PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Jan Grunewald	04/17/2009
Meng-Lin Tsao	04/28/2009
Roshan Perera	04/20/2009
Richard A. Lerner	04/15/2009
Vaughn V. Smider	04/16/2009
Peter G. Schultz	04/16/2009

RECEIVING PARTY DATA

Name:	The Scripps Research Institute	
Street Address:	10550 North Torrey Pines Road	
City:	La Jolla	
State/Country:	CALIFORNIA	
Postal Code:	92037	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	12322938

CORRESPONDENCE DATA

(510)337-7877 Fax Number:

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

510-337-7871 Phone:

Email: dbarragan@quinelaw.com

Correspondent Name: Quine Intellectual Property Law Group

Address Line 1: 2033 Clement Ave, Suite 200 Alameda, CALIFORNIA 94501 Address Line 4:

ATTORNEY DOCKET NUMBER:	54-002750US

NAME OF SUBMITTER: Deborah Barragan

PATENT

REEL: 022650 FRAME: 0618

500854096

Total Attachments: 20 source=54-002750US_Executed_Assignment#page1.tif source=54-002750US_Executed_Assignment#page2.tif source=54-002750US_Executed_Assignment#page3.tif source=54-002750US_Executed_Assignment#page4.tif source=54-002750US_Executed_Assignment#page5.tif source=54-002750US Executed Assignment#page6.tif source=54-002750US_Executed_Assignment#page7.tif source=54-002750US_Executed_Assignment#page8.tif source=54-002750US Executed Assignment#page9.tif source=54-002750US Executed Assignment#page10.tif source=54-002750US_Executed_Assignment#page11.tif source=54-002750US_Executed_Assignment#page12.tif source=54-002750US Executed Assignment#page13.tif source=54-002750US_Executed_Assignment#page14.tif source=54-002750US_Executed_Assignment#page15.tif source=54-002750US_Executed_Assignment#page16.tif source=54-002750US_Executed_Assignment#page17.tif source=54-002750US_Executed_Assignment#page18.tif source=54-002750US_Executed_Assignment#page19.tif source=54-002750US_Executed_Assignment#page20.tif

ASSIGNMENT OF PATENT APPLICATION

JOINT

WHEREAS, Jan Grunewald, of 3855 Nobel Dr., Apt. 2206, San Diego, California 92122, Meng-Lin Tsao of 2079 Spy Glass Ct., Merced, California 95340, Roshan Perera of 1712 Wanda Way, Arlington, Texas 76001, Richard A. Lerner, 7750 East Roseland Drive, La Jolla, California 92037, Vaughn V. Smider of 7483 Healis Place, San Diego, California 92129, and Peter G. Schultz of 1650 La Jolla Rancho Road, La Jolla, California 92037, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below-identified applications for United States Letters Patent:

Application No.	Filed on	Title of Invention
12/322,938	February 7, 2009	Breaking Immunological Tolerance with a GeneticalLy Encoded Unnatural Amino Acid
PCT/US2009/000813	February 7, 2009	Breaking Immunological Tolerance with a GeneticalLy Encoded Unnatural Amino Acid
61/203,948	December 29, 2008	Breaking Immunological Tolerance with a GeneticalLy Encoded Unnatural Amino Acid
61/203,947	December 29, 2008	A Novel Anti-TNF-Alpha Immunotherapy Based on Vaccinationwith A TNF-Alpha Antigen Containing an Antibody-Accessable P-Nitrophenylalanine
61/137,676	July 31, 2008	Breaking Immunological Tolerance with a GeneticalLy Encoded Unnatural Amino Acid
61/137,635	July 31, 2008	A Novel Anti-TNF-Alpha Immunotherapy Based on Vaccinationwith A TNF-Alpha Antigen Containing an Antibody-Accessable P- Nitrophenylalanine
61/135,947	July 25, 2008	Breaking Immunological Tolerance with a GeneticalLy Encoded Unnatural Amino Acid
61/135,969	July 25, 2008	A Novel Anti-TNF-Alpha Immunotherapy Based on Vaccinationwith A TNF-Alpha Antigen Containing an Antibody-Accessable P- Nitrophenylalanine
61/065,515	February 12, 2008	Breaking Immunological Tolerance with a GeneticalLy Encoded Unnatural Amino Acid
61/065,590	February 12, 2008	A Novel Anti-TNF-Alpha Immunotherapy Based on Vaccinationwith A TNF-Alpha Antigen Containing an Antibody-Accessable P- Nitrophenylalanine
61/065,148	February 8, 2008	Breaking Immunological Tolerance with a GeneticalLy Encoded Unnatural Amino Acid
61/065,147	February 8, 2008	A Novel Anti-TNF-Alpha Immunotherapy Based on Vaccinationwith A TNF-Alpha Antigen Containing an Antibody-Accessable P-Nitrophenylalanine

