PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Mohamed Attawia	09/10/2009
Thomas M. DiMauro	09/23/2009
Hassan Serhan	09/30/2009
Sudhakar Kadiyala	09/08/2009
David Urbahns	08/11/2009
Gregory Collins	08/06/2009
Laura J. Brown	08/13/2009
Jeffrey C. Geesin	08/13/2009

RECEIVING PARTY DATA

Name:	DePuy Spine, Inc.
Street Address:	325 Paramount Drive
City:	Raynham
State/Country:	MASSACHUSETTS
Postal Code:	02767-0350

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	12454200

CORRESPONDENCE DATA

(978)341-0136 Fax Number:

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

978-341-0036 Phone: Email: kelley.farr@hbsr.com Correspondent Name: Deirdre E. Sanders, Esq.

Address Line 1: 530 Virginia Road, P.O. Box 9133 Address Line 2: Hamilton, Brook, Smith & Reynolds, P.C. Address Line 4: Concord, MASSACHUSETTS 01742

REEL: 023315 FRAME: 0141

PATENT

500978103

ATTORNEY DOCKET NUMBER:	3518.1019-001
NAME OF SUBMITTER:	Kelley A. Farr
Total Attachments: 18	
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PATENT REEL: 023315 FRAME: 0142

<u>Joint</u>

ASSIGNMENT

WHEREAS, we, Mohamed Attawia, Thomas M. DiMauro, Hassan Serhan, Sudhakar Kadiyala, David Urbahns, Gregory Collins, Laura J. Brown and Jeffrey C. Geesin, have invented a certain improvement in Transdiscal Administration of Cycline Compounds described in an application for Patent,

	the specification of which is about to be filed in the United States Patent Office (use for utility (37 CFR § 1.53(b)) and design filings only);
	is about to be filed in the United States Patent Office as a Provisional Application;
\boxtimes	the specification of which is United States Application No. 12/454,200, filed May 14, 2009;
	the specification of which is a Patent Cooperation Treaty Application, International Application No. [], filed [], which designates the United States of America [and is assigned United States Application No. []];
	which was patented under United States Patent No. [].

WHEREAS, **DePuy Spine**, **Inc.** (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the **State of Ohio**, and having a usual place of business at **325 Paramount Drive**, **Raynham**, **Massachusetts 02767-0350** desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America. its territories and all foreign countries, in and to said invention as described in said application. together with the entire right, title and interest in and to said application and such Letters Patent as may issue on said invention; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made: we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein; we hereby expressly authorize the filing of an International Patent Application under the Patent Cooperation Treaty which corresponds to and claims the priority of the above-identified application;

#911071 v1 - 3518.1019-001 - Assignment - Joint

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of any future applications including substitution, reissue, divisional or continuation applications, and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request each Patent Office and the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said invention to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we had date set forth below.	ave hereunto set our hands and affixed our seals the
Inventor's Signature:	iamed Attawia
State/Commonwealth of New Sersey County of Now Sersey	anied Attawia
On this <u>10</u> day of <u>Suptemb</u> , public, personally appeared Mohamed Attar	20 09, before me, the undersigned notary wia,
personally known to me, or	
proved to me through satisfactory ev	ridence of identification, which was
to be the person whose name was signed on acknowledged that he/she signed the forego	
(SEAL)	Notary Public <u>Valeue M. Brooks</u> (print name)
	Yalevie M. Brooks (print name)
	My Commission expires\/\ _/
VALEDIE M. DDAAVO	

VALERIE M. BROOKS

NOTARY PUP OF NEW JERSEY

MY COMMISSIO: PES NOV. 19, 2012

Inventor's Signature:	
	nas M. DiMauro
State/Commonwealth	
of County of	
County of	
On this day of public, personally appeared Thomas M. Di	20, before me, the undersigned notary Mauro,
personally known to me, or	
proved to me through satisfactory e	vidence of identification, which was
	n the foregoing instrument in my presence, and bing instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires/
Inventor's Signature:	
	assan Serhan
State/Commonwealth	
of County of	
County of	
On this day of public, personally appeared Hassan Serhan	20, before me, the undersigned notary
personally known to me, or	
proved to me through satisfactory e	vidence of identification, which was
	n the foregoing instrument in my presence, and bing instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires//

Inventor's Signature:	
State/Commonwealth of County of	dhakar Kadiyala
public, personally appeared Sudhakar Kac	20, before me, the undersigned notary diyala,
personally known to me, or proved to me through satisfactory	evidence of identification, which was
to be the person whose name was signed acknowledged that he/she signed the forest	on the foregoing instrument in my presence, and going instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires/
Inventor's Signature:	
	David Urbahns
On this day of public, personally appeared David Urbahr	
personally known to me, or	
proved to me through satisfactory	evidence of identification, which was
	on the foregoing instrument in my presence, and going instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires//

