

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT2813508

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	RELEASE BY SECURED PARTY

CONVEYING PARTY DATA

Name	Execution Date
GENESIS CAPITAL MANAGEMENT, LLC, AS AGENT	03/04/2014

RECEIVING PARTY DATA

Name:	MARINA BIOTECH, INC.
Street Address:	3830 MONTE VILLA PARKWAY
City:	BOTHELL
State/Country:	WASHINGTON
Postal Code:	98021
Name:	CEQUENT PHARMACEUTICALS, INC.
Street Address:	3830 MONTE VILLA PARKWAY
City:	BOTHELL
State/Country:	WASHINGTON
Postal Code:	98021
Name:	MDRNA RESEARCH, INC.
Street Address:	3830 MONTE VILLA PARKWAY
City:	BOTHELL
State/Country:	WASHINGTON
Postal Code:	98021

PROPERTY NUMBERS Total: 205

Property Type	Number
Patent Number:	5681940
Patent Number:	6387700
Patent Number:	6403482
Patent Number:	6403566
Patent Number:	6506559
Patent Number:	6770740
Patent Number:	6831069
Patent Number:	6833361
Patent Number:	7081449
Patent Number:	7112242
Patent Number:	7157426

PATENT

Property Type	Number
Patent Number:	7166575
Patent Number:	7186691
Patent Number:	7186692
Patent Number:	7229966
Patent Number:	7244709
Patent Number:	7312206
Patent Number:	7329725
Patent Number:	7371404
Patent Number:	7407947
Patent Number:	7435720
Patent Number:	7538095
Patent Number:	7560438
Patent Number:	7622633
Patent Number:	7696343
Patent Number:	7704953
Patent Number:	7772189
Patent Number:	7780983
Patent Number:	7858117
Patent Number:	7863245
Patent Number:	7939505
Patent Number:	8063178
Application Number:	10505093
Application Number:	10505107
Application Number:	10594553
Application Number:	11576139
Application Number:	11744745
Application Number:	11793429
Application Number:	11826385
Application Number:	11905368
Application Number:	11905449
Application Number:	12004154
Application Number:	12039650
Application Number:	12039658
Application Number:	12039662
Application Number:	12039668
Application Number:	12085893
Application Number:	12206165
Application Number:	12225030
Application Number:	12376205

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REEL. 032685 FRAME. 0159

Property Type	Number
Application Number:	12445575
Application Number:	12445868
Application Number:	12448452
Application Number:	12515403
Application Number:	12528508
Application Number:	12528619
Application Number:	12528786
Application Number:	12529011
Application Number:	12529138
Application Number:	12529302
Application Number:	12529532
Application Number:	12552082
Application Number:	12580250
Application Number:	12602883
Application Number:	12618401
Application Number:	12632985
Application Number:	12672478
Application Number:	12682703
Application Number:	12726308
Application Number:	12726315
Application Number:	12750622
Application Number:	12806342
Application Number:	12807707
Application Number:	12870989
Application Number:	13057741
Application Number:	13057743
Application Number:	13076158
Application Number:	13105498
Application Number:	13130032
Application Number:	13196436
Application Number:	13291650
Application Number:	13314080
Application Number:	13327545
Application Number:	13350137
Application Number:	13378484
Application Number:	60493226
Application Number:	60497740
Application Number:	60501170
Application Number:	60510785

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REEL. 032685 FRAME. 0160

Property Type	Number
Application Number:	60515533
Application Number:	60517290
Application Number:	60518812
Application Number:	60529682
Application Number:	60564543
Application Number:	60568027
Application Number:	60570113
Application Number:	60570512
Application Number:	60570513
Application Number:	60613416
Application Number:	60625195
Application Number:	60637277
Application Number:	60651238
Application Number:	60656572
Application Number:	60667833
Application Number:	60717291
Application Number:	60727216
Application Number:	60728877
Application Number:	60733664
Application Number:	60741192
Application Number:	60774496
Application Number:	60778724
Application Number:	60806904
Application Number:	60821525
Application Number:	60823894
Application Number:	60825876
Application Number:	60825878
Application Number:	60862027
Application Number:	60868703
Application Number:	60894130
Application Number:	60910393
Application Number:	60916131
Application Number:	60932949
Application Number:	60932970
Application Number:	60934751
Application Number:	60934922
Application Number:	60934928
Application Number:	60934930
Application Number:	60934931

