

## PATENT ASSIGNMENT

Electronic Version v1.1  
 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	Patent Security Agreement										
CONVEYING PARTY DATA											
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Quark Pharmaceuticals, Inc.</td> <td>07/14/2011</td> </tr> <tr> <td>Q.B.I. Enterprises Ltd.</td> <td>07/14/2011</td> </tr> </tbody> </table>		Name	Execution Date	Quark Pharmaceuticals, Inc.	07/14/2011	Q.B.I. Enterprises Ltd.	07/14/2011				
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Q.B.I. Enterprises Ltd.	07/14/2011										
RECEIVING PARTY DATA											
<table border="1"> <tr> <td>Name:</td> <td>Nitto Denko Corporation</td> </tr> <tr> <td>Street Address:</td> <td>Herbis 2-5-25 Umeda, Kita-Ku</td> </tr> <tr> <td>City:</td> <td>Osaka</td> </tr> <tr> <td>State/Country:</td> <td>JAPAN</td> </tr> <tr> <td>Postal Code:</td> <td>530-0001</td> </tr> </table>		Name:	Nitto Denko Corporation	Street Address:	Herbis 2-5-25 Umeda, Kita-Ku	City:	Osaka	State/Country:	JAPAN	Postal Code:	530-0001
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PROPERTY NUMBERS Total: 3											
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13255214</td> </tr> <tr> <td>PCT Number:</td> <td>US2011020298</td> </tr> <tr> <td>PCT Number:</td> <td>US2011053496</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13255214	PCT Number:	US2011020298	PCT Number:	US2011053496		
Property Type	Number										
Application Number:	13255214										
PCT Number:	US2011020298										
PCT Number:	US2011053496										
CORRESPONDENCE DATA											
Fax Number:	(917)777-4104										
Phone:	212-735-3000										
Email:	mmcguire@skadden.com										
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i>											
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ATTORNEY DOCKET NUMBER:	092850/13										
NAME OF SUBMITTER:	Elaine D. Ziff										

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**Total Attachments: 9**

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## PATENT SECURITY AGREEMENT

This PATENT SECURITY AGREEMENT (the "Patent Security Agreement"), dated July 14, 2011, by QUARK PHARMACEUTICALS, INC., a California corporation having a principal place of business at 6501 Dumberton Circle, Fremont, CA 94555 ("Quark") and Q.B.I. Enterprises Ltd, an Israeli corporation having a principal place of business at Weizmann Science Park, P.O.B. 4571, Ness Zona, 70400, Israel, ("Quark Israel") and, together with Quark, collectively, the "Grantors" and, individually, each a "Grantor"), in favor of NITTO DENKO CORPORATION, a company organized under the laws of Japan having a principal place of business at Herbis Osaka 2-5-25 Umeda, Kita-Ku Japan (the "Secured Party").

### WITNESSETH:

WHEREAS, Grantors and Secured Party have entered into a certain Clinical Trial Loan Agreement dated June 23, 2011 (as the same may be amended, restated, supplemented or otherwise modified from time to time, the "Loan Agreement");

WHEREAS, the Grantors are party to a Pledge and Security Agreement of even date herewith (as amended, amended and restated, supplemented or otherwise modified from time to time, the "Security Agreement") in favor of the Secured Party, pursuant to which the Grantors are required to execute and deliver this Patent Security Agreement; and

WHEREAS, the execution and delivery by Grantors of the Security Agreement and this Patent Security Agreement is a condition to making the Loan to Quark under the Loan Agreement.

NOW, THEREFORE, in consideration of the premises, and for other good and valuable consideration the sufficiency of which is hereby acknowledged, Grantors hereby agree as follows:

SECTION 1. Defined Terms. Capitalized terms not otherwise defined herein shall have the meanings assigned to such terms in the Security Agreement.

SECTION 2. Grant of Security Interest in Patent Collateral. As security for the prompt and complete payment and performance in full of all the Secured Obligations when due, each Grantor hereby grants to the Secured Party a first priority continuing lien on and security interest in its respective right, title and interest in, to, and under the following types of property, whether now owned or existing or hereafter acquired or arising, and wherever located (all of which being hereinafter collectively referred to the "Patent Collateral"):

(a) all Intellectual Property identified on Schedule 1 attached (as such Schedule shall be updated from time to time) which Schedule, for clarity, includes all Jointly Owned IP.

(b) all other siRNA IP, including, without limitation, all Intellectual Property identified on Table II of Schedule 2 hereto, as such Schedule shall be updated from time to time, except for such siRNA IP as to which a security interest may not be granted by Grantors without violating the contract rights or other rights of a third party after giving effect to Sections 9-406 through 9-409 of the UCC (the "Excluded IP") (the Intellectual Property granted pursuant to subsection (a) and (b) of this Section 2 are, together, the "Secured siRNA IP"); and

(c) to the extent not covered by clause (a) or (b) of this sentence, all Proceeds, products, accessions, additions, substitutions, replacements, rents, and profits of or in respect to any or all of the foregoing.

**SECTION 3. Security Agreement.** The security interest granted pursuant to this Patent Security Agreement is granted concurrently and in conjunction with the security interest granted to the Secured Party pursuant to the Security Agreement and Grantors hereby acknowledge and affirm that the rights and remedies of the Secured Party with respect to the security interest in the Patent Collateral made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event that any provision of this Patent Security Agreement is deemed to conflict with the Security Agreement, the provisions of the Security Agreement shall control.