Inventor's Signature:	
•	egory Collins
	20, before me, the undersigned notary s,
personally known to me, or	
proved to me through satisfactory e	vidence of identification, which was
to be the person whose name was signed or acknowledged that he/she signed the forego	the foregoing instrument in my presence, and ing instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name) My Commission expires/
I	
Inventor's Signature:La	ura J. Brown
State/Commonwealth of	
County of	
On this day of public, personally appeared Laura J. Brown	20, before me, the undersigned notary
personally known to me, or	
proved to me through satisfactory ev	vidence of identification, which was
to be the person whose name was signed on acknowledged that he/she signed the forego	the foregoing instrument in my presence, and ing instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires/

Inventor's Signature:	
	rey C. Geesin
On this day of public, personally appeared Jeffrey C. Geesi	20, before me, the undersigned notary n,
personally known to me, or	
proved to me through satisfactory ev	idence of identification, which was
to be the person whose name was signed on acknowledged that he/she signed the foregoi	the foregoing instrument in my presence, and ng instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires/

Joint

<u>ASSIGNMENT</u>

WHEREAS, we, Mohamed Attawia, Thomas M. DiMauro, Hassan Serhan, Sudhakar Kadiyala, David Urbahns, Gregory Collins, Laura J. Brown and Jeffrey C. Geesin, have invented a certain improvement in Transdiscal Administration of Cycline Compounds described in an application for Patent,

	the specification of which is about to be filed in the United States Patent Office (use for utility (37 CFR § 1.53(b)) and design filings only);
	is about to be filed in the United States Patent Office as a Provisional Application
\boxtimes	the specification of which is United States Application No. 12/454,200, filed May 14, 2009;
	the specification of which is a Patent Cooperation Treaty Application, International Application No. [], filed [], which designates the United States of America [and is assigned United States Application No. []];
	which was patented under United States Patent No. [].

WHEREAS, **DePuy Spine**, **Inc.** (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the **State of Ohio**, and having a usual place of business at **325 Paramount Drive**, **Raynham**, **Massachusetts 02767-0350** desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America. its territories and all foreign countries, in and to said invention as described in said application. together with the entire right, title and interest in and to said application and such Letters Patent as may issue on said invention; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein; we hereby expressly authorize the filing of an International Patent Application under the Patent Cooperation Treaty which corresponds to and claims the priority of the above-identified application;

> PATENT REEL: 023315 FRAME: 0149

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of any future applications including substitution, reissue, divisional or continuation applications, and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request each Patent Office and the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said invention to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the

Inventor's Signature: Tember 9.23.09
Thomas M. DiMauro
State/Commonwealth of Massachusetts
County of Pristo 1
On this 33 day of September 2009, before me, the undersigned notary public, personally appeared Thomas M. DiMauro,
personally known to me, or
proved to me through satisfactory evidence of identification, which was
to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed. AMY PELLETIER Notary Public Notary Public Notary Public
Commonwealth of Massachusetts Amy Peter (print name My Commission Expires January 21, 2011 My Commission expires 1 21 2011
Inventor's Signature: 9.30-89
State/Commonwealth of Massachusetts County of Postol
On this 30 day of Septembe 2009, before me, the undersigned notary public, personally appeared Hassan Serhan,
personally known to me, or
proved to me through satisfactory evidence of identification, which was
to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.
(SEAL) AMY PELLETIER Notary Public Notary Public Amy Pelletter (print name Commonwealth of Massachusetts Commission expires / / 2/ / 20// My Commission Expires January 21 2011

Inventor's Signature:
Sudhakar Kadiyala
State/Commonwealth
of Massachusells County of Bristol
2
On this day of
public, personally appeared Sudhakar Kadiyala,
personally known to me, or
proved to me through satisfactory evidence of identification, which was
to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.
(SISN.) AMY PELLETIER Notary Public Ame Pelletta
Notary Public Commonwealth of Massachusetts Notary Public Troval (print name)
My Commission Expires January 21, 2011 My Commission expires / /21 / 2011
Wity Commission expires 1 /801/
Inventor's Signature: David Urbahns
State/Commonwealth
of massachusetts
County of Bristol
On this 1 day of August 2009, before me, the undersigned notary public, personally appeared David Urbahns,
personally known to me, or
proved to me through satisfactory evidence of identification, which was
to be the person whose name was signed on the foregoing instrument in my presence, and acknowledged that he/she signed the foregoing instrument as his/her free act and deed.
As me month property
Notary Public
Commonwealth of Massachusetts Amy Pelleties (print name)
My Commission Expires January 21, 2011 My Commission expires 1 / 21/2011