Assignment

Application Nos.: 12/322,938

PCT Application No.:

Page 2

WHEREAS, The Scripps Research Institute, a corporation, located at 10550 North Torrey Pines Road, La Jolla, California 92037, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and applications and to all foreign counterparts thereof (including all patents, patent applications, utility models and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on any patent application claiming priority from the same in the United States and all countries throughout the world, and in and to any such applications, foreign counterparts, patents, Letters Patent and Registrations which claim priority from the application or which claim priority from a related application that

the above applications claim priority to, including as provided for by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignce and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any foreign counterpart, division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignee, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

IN TESTIMONY WHEREOF, Assignors have signed his/her name on the date indicated.

In Consuld

SIGNATURE WITNESSED BY:

(1) Date: 4/17/19

Signature of Witness

Assignment Application Nos.: 12/322,938	
PCT Application No.:	
Page 3	
Dated:	
	Meng-Lin Tsao
SIGNATURE WITNESSED BY:	•
(1) Date:	
(1) 2410	Signature of Witness
	•
Dated:	
	Roshan Perera
•	
SIGNATURE WITNESSED BY:	
(1) Date:	
(1) Date	Signature of Witness
Dated:	· •
	Richard A. Lerner
SIGNATURE WITNESSED BY:	•
(1) Date:	
(-) 5000	Cionatura of Witness

Assignment Application Nos.: 12/322,938 PCT Application No.: Page 4	
Dated:	Vaughn V. Smider
SIGNATURE WITNESSED BY:	
(1) Date;	Signature of Witness
Dated:	Peter G. Schultz
SIGNATURE WITNESSED BY:	
(1) Date:	Signature of Witness

ASSIGNMENT OF PATENT APPLICATION

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Application No.	Filed on	Title of Invention
12/322,938	February 7, 2009	Breaking Immunological Tolerance with a
.2/22//20	10014417 1, 2007	GeneticalLy Encoded Unnatural Amino Acid
PCT/US2009/000813	February 7, 2009	Breaking Immunological Tolerance with a
	1001000, 1, 2002	GeneticalLy Encoded Unnatural Amino Acid
61/203,948	December 29, 2008	Breaking Immunological Tolerance with a
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		A Novel Anti-TNF-Alpha Immunotherapy Based
61/203,947	December 29, 2008	on Vaccination with A TNF-Alpha Antigen
,	<u>'</u>	Containing an Antibody-Accessable P-
		Nitrophenylalanine
61/137,676	July 31, 2008	Breaking Immunological Tolerance with a
		GeneticalLy Encoded Unnatural Amino Acid
		A Novel Anti-TNF-Alpha Immunotherapy Based
61/137,635	July 31, 2008	on Vaccinationwith A TNF-Alpha Antigen
	,	Containing an Antibody-Accessable P-
	<u> </u>	Nitrophenylalanine
61/135,947	July 25, 2008	Breaking Immunological Tolerance with a
	ļ	GeneticalLy Encoded Unnatural Amino Acid
	;	A Novel Anti-TNF-Alpha Immunotherapy Based
61/135,969	July 25, 2008	on Vaccinationwith A TNF-Alpha Antigen
		Containing an Antibody-Accessable P- Nitrophenylalanine
		Breaking Immunological Tolerance with a
61/065,515	February 12, 2008	GeneticalLy Encoded Unnatural Amino Acid
1	 	A Novel Anti-TNF-Alpha Immunotherapy Based
		on Vaccinationwith A TNF-Alpha Antigen
61/065,590	February 12, 2008	Containing an Antibody-Accessable P-
		Nitrophenylalanine
	 	Breaking Immunological Tolerance with a
61/065,148	February 8, 2008	GeneticalLy Encoded Unnatural Amino Acid
		A Novel Anti-TNF-Alpha Immunotherapy Based
		on Vaccinationwith A TNF-Alpha Antigen
61/065,147 February 8, 2008	Containing an Antibody-Accessable P-	
		Nitrophenylalanine

Assignment

Application Nos.: 12/322,938

PCT Application No.:

Page 2

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IN TESTIMONY WHEREOF, Assignors have signed his/her name on the date indicated.