**SECTION 4. Termination.** This Patent Security Agreement shall terminate at such time as the Security Agreement terminates and, thereafter, upon Grantors' request and at the Grantors' sole cost, the Secured Party shall execute and deliver to the Grantors an instrument releasing the lien and security interest in the Patent Collateral granted under this Patent Security Agreement.

**SECTION 5. Counterparts.** This Patent Security Agreement may be executed in any number of counterparts and by the different parties hereto on separate counterparts, each of which when so executed and delivered shall be an original, but all of which shall together constitute one and the same instrument.

**SECTION 6. CHOICE OF LAW.** THIS PATENT SECURITY AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK.

*[Signature Page Follows]*

IN WITNESS WHEREOF, each Grantor has caused this PATENT SECURITY AGREEMENT to be duly executed and delivered by its duly authorized officer as of the date first above written.

Very truly yours,

QUARK PHARMACEUTICALS, INC.

By: 

Name: DANIEL ZURR  
Title: CEO

Q.B.I. ENTERPRISES LTD

By: 

Name: DANIEL ZURR  
Title: CEO

Accepted and Agreed:

NITTO DENKO CORPORATION,  
as the Secured Party

By: \_\_\_\_\_

Name: Kageshi Maruyama  
Title: Corporate Vice President

SIGNATURE PAGE TO PATENT SECURITY AGREEMENT

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Very truly yours,

QUARK PHARMACEUTICALS, INC.

By: \_\_\_\_\_  
Name:  
Title:

Q.B.I. ENTERPRISES LTD

By: \_\_\_\_\_  
Name:  
Title:

Accepted and Agreed:

NITTO DENKO CORPORATION,  
as the Secured Party

By:   
Name: Kageshi Maruyama  
Title: Corporate Vice President

SIGNATURE PAGE TO PATENT SECURITY AGREEMENT

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PATENT  
REEL: 028357 FRAME: 0128

## **SCHEDULE 1 to Patent Security Agreement**

### **1. "Jointly Owned IP" - Nitto Denko & Quark**

<b>Docket ID</b>	<b>Owner</b>	<b>App No.</b>	<b>App Date</b>	<b>Country</b>	<b>Status</b>	<b>Grant No.</b>
220/PCT1	Quark Nitto Denko	PCT/US2010/05957	8-Dec-2010	PCT	Pending	
220/US1	Quark Nitto Denko	12/963,600	8-Dec-2010	USA	Pending	
224/USP1	Quark Nitto Denko	61/388572	30-Sep-2010	USA	Pending	

### **2. siRNA IP owned by Quark or Quark Israel**

<b>Docket ID</b>	<b>Owner</b>	<b>App No.</b>	<b>App Date</b>	<b>Country</b>	<b>Status</b>	<b>Grant No.</b>
003/PCT1-US1	Quark	09/284782	12-Nov-1997	USA	Granted	6057111
162/US1	Quark	11/704600	8-Feb-2007	USA	Pending	
176/PCT1-US1	Quark	12/994,725	7-Jun-2009	USA	Pending	
177/PCT2-US1	Quark	13/081,934	23-Oct-2008	PCT	Pending	
178/PCT1-US1	Quark	12/528907	28-Feb-2008	USA	Pending	

178/PCT2-US1	Quark	12/733998	4-Sep-2008	USA	Pending	
180/PCT1-US1	Quark	12/451140	27-Apr-08	USA	Pending	

Docket ID	Owner	App.No.	App Date	Country	Status	Grant No.
188/PCT2-US1	Quark	13/082,161	22-Oct-2009	USA	Pending	
202/PCT1	Quark	PCT/US10/28200	23-Mar-2010	PCT	Pending	
208/PCT1	Quark	PCT/US2010/59597	9-Dec-2010	PCT	Pending	
213/PCT1	Quark	PCT/US2010/0581	25-Nov-2010	PCT	Pending	
		23				
215/USP1	Quark	61/419918	6-Dec-2010	USA	Pending	
217/PCT1	Quark	PCT/US2010/0490	16-Sep-2010	PCT	Pending	
		47				
231/USP1	Quark	61/419910	6-Dec-2010	USA	Pending	
234/USP1	Quark	61/497142	15-Jun-2011	USA	Pending	



**SCHEDULE 2  
TO  
PATENT SECURITY AGREEMENT**

**[THIS SCHEDULE REDACTED]**

ADDENDUM TO

SCHEDULE 1 TO PATENT SECURITY AGREEMENT

"Scheduled Intellectual Property"

[Redacted]

1. "Jointly Owned IP" - Nitto Denko & Quark

Docket ID	Title	Owner	App No.	App Date	Country	Status	Grant No.
224/PCT1	MODULATION of TIMP1 and TIMP2 EXPRESSION	Quark Denko	Nitto PCT/JUS11/53496	27-Sep-2011	PCT	Pending	

Docket ID	Title	Owner	App No.	App Date	Country	Status	Grant No.
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202/PCT1-US1	Compounds, Compositions and Methods of Treating Cancer and Fibrotic Diseases	Quark	13/255214	23-Mar-2010	USA	Pending	
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217/PCT2	OLIGONUCLEOTIDE COMPOUNDS COMPRISING NON-NUCLEOTIDE OVERHANGS	Quark	PCT/US11/020298	6-Jan-2011	PCT	Pending	
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