- 4 -

Inventor's Signat	ure: Augy	Allin
State/Commonw of MASACH County of BR	ealth //	regory Collins
On this	day of <u>fluctu</u> y appeared Gregory Collin	2009, before me, the undersigned notary ns,
personall	y known to me, or	
proved to	me through satisfactory e	evidence of identification, which was
		n the foregoing instrument in my presence, and oing instrument as his/her free act and deed.
(SEAL)	Patricia Lynn Diugos Notary Public My Commission Expires 1 May 2°, 2010	Notary Public Attract Man Delas (print name) My Commission expires 5/31/2010
Inventor's Signat		
State/Commonw ofCounty of	ealth	aura J. Brown
On this		20, before me, the undersigned notary n,
personall	y known to me, or	
proved to	me through satisfactory e	evidence of identification, which was
		n the foregoing instrument in my presence, and oing instrument as his/her free act and deed.
(SEAL)		Notary Public
		(print name)
		My Commission expires/

Inventor's Signature:	Left C. C
State/Commonwealth ofCounty of	Jeffrey C. Geesin
On this day of public, personally appeared Jeffrey C.	Geesin, 20, before me, the undersigned notary
	ory evidence of identification, which was
	ned on the foregoing instrument in my presence, and coregoing instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires//

Joint

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#911071 v1 - 3518.1019-001 - Assignment - Joint

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IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the

Inventor's Signature:	
	nas M. DiMauro
On this day of public, personally appeared Thomas M. Dif	20, before me, the undersigned notary Mauro,
personally known to me, or	
proved to me through satisfactory ev	vidence of identification, which was
to be the person whose name was signed on acknowledged that he/she signed the forego	the foregoing instrument in my presence, and ing instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires//
Inventor's Signature:	
Ha	assan Serhan
State/Commonwealth of County of	
	20, before me, the undersigned notary
personally known to me, or	
proved to me through satisfactory ev	vidence of identification, which was
to be the person whose name was signed on acknowledged that he/she signed the forego	the foregoing instrument in my presence, and ing instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires / /

Inventor's Signature:	
Sud	hakar Kadiyala
State/Commonwealth	•
of County of	
County of	
On this day of public, personally appeared Sudhakar Kadi	20, before me, the undersigned notary yala,
personally known to me, or	
proved to me through satisfactory e	vidence of identification, which was
to be the person whose name was signed or acknowledged that he/she signed the forego	n the foregoing instrument in my presence, and bing instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires//
I	
Inventor's Signature:	avid Urbahns
State/Commonwealth	avid Orbanns
of County of	
County of	
On this day of public, personally appeared David Urbahns	20, before me, the undersigned notary
personally known to me, or	
proved to me through satisfactory e	vidence of identification, which was
to be the person whose name was signed or acknowledged that he/she signed the forego	the foregoing instrument in my presence, and bing instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires//

Inventor's Signature:	
	Gregory Collins
State/Commonwealth	
of	
of County of	
041	
On this day of	20, before me, the undersigned notary
public, personally appeared Gregory Colli	ins,
personally known to me, or	
proved to me through satisfactory	evidence of identification, which was
to be the person whose name was signed a	on the foresting instrument in a second
acknowledged that he/she signed the fores	on the foregoing instrument in my presence, and going instrument as his/her free act and deed.
(SEAL)	Notary Public
	(print name)
	My Commission expires//
Inventor's Signature: Laura Sa	44.4.
Inventor's Signature.	aura J. Brown
State/Commonwealth	Zadra J. Diowii
of New Treesee	
County of Sangelest	
On this S M day of Mu public, personally appeared Laura J. Brow	20_09 before me, the undersigned notary
personally known to me, or	
proved to me through satisfactory	evidence of identification, which was
to be the person where person vice signed a	and the Commercial state of th
	on the foregoing instrument in my presence, and
acknowledged that he/she signed the foreg	going instrument as his/her free act and deed.
(SEAL)	Notary Public Tumos Lunde
	Paricia C- Twadde(print name)
	My Commission expires 6/2572012

PATRICIA L TWADDLE Notary Public State of New Jersey My Commission Expires Jun 25, 2012

Docket No. 3518.1019-001

	and the same of th
Inventor's Signature: Teffuy	(Jesser)
/ / Je	ffrey C. Gesin
State/Commonwealth	• ,
of New Jurey.	
County of Sanucy	
On this day of day of day of day of public, personally appeared Jeffrey C. Geo	20 <u>04</u> , before me, the undersigned notary
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personally known to me, or	
proved to me through satisfactory e	evidence of identification, which was
to be the person whose name was signed o	on the foregoing instrument in my presence, and
-	going instrument as his/her free act and deed.
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(SEAL)	Notary Public & Marca L Myradol
Section 1	-
	Tashau - Tuncha (print name)
	My Commission expires 6/257 7007
The state of the s	

PATRICIA L TWADDLE Notary Public State of New Jersey My Commission Expires Jun 25, 2012