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REEL. 032685 FRAME. 0161

Property Type	Number
Application Number:	60934934
Application Number:	60934935
Application Number:	60934940
Application Number:	60934943
Application Number:	60934945
Application Number:	60934946
Application Number:	60947282
Application Number:	60953667
Application Number:	60955317
Application Number:	60956093
Application Number:	60969136
Application Number:	60972590
Application Number:	60972653
Application Number:	60973397
Application Number:	60973398
Application Number:	60976894
Application Number:	60988395
Application Number:	60988400
Application Number:	60988401
Application Number:	60988402
Application Number:	60989419
Application Number:	61010028
Application Number:	61013212
Application Number:	61013239
Application Number:	61015611
Application Number:	61022571
Application Number:	61086435
Application Number:	61086445
Application Number:	61106062
Application Number:	61114610
Application Number:	61119624
Application Number:	61141080
Application Number:	61167379
Application Number:	61252085
Application Number:	61258115
Application Number:	61318141
Application Number:	61325757
Application Number:	61328140
Application Number:	61329034

PATENT

REEL. 032685 FRAME. 0162

Property Type	Number
Application Number:	61467048
Application Number:	61532056
PCT Number:	US0512653
PCT Number:	US0515574
PCT Number:	US0516530
PCT Number:	US0535259
PCT Number:	US0545513
PCT Number:	US0613377
PCT Number:	US0640174
PCT Number:	US0641081
PCT Number:	US0645955
PCT Number:	US0767007
PCT Number:	US0781836
PCT Number:	US0807384
PCT Number:	US0807448
PCT Number:	US0853360
PCT Number:	US0855339
PCT Number:	US0855380
PCT Number:	US0855385
PCT Number:	US0855515
PCT Number:	US0855615
PCT Number:	US0855644
PCT Number:	US0855649
PCT Number:	US0862526
PCT Number:	US0864417
PCT Number:	US0878627
PCT Number:	US0952878
PCT Number:	US0952888
PCT Number:	US0960930
PCT Number:	US0964409
PCT Number:	US0966610
PCT Number:	US1055516
PCT Number:	US1130100
PCT Number:	US1133102
PCT Number:	US1133980
PCT Number:	US1134352
PCT Number:	US1134354
PCT Number:	US9827233

CORRESPONDENCE DATA**Fax Number:*****Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.*****Phone:** 2123260138**Email:** jbraibanti@pryorcashman.com**Correspondent Name:** JILL C. BRAIBANTI, PRYOR CASHMAN LLP**Address Line 1:** 7 TIMES SQUARE**Address Line 4:** NEW YORK, NEW YORK 10036

NAME OF SUBMITTER:	JILL C. BRAIBANTI
SIGNATURE:	/Jill C. Braibanti/
DATE SIGNED:	04/14/2014
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 39

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TERMINATION AND RELEASE OF SECURITY INTEREST

THIS TERMINATION AND RELEASE OF SECURITY INTEREST ("Release"), is dated as of March 4, 2014, by Genesis Capital Management, LLC, as agent for the purchasers (the "Agent") under (a) that certain Note and Warrant Purchase Agreement dated as of February 10, 2012 (the "Purchase Agreement"), by and among Marina Biotech, Inc., a Delaware corporation ("Marina"), Cequent Pharmaceuticals, Inc., a Delaware corporation ("CPI"), and MDRNA RESEARCH, Inc., a Delaware corporation ("Research"; jointly and severally, the "Borrower"), and the purchasers party thereto (the "Purchasers"); (b) that certain Security Agreement dated as of February 10, 2012 (the "Security Agreement"), executed and delivered in connection with the Purchase Agreement; and (c) that certain Intellectual Property Security Agreement dated as of February 10, 2012 (the "IP Security Agreement"), executed and delivered in collection with the Purchase Agreement. The Agent, together with the Purchasers and the successors and assigns of each, are referred to herein, collectively, as the "Secured Parties". Initially-capitalized terms used but not otherwise defined herein shall have the meanings given to such terms in the IP Security Agreement.

