

## PATENT ASSIGNMENT COVER SHEET

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|---|---------------------------------|
| <b>SUBMISSION TYPE:</b>   | NEW ASSIGNMENT                  |
| <b>NATURE OF CONVEYANCE:</b>  | ASSIGNMENT                      |
| <b>CONVEYING PARTY DATA</b>   |                                 |
| <b>Name</b>   | <b>Execution Date</b>           |
| RALPH E. DEWEY  | 11/27/2007                      |
| STEVEN W. BOWEN   | 11/27/2007                      |
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| <b>Postal Code:</b>   | 27606                           |
| <b>PROPERTY NUMBERS Total: 2</b>  |                                 |
| <b>Property Type</b>  | <b>Number</b>                   |
| <b>Patent Number:</b>   | 9228194                         |
| <b>Patent Number:</b>   | 9228195                         |
| <b>CORRESPONDENCE DATA</b>  |                                 |
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| <b>NAME OF SUBMITTER:</b>   | JASON A. KEITH                  |
| <b>SIGNATURE:</b>   | /jason a. keith/                |
| <b>DATE SIGNED:</b>   | 10/23/2018                      |
| <b>Total Attachments: 3</b>   |                                 |
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| source=336885-AssignmentTo-NCStateUniversity#page2.tif  |                                 |
| source=336885-AssignmentTo-NCStateUniversity#page3.tif  |                                 |

## ASSIGNMENT - WORLDWIDE

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each undersigned inventor has sold and assigned, and by these presents hereby sells and assigns, unto

North Carolina State University  
920 Main Campus Drive  
Venture II Building  
Suite 400  
Raleigh, NC 27606 USA

its successors and assigns, the entire right, title and interest, so far as concerns the United States and the Territories and Possessions thereof and all foreign countries in and to the invention in **"ALTERATION OF TOBACCO ALKALOID CONTENT THROUGH MODIFICATION OF SPECIFIC CYTOCHROME P450 GENES"**

as set forth in this United States Patent Application

- ☐ executed concurrently herewith
- ☐ executed on
- ☒ Application No. 60/987,243, filed November 12, 2007
- ☐ Application claims priority from Application No. \_\_\_\_\_, filed \_\_\_\_\_, all applications listed above being hereinafter referred to as the "application(s)";

said application for United States Letters Patent, including all divisional, renewal, substitute, continuation, nonprovisionals, continuation-in-parts, and Convention applications based in whole or in part upon said inventions or upon said applications, and any and all Letters Patent and reissues, reexaminations, and extensions of Letters Patent granted for said inventions or upon said applications and every priority right that is or may be predicated upon or arise from said inventions, said applications, and said Letters Patent; said Assignee being hereby authorized to file patent applications in any or all countries on any or all said inventions in the name of the undersigned or in the name of said Assignee or otherwise as said Assignee may deem advisable, under the International Convention or otherwise; the Commissioner of Patents and Trademarks of the United States of America being hereby authorized to issue or transfer all said Letters Patent to said Assignee in accordance herewith; this assignment being under covenant, not only that full power to make the same is had by the undersigned, but also that such assigned right is not encumbered by any grant, license, or other right theretofore given, and that the undersigned will do all acts reasonably serving to ensure that the said inventions, patent applications and Letters Patent shall be held and enjoyed by said Assignee as fully and entirely as the same could have been held and enjoyed by the undersigned if this assignment had not been made, and particularly to execute and deliver to said Assignee all lawful documents including petitions, specifications, oaths, assignments, invention disclaimers, declarations, and lawful affidavits in form and substance which may be requested by said Assignee, to furnish said Assignee with all

facts relating to said inventions or the history thereof and any and all documents, photographs, models, samples or other physical exhibits which may embody said inventions, and to testify in any proceedings relating to said inventions, patent applications, and/or Letters Patent.

The undersigned hereby grant(s) an authorized representative of Assignee the power to insert in this Assignment any further identification that may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment.

11/27/07  
Date

Ralph E. Dewey  
RALPH E. DEWEY

State of North Carolina )

County of Wake )

I, Roberta Terry, a Notary Public for said County and State, do hereby certify that RALPH E. DEWEY personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and official seal, this the 27th day of November, 2007.

(Official Seal)

Roberta Terry  
Notary Public

My commission expires March 22 2010

Date 11/27/07

Steven W. Bowen  
STEVEN W. BOWEN

State of North Carolina )

County of Wake )

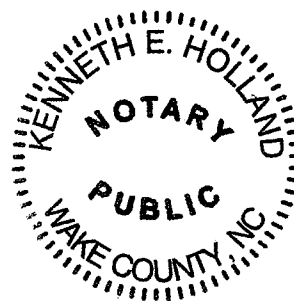
I, Kenneth E. Holland, a Notary Public for said County and State, do hereby certify that STEVEN W. BOWEN personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and official seal, this the 27<sup>th</sup> day of November, 2007.

(Official Seal)

Kenneth E. Holland  
Notary Public

My commission expires 12-31-2009



Attorney Docket No. 035051/336885

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