Dated:		
	Jan Grunewald	
SIGNATURE WITNESSED BY:		
(1) Date:		
	Signature of Witness	

PATENT REEL: 022650 FRAME: 0625 · .

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A.

Application Nos.: 12/322,938 PCT Application No.: Page 3	
Dated: 4-28-09	Meng-Lin Tsao
SIGNATURE WITNESSED BY:	
(1) Date: $4-28-09$	Signature of Witness
Dated:	Roshan Perera
SIGNATURE WITNESSED BY:	,
(1) Date:	
•	Signature of Witness
Dated:	Richard A. Lerner
	Kichard A. Lemer
SIGNATURE WITNESSED BY:	
(1) Date:	Signature of Witness

PATENT

REEL: 022650 FRAME: 0626

Vaughn V. Smider
•
Signature of Witness
Peter G. Schultz
Signature of Witness

ASSIGNMENT OF PATENT APPLICATION

JOINT

WHEREAS, Jan Grunewald, of 3855 Nobel Dr., Apt. 2206, San Diego, California 92122, Meng-Lin Tsao of 2079 Spy Glass Ct., Merced, California 95340, Roshan Perera of 1712 Wanda Way, Arlington, Texas 76001, Richard A. Lerner, 7750 East Roseland Drive, La Jolla, California 92037, Vaughn V. Smider of 7483 Healis Place, San Diego, California 92129, and Peter G. Schultz of 1650 La Jolla Rancho Road, La Jolla, California 92037, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below-identified applications for United States Letters Patent:

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12/322,938	February 7, 2009	Breaking Immunological Tolerance with a
		GeneticalLy Encoded Unnatural Amino Acid
PCT/US2009/000813	February 7, 2009	Breaking Immunological Tolerance with a
	1 00.00.7	GeneticalLy Encoded Unnatural Amino Acid
61/203,948	December 29, 2008	Breaking Immunological Tolerance with a
0203,510	December 25, 2000	GeneticalLy Encoded Unnatural Amino Acid
		A Novel Anti-TNF-Alpha Immunotherapy Based
61/203,947	December 29, 2008	on Vaccinationwith A TNF-Alpha Antigen
01/203,547	December 25, 2000	Containing an Antibody-Accessable P-
		Nitrophenylalanine
61/137,676	July 31, 2008	Breaking Immunological Tolerance with a
01/15/,0/0	July 31, 2006	GeneticalLy Encoded Unnatural Amino Acid
1		A Novel Anti-TNF-Alpha Immunotherapy Based
61/137,635	July 31, 2008	on Vaccinationwith A TNF-Alpha Antigen
01/13/,033	July 31, 2008	Containing an Antibody-Accessable P-
		Nitrophenylalanine
61/135,947	July 25, 2008	Breaking Immunological Tolerance with a
01/133,547	July 25, 2000	GeneticalLy Encoded Unnatural Amino Acid
	July 25, 2008	A Novel Anti-TNF-Alpha Immunotherapy Based
61/135,969		on Vaccinationwith A TNF-Alpha Antigen
01/155,505		Containing an Antibody-Accessable P-
		Nitrophenylalanine
61/065,515	February 12, 2008	Breaking Immunological Tolerance with a
01/003,513	1 Columny 12, 2006	GeneticalLy Encoded Unnatural Amino Acid
	February 12, 2008	A Novel Anti-TNF-Alpha Immunotherapy Based
61/065,590		on Vaccinationwith A TNF-Alpha Antigen
01/003,390		Containing an Antibody-Accessable P-
		Nitrophenylalanine
61/065,148	February 8, 2008	Breaking Immunological Tolerance with a
01/005,176	1 coluary 6, 2006	GeneticalLy Encoded Unnatural Amino Acid
61/065,147	February 8, 2008	A Novel Anti-TNF-Alpha Immunotherapy Based
		on Vaccinationwith A TNF-Alpha Antigen
		Containing an Antibody-Accessable P-
		Nitrophenylalanine

Assignment Application Nos.: 12/322,938 PCT Application No.: Page 2

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IN TESTIMONY WHEREOF, Assignors have signed his/her name on the date indicated.