WHEREAS, pursuant to the terms of the IP Security Agreement as filed with the Assignment Division at the United States Patent and Trademark Office on February 15, 2012 as Reel 4718, Frame 0131 and Reel 027712, Frame 0200, the Borrowers granted to the Secured Parties a security interest in and lien on all of its patents, including, without limitation, the Patents identified on Schedule A attached hereto (the "Patent Collateral");

WHEREAS, the Secured Parties wish to release the security interest in and lien on all of the Borrowers' patents, including the Patent Collateral identified on Schedule A;

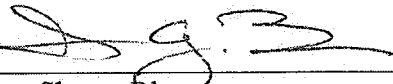
NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Secured Parties state as follows:

The Secured Parties hereby terminate and releases their security interest in and first priority lien on the Company's Patent Collateral, and the Lender hereby assigns and transfers to the Company, without recourse, all of its right, title and interest in and to each of the patents identified on Schedule A attached hereto effective as of the date set forth above.

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IN WITNESS WHEREOF, the undersigned has caused this Release to be duly executed, to take effect as of the date set forth above.

GENESIS CAPITAL MANAGEMENT, LLC, as Agent
for itself and on behalf of the Purchasers

By: 
Name: Shawn Rhynes
Title: Managing Director

SCHEDULE A

See attached

Patents and Patent Applications

FILING DATE	IDENTIFIER	ISSUE DATE	TITLE	FOREIGN FILINGS	OWNER	LICENSOR	LICENSEE	SUBLICENSEE OR LICENSEE OF MDRNA
12/18/1998	U.S. 6,506,559	1/14/2003	GENETIC INHIBITION BY DOUBLE-STRANDED RNA	N/A	CARNEGIE INSTITUTION OF WASHINGTON	CARNEGIE INSTITUTION OF WASHINGTON	MARNA BIOTECH, INC.	N/A
10/30/2002	U.S. 7,538,095	5/26/2009	GENETIC INHIBITION BY DOUBLE-STRANDED RNA	N/A	CARNEGIE INSTITUTION OF WASHINGTON	CARNEGIE INSTITUTION OF WASHINGTON	MARNA BIOTECH, INC.	N/A
7/13/2007	U.S. 11/826,385	N/A	GENETIC INHIBITION BY DOUBLE-STRANDED RNA	N/A	CARNEGIE INSTITUTION OF WASHINGTON	CARNEGIE INSTITUTION OF WASHINGTON	MARNA BIOTECH, INC.	N/A
10/01/2007	U.S. 11/905,449	N/A	GENETIC INHIBITION BY DOUBLE-STRANDED RNA	N/A	CARNEGIE INSTITUTION OF WASHINGTON	CARNEGIE INSTITUTION OF WASHINGTON	MARNA BIOTECH, INC.	N/A
9/28/2007	U.S. 11/905,368	N/A	GENETIC INHIBITION BY DOUBLE-STRANDED RNA	N/A	CARNEGIE INSTITUTION OF WASHINGTON	CARNEGIE INSTITUTION OF WASHINGTON	MARNA BIOTECH, INC.	N/A

FILING DATE	IDENTIFIER	ISSUE DATE	TITLE	FOREIGN FILINGS	OWNER	LICENSOR	LICENSEE	SUBLICENSEE OR LICENSEE OF MDRNA
10/30/2002	U.S. 7,560,438	7/14/2009	GENETIC INHIBITION BY DOUBLE-STRANDED RNA	N/A	CARNEGIE INSTITUTION OF WASHINGTON	CARNEGIE INSTITUTION OF WASHINGTON	MARINA BIOTECH, INC.	N/A
10/30/2002	U.S. 7,622,633	11/24/2009	GENETIC INHIBITION BY DOUBLE-STRANDED RNA	N/A	CARNEGIE INSTITUTION OF WASHINGTON	CARNEGIE INSTITUTION OF WASHINGTON	MARINA BIOTECH, INC.	N/A
12/21/1998	PCT/US1998/27233	N/A	GENETIC INHIBITION BY DOUBLE-STRANDED RNA	AU, CA, JP, EP	CARNEGIE INSTITUTION OF WASHINGTON	CARNEGIE INSTITUTION OF WASHINGTON	MARINA BIOTECH, INC.	N/A
3/28/2002	U.S. 7,112,242	9/26/2006	PEPTIDES FOR GENE DELIVERY	N/A	REAGENTS OF THE UNIV. OF MICHIGAN	REAGENTS OF THE UNIV. OF MICHIGAN	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH
3/30/1998	U.S. 6,387,700	5/14/2002	CATIONIC PEPTIDES, CYS-TRP-(LYS) _n , FOR GENE DELIVERY	N/A	REAGENTS OF THE UNIV. OF MICHIGAN	REAGENTS OF THE UNIV. OF MICHIGAN	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH

