand and seal this 12th day of _ | SEPTEMBER, 2011. |
|--|--------------------------------------|
| | Simon Shaw |
| State of <u>California</u> County of <u>San Mateo</u> | |
| The foregoing instrument was acknowledged before | re me this a day of September, 2011. |
| TERESA MARIE LASAGA Commission # 1863176 Notary Public - California San Mateo County My Comm. Expires Aug 29, 2013 | NOTARY PUBLIC |
| • | |
| WITNESS my hand and seal this day of _ | |
| | David Carroll |
| State of | |
| County of | |
| The foregoing instrument was acknowledged before | ore me this, 2011. |

NOTARY PUBLIC

| WITNESS my hand and seal this 20 day of . Se | eptember, 2011. |
|--|-----------------------------------|
| | Yasumichi Hitoshi |
| State of California | , |
| County of <u>San Mateo</u> | |
| The foregoing instrument was acknowledged before me | e this 20 day of September, 2011. |
| TERESA MARIE LASAGA Commission ** 1863176 Notary Public - California San Mateo County My Comm. Evolves Aug 20, 2010 P. | NOTARY PUBLIC |

ASSIGNMENT

Case No.: 10-921

Serial No.: 61/368,928

Filed: July 29, 2010

Case No.: 10-921-US

Serial No.: 13/194,810

Filed: July 29, 2011

Case No.: 10-921-WO

Serial No.: PCT/US2011/46019

Filed: July 29, 2011

Inventors: Dane Goff, et al

In consideration of One Dollar (\$1.00) and other good and valuable considerations in hand paid, the receipt and sufficiency whereof are hereby acknowledged, the undersigned hereby assign to:

Rigel Pharmaceuticals, Inc. 1180 Veterans Boulevard South San Francisco, California 94080

its successors and assigns, the entire right, title and interest in the invention or improvements of the undersigned disclosed in United States patent applications entitled as:

Substituted Pyridine Compounds and Methods of Using the Same

and identified as:

Case No. 10-921

and disclosed in the United States patent application and Patent Cooperation Treaty application entitled as:

AMPK-Activating Heterocyclic Compounds And Methods For Using The Same

and identified as:

Case No. 10-921-US and 10-921-WO

in the offices of MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP and in said application and any and all other applications, both United States and foreign, which the undersigned may file, either solely or jointly with others, on said invention or improvements, and in any and all Letters Patent of the United States and foreign countries, which may be obtained on any of said applications, and in any reissue or extension of such patents, and further assigns to said assignee the priority right provided by the International Convention.

The undersigned hereby authorize and request the Commissioner of Patents and Trademarks to issue said Letters Patent to said assignee.

The undersigned hereby authorize and request the attorneys of record in said application to insert in this assignment the filing date and serial number of said application when officially known, and the date of execution of the application.

The undersigned warrant themselves to be the owners of the entire right, title and interest in said invention or improvements and to have the right to make this assignment, and further warrant that there are no outstanding prior assignments, licenses, or other encumbrances on the interest herein assigned.

For said considerations the undersigned hereby agree, upon the request and at the expense of said assignee, its successors and assigns, to execute any and all divisional, continuation and substitute applications for said invention or improvements, and any necessary oath, affidavit or declaration relating thereto, and any application for the reissue or extension of any Letters Patent that may be granted upon said application and any and all applications and other documents for Letters Patent in foreign countries on said invention or improvements, that said assignee, its successors or assigns may deem necessary or expedient, and for the said considerations the undersigned authorize said assignee to apply for patents for said invention or improvements in its own name in such countries where such procedure is proper and further agree, upon the request of said assignee, its successors and assigns, to cooperate to the best of the ability of the undersigned with said assignee, its successors and assigns, in any proceedings or transactions involving such applications or patents, including the preparation and execution of preliminary statements, giving and producing evidence, and performing any and all other acts necessary to obtain, maintain and enforce said Letters Patent, both United States and foreign, and vest all rights therein hereby conveyed in the assignee, its successors and assigns, whereby said Letters Patent will be held and enjoyed by the said assignee, its successors and assigns, to the full end of the term for which said Letters Patent will be granted, as fully and entirely as the same would have been held and enjoyed by the undersigned if this assignment had not been made.

WITNESS my hand and seal this / 2 day of Septi

, 2011.

Dane Goff

State of (alifornia

County of San Mateo

The foregoing instrument was acknowledged before me this 2 day of September, 2011

TERESA MARIE LASAGA
Commission # 1863176
Notary Public - California
San Mateo County
My Comm. Expires Aug 29, 2013

NOTARY PUBLIC

| WITNESS my hand and seal this 28 day of Septen | mber, 2011. |
|--|---|
| State of <u>California</u> County of <u>San Mateo</u> | Donald Payan |
| The foregoing instrument was acknowledged before me the | nis 28 day of September, 2011. |
| TERESA MARIE LASAGA Commission # 1863176 Notary Public - California San Mateo County My Comm. Expires Aug 29, 2013 | he la |
| WITNESS my hand and seal this 70 day of 2 | , 2011. |
| | Rajinder(Singh |
| State of <u>California</u> County of <u>San Mateo</u> | |
| The foregoing instrument was acknowledged before me | this 20 day of September, 2011. |
| TERESA MARIE LASAGA Commission # 1863176 Notary Public - California San Mateo County My Comm. Expires Aug 29, 2013 | NOTARY PUBLIC |

- 3 -

| WITNESS my hand and seal this | day of | , 2011. | |
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| | | | |
| | · | Simon Shaw | ************* |
| State of | | , | |
| County of | | | |
| The foregoing instrument was cakno | suladged before n | ne this day of | 2011 |
| The folegoing matrument was acknown | wiedgen before n | day of | , 2011. |
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| WITNESS my hand and seal this | 2 day of | september, 2011. | |
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| | of the segment of the | Wand mill | ing per debenden vom 1844 Nordensviller fille fillet det 500 N |
| | | David Carroll | |
| State of California | | | |
| County of San Maded | | | |
| The foregoing instrument was acknow | wledged before m | ne this 12 day of September | . 2011. |
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| TERESA MARIE LASAGA | - | he tu | |
| Commission # 1863176 Notary Public - California | NN | NOTARY PUBLIC | |
| San Mateo County My Comm. Expires Aug 29, 20 | A. | | |
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| WITNESS my hand and seal this 20 day of day of | Comber, 2011. |
|--|--|
| | Yasumichi Hitoshi |
| State of California | , |
| County of <u>San Mateo</u> | |
| The foregoing instrument was acknowledged before me th | is <u>20</u> day of <u>SEP lember</u> , 2011 |
| TERESA MARIE LASAGA Commission # 1863176 Notary Public - California San Mateo County My Comm. Expires Aug 20, 2012 | NOTARY PUBLIC |