Jan Grunewald
nature of Witness
_

PATENT

....

REEL: 022650 FRAME: 0629

Assignment Application Nos.: 12/322,938 PCT Application No.:		
Page 3		
Dated:	Meng-Lin Tsao	_
SIGNATURE WITNESSED BY:		
(1) Date:	Signature of Witness	
Dated: 4/20/09	Roshan Perera	-
SIGNATURE WITNESSED BY: (1) Date: $4/20/09$	Signature of Witness UTA DEPT. CHAIR	
Dated:	Richard A. Lerner	
SIGNATURE WITNESSED BY:		
(1) Date:		District Section 2010 Sec
	Signature of Witness	

Assignment Application Nos.: 12/322,938 PCT Application No.: Page 4	
Dated:	
	Vaughn V. Smider
SIGNATURE WITNESSED BY:	
(1) Date:	
	Signature of Witness
Dated:	
	Peter G. Schultz
SIGNATURE WITNESSED BY:	
(1) Date:	
	Signature of Witness

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Application No.	Filed on	Title of Invention
12/222 029	Fabrury 7, 2000	Breaking Immunological Tolerance with a
12/322,938	February 7, 2009	GeneticalLy Encoded Unnatural Amino Acid
PCT/US2009/000813	Eshman, 7, 2000	Breaking Immunological Tolerance with a
PC1/032009/000813	February 7, 2009	GeneticalLy Encoded Unnatural Amino Acid
61/203,948	December 29, 2008	Breaking Immunological Tolerance with a
01/203,948	December 29, 2008	GeneticalLy Encoded Unnatural Amino Acid
		A Novel Anti-TNF-Alpha Immunotherapy Based
61/203,947	December 29, 2008	on Vaccinationwith A TNF-Alpha Antigen
01/203,947	December 29, 2006	Containing an Antibody-Accessable P-
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61/137,676	July 31, 2008	Breaking Immunological Tolerance with a
01/13/,0/0	July 31, 2006	GeneticalLy Encoded Unnatural Amino Acid
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61/137,635	July 31, 2008	on Vaccinationwith A TNF-Alpha Antigen
01/13/,033	July 31, 2000	Containing an Antibody-Accessable P-
		Nitrophenylalanine
61/135,947	July 25, 2008	Breaking Immunological Tolerance with a
01,130,717	July 23, 2000	GeneticalLy Encoded Unnatural Amino Acid
	July 25, 2008	A Novel Anti-TNF-Alpha Immunotherapy Based
61/135,969		on Vaccinationwith A TNF-Alpha Antigen
01/133,303		Containing an Antibody-Accessable P-
		Nitrophenylalanine
61/065,515	February 12, 2008	Breaking Immunological Tolerance with a
01/005,515	1 columny 12, 2000	GeneticalLy Encoded Unnatural Amino Acid
	February 12, 2008	A Novel Anti-TNF-Alpha Immunotherapy Based
61/065,590		on Vaccinationwith A TNF-Alpha Antigen
01/003,390		Containing an Antibody-Accessable P-
		Nitrophenylalanine
61/065,148	1/065,148 February 8, 2008	Breaking Immunological Tolerance with a
0005,1.10		GeneticalLy Encoded Unnatural Amino Acid
	February 8, 2008	A Novel Anti-TNF-Alpha Immunotherapy Based
61/065,147		on Vaccinationwith A TNF-Alpha Antigen
017005,147		Containing an Antibody-Accessable P-
		Nitrophenylalanine

Assignment Application Nos.: 12/322,938 PCT Application No.: Page 2

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Dated:	
	Jan Grunewald
SIGNATURE WITNESSED BY:	
(1) Date:	
	Signature of Witness

Application Nos.: 12/322,938 PCT Application No.: Page 3	
Dated:	Meng-Lin Tsao
	wichg-Lin 18a0
SIGNATURE WITNESSED BY:	
(1) Date:	Signature of Witness
Dated:	Roshan Perera
SIGNATURE WITNESSED BY:	
(1) Date:	Signature of Witness
Dated: 4/15/09	CALL
	Richard A. Lerner
SIGNATURE WITNESSED BY: (1) Date: Upul 15, 2009	Paula Foley Signature of Witness