FILING DATE	IDENTIFIER	ISSUE DATE	TITLE	FOREIGN FILINGS	OWNER	LICENSOR	LICENSEE	SUBLICENSEE OR LICENSEE OF MDRNA
7/13/2000	U.S. 6,770,740	8/3/2004	CROSSLINKED DNA CONDENSATE COMPOSITIONS AND GENE DELIVERY METHODS	N/A	REAGENTS OF THE UNIV. OF MICHIGAN	REAGENTS OF THE UNIV. OF MICHIGAN	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH
6/15/2007	U.S. 60/934,751	N/A	BACTERIA MEDIATED GENE SILENCING	N/A	BETH ISRAEL DEACONESS MEDICAL CENTER	BETH ISRAEL DEACONESS MEDICAL CENTER	MARINA BIOTECH, INC.	VITHTERA LABORATORIES
1/04/2008	U.S. 61/010,028	N/A	BACTERIA MEDIATED GENE SILENCING	N/A	BETH ISRAEL DEACONESS MEDICAL CENTER	BETH ISRAEL DEACONESS MEDICAL CENTER	MARINA BIOTECH, INC.	VITHTERA LABORATORIES
6/13/2008	PCT/US2008/007384	N/A	BACTERIA MEDIATED TNF- α GENE SILENCING	EP, HK	BETH ISRAEL DEACONESS MEDICAL CENTER	BETH ISRAEL DEACONESS MEDICAL CENTER	MARINA BIOTECH, INC.	VITHTERA LABORATORIES
6/7/2010	U.S. 12/602,883	N/A	BACTERIA MEDIATED TNF- α GENE SILENCING	N/A	BETH ISRAEL DEACONESS MEDICAL CENTER	BETH ISRAEL DEACONESS MEDICAL CENTER	MARINA BIOTECH, INC.	VITHTERA LABORATORIES

FILING DATE	IDENTIFIER	ISSUE DATE	TITLE	FOREIGN FILINGS	OWNER	LICENSOR	LICENSEE	SUBLICENSEE OR LICENSEE OF MDRNA
12/17/2004	U.S. 60/637,277	N/A	COMPOSITIONS FOR BACTERIAL MEDIATED GENE SILENCING AND METHODS OF USING SAME	N/A	BETH ISRAEL DEACONESS MEDICAL CENTER	BETH ISRAEL DEACONESS MEDICAL CENTER	MARINA BIOTECH, INC.	VITHERA LABORATORIES
02/08/2005	U.S. 60/651,238	N/A	COMPOSITIONS FOR BACTERIAL MEDIATED GENE SILENCING AND METHODS OF USING SAME	N/A	BETH ISRAEL DEACONESS MEDICAL CENTER	BETH ISRAEL DEACONESS MEDICAL CENTER	MARINA BIOTECH, INC.	VITHERA LABORATORIES
12/16/2005	PCT/US2005/45513	N/A	COMPOSITIONS FOR BACTERIAL MEDIATED GENE SILENCING AND METHODS OF USING SAME	AU, CA, EP, HK, JP, KR	BETH ISRAEL DEACONESS MEDICAL CENTER	BETH ISRAEL DEACONESS MEDICAL CENTER	MARINA BIOTECH, INC.	VITHERA LABORATORIES
8/2/2011	U.S. 13/196,436	N/A	COMPOSITIONS FOR BACTERIAL MEDIATED GENE SILENCING AND METHODS OF USING SAME	N/A	BETH ISRAEL DEACONESS MEDICAL CENTER	BETH ISRAEL DEACONESS MEDICAL CENTER	MARINA BIOTECH, INC.	VITHERA LABORATORIES

