

PATENT ASSIGNMENT

Electronic Version v1.1

Stylesheet Version v1.1

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| Bal Ram Singh | 12/05/1997 |
| Zhong Zhang | 11/15/1997 |
| RECEIVING PARTY DATA | |
| Name: | University of Massachusetts Dartmouth |
| Street Address: | 18 Tremont Street |
| Internal Address: | Suite 800 |
| City: | Boston |
| State/Country: | MASSACHUSETTS |
| Postal Code: | 02108 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 12247124 |
| CORRESPONDENCE DATA | |
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| ATTORNEY DOCKET NUMBER: | 08387-0002004 |
| NAME OF SUBMITTER: | Sherwin Chan |

Total Attachments: 2
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REEL: 022356 FRAME: 0498

CH \$40.00 12247124

ASSIGNMENT

For valuable consideration, we, Bal Ram Singh, of Dartmouth, Massachusetts and Zhong Zhang of New Bedford, Massachusetts hereby assign to University of Massachusetts, a Massachusetts corporation having a place of business at 18 Tremont Street, Suite 800, Boston, Massachusetts 02108, and its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title and interest throughout the world in the inventions and improvements which are subject of an application for United States Patent signed by us, entitled NOVEL PROTEINS WITHIN THE TYPE E BOTULINUM NEUROTOXIN COMPLEX, filed July 8, 1997, and assigned U.S. Serial Number 08/889,354, this assignment including said application, any and all United States and foreign patents, utility models, and design registrations granted for any of said inventions or improvements, and the right to claim priority based on the filing date of said application under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and we authorize the Assignee to apply in all countries in our name or in its own name for patents, utility models, and design registrations and like rights of exclusion and for inventors' certificates for said inventions and improvements; and we agree for ourselves and our respective heirs, legal representatives and assigns, without further compensation to perform such lawful acts and to sign such further applications, assignments, Preliminary Statements and other lawful documents as the Assignee may reasonably request to effectuate fully this assignment.

IN WITNESS WHEREOF, I hereto set my hand and seal at U Mass Dartmouth,
this 5th day of December, 1997

Bal Ram Singh L.S.
Bal Ram Singh

STATE OF Massachusetts:
COUNTY OF Bristol: ss.

Before me this 5th day of December 1997, personally appeared

Bal Ram Singh known to me to be the person whose name is subscribed to the foregoing Assignment, and acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.

Eileen D. Ferreira
Notary Public

My Commission Expires:

[Notary's Seal Here]

My Commission Expires January 25, 2002

IN WITNESS WHEREOF, I hereto set my hand and seal at BankBoston 21st Faunce Cr. Rd. No. Dartmouth, MA,
this 15th day of November, 1997

Zhong Zhang L.S.

STATE OF Massachusetts:

COUNTY OF Bristol: ss.

Before me this 15th day of November, 1997, personally appeared

Zhong Zhang known to me to be the person whose name is subscribed to the foregoing Assignment, and
acknowledged that he/she executed the same as his/her free act and deed for the purposes therein contained.

Margaret M. Gray
Notary Public

My Commission Expires: Feb. 6, 1998

[Notary's Seal Here]

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RECORDED: 03/06/2009

REEL: 022356 FRAME: 0501