PATENT

REEL: 022650 FRAME: 0634

Assignment Application Nos.: 12/322,938 PCT Application No.: Page 4	
Dated:	Vaughn V. Smider
SIGNATURE WITNESSED BY: (1) Date:	Signature of Witness
Dated:	Peter G. Schultz
SIGNATURE WITNESSED BY: (1) Date:	Signature of Witness

ASSIGNMENT OF PATENT APPLICATION

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12/222 029	3/222 029 Fahman, 7 2000	Breaking Immunological Tolerance with a
12/322,938 Februa	February 7, 2009	GeneticalLy Encoded Unnatural Amino Acid
PCT/US2009/000813	Falaman, 7, 2000	Breaking Immunological Tolerance with a
PC1/US2009/000813	February 7, 2009	GeneticalLy Encoded Unnatural Amino Acid
61/202 049	Dagambar 20, 2009	Breaking Immunological Tolerance with a
61/203,948	December 29, 2008	GeneticalLy Encoded Unnatural Amino Acid
		A Novel Anti-TNF-Alpha Immunotherapy Based
61/202 047	D	on Vaccinationwith A TNF-Alpha Antigen
61/203,947	December 29, 2008	Containing an Antibody-Accessable P-
		Nitrophenylalanine
(1/1)27 (2)	I-121 2000	Breaking Immunological Tolerance with a
61/137,676	July 31, 2008	GeneticalLy Encoded Unnatural Amino Acid
		A Novel Anti-TNF-Alpha Immunotherapy Based
(1/127/25	11 21. 2000	on Vaccinationwith A TNF-Alpha Antigen
61/137,635	July 31, 2008	Containing an Antibody-Accessable P-
		Nitrophenylalanine
61/125 047	I.J. 25 2009	Breaking Immunological Tolerance with a
61/135,947	July 25, 2008	GeneticalLy Encoded Unnatural Amino Acid
	July 25, 2008	A Novel Anti-TNF-Alpha Immunotherapy Based
61/125 060		on Vaccinationwith A TNF-Alpha Antigen
61/135,969		Containing an Antibody-Accessable P-
		Nitrophenylalanine
61/065,515	Echman, 12, 2009	Breaking Immunological Tolerance with a
01/005,515	February 12, 2008	GeneticalLy Encoded Unnatural Amino Acid
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61/065 500		on Vaccinationwith A TNF-Alpha Antigen
61/065,590		Containing an Antibody-Accessable P-
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61/065 140	E-1 0 2000	Breaking Immunological Tolerance with a
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61/065,147	February 8, 2008	A Novel Anti-TNF-Alpha Immunotherapy Based
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Assignment Application Nos.: 12/322,938 PCT Application No.: Page 2

WHEREAS, The Scripps Research Institute, a corporation, located at 10550 North Torrey Pines Road, La Jolla, California 92037, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and applications and to all foreign counterparts thereof (including all patents, patent applications, utility models and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on any patent application claiming priority from the same in the United States and all countries throughout the world, and in and to any such applications, foreign counterparts, patents, Letters Patent and Registrations which claim priority from the application or which claim priority from a related application that

the above applications claim priority to, including as provided for by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any foreign counterpart, division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignee, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

IN TESTIMONY WHEREOF, Assignors have signed his/her name on the date indicated.

Dated:	Jan Grunewald
	Jan Grunewald
SIGNATURE WITNESSED BY:	
(1) Date:	
	Signature of Witness

Assignment Application Nos.: 12/322,938 PCT Application No.: Page 3	
Dated:	Meng-Lin Tsao
•	-
SIGNATURE WITNESSED BY:	
(1) Date:	· · · · · · · · · · · · · · · · · · ·
	Signature of Witness
Dated:	
Dated.	, Roshan Perera
SIGNATURE WITNESSED BY:	•
(1) Date:	
	Signature of Witness
	•
Dated:	
	Richard A. Lerner
SIGNATURE WITNESSED BY:	
(1) Date:	
	Signature of Witness

Assignment

Application Nos.: 12/322,938

PCT Application No.:

Page 4

Dated: 4-16-09

Waughn V. Smider

SIGNATURE WITNESSED BY:

(1) Date: 4/10/09

Dated: 4-16-09

Signature of Witness

SIGNATURE WITNESSED BY:

RECORDED: 05/07/2009

(1) Date: 4/6/09

Signature of Witness