FILING DATE	IDENTIFIER	ISSUE DATE	TITLE	FOREIGN FILINGS	OWNER	LICENSEE OF MARINA
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FILING DATE	IDENTIFIER	ISSUE DATE	TITLE	FOREIGN FILINGS	OWNER	LICENSEE OF MARINA
4/30/2004	PRC 200480018784	9/8/2009	CLAUDINS' UNDEREXPRESSION AS MARKERS OF TUMOR METASTASIS	N/A	MARINA BIOTECH, INC.	N/A
8/25/2003	60/497,740	N/A	NANOPARTICLES FOR DELIVERY OF NUCLEIC ACIDS AND STABLE DOUBLE- STRANDED RNA	N/A	MARINA BIOTECH, INC.	N/A
10/29/2003	60/515,533	N/A	PHAGE DISPLAY TRP CAGE LIGANDS	N/A	MARINA BIOTECH, INC.	N/A
12/12/2007	U.S. 8,063,178	11/22/2011	PHAGE DISPLAYED TRP CAGE LIGANDS	N/A	MARINA BIOTECH, INC.	N/A
10/29/2004	U.S. 7,329,725	2/12/2008	PHAGE DISPLAYED TRP CAGE LIGANDS	N/A	MARINA BIOTECH, INC.	N/A
12/15/2003	U.S. 60/529,682	N/A	METHODS FOR OPENING TIGHT JUNCTIONS	N/A	MARINA BIOTECH, INC.	N/A
01/18/2007	U.S. 7,696,343	4/13/2010	METHODS FOR OPENING TIGHT JUNCTIONS	N/A	MARINA BIOTECH, INC.	N/A

FILING DATE	IDENTIFIER	ISSUE DATE	TITLE	FOREIGN FILINGS	OWNER	LICENSEE OF MARINA
4/20/2004	U.S. 60/564,543	N/A	CONJUGATION OF A CHOLESTEROL MOIETY TO DOUBLE-STRANDED RNA OR A DOUBLE-STRANDED HYBRID NUCLEIC ACID	N/A	MARINA BIOTECH, INC.	N/A
8/30/2010	U.S. 12/870,989	N/A	METHODS AND COMPOSITIONS FOR ENHANCING DELIVERY OF DOUBLE-STRANDED RNA OR A DOUBLE-STRANDED HYBRID NUCLEIC ACID TO REGULATE GENE EXPRESSION IN MAMMALIAN CELLS	N/A	MARINA BIOTECH, INC.	N/A
4/15/2005	PCT/US2005/012653	N/A	METHODS AND COMPOSITIONS FOR ENHANCING DELIVERY OF DOUBLE-STRANDED RNA OR A DOUBLE-STRANDED HYBRID NUCLEIC ACID TO REGULATE GENE EXPRESSION IN MAMMALIAN CELLS	CA, EP, JP, MX, HK	MARINA BIOTECH, INC.	N/A
5/4/2004	U.S. 60/568,027	N/A	HISTONES COMPLEXED OR COVALENTLY BONDED TO DOUBLE-STRANDED RNA OR TO AN RNA/DNA HYBRID	N/A	MARINA BIOTECH, INC.	N/A
5/4/2005	PCT/US2005/015574	N/A	COMPOSITIONS AND METHODS FOR ENHANCING DELIVERY OF NUCLEIC ACIDS INTO CELLS AND FOR MODIFYING EXPRESSION OF TARGET GENES IN CELLS	CA, EP, JP, MX	MARINA BIOTECH, INC.	N/A

FILING DATE	IDENTIFIER	ISSUE DATE	TITLE	FOREIGN FILINGS	OWNER	LICENSEE OF MARINA
9/8/2008	U.S. 12/206,165	N/A	COMPOSITIONS AND METHODS FOR ENHANCING DELIVERY OF NUCLEIC ACIDS INTO CELLS AND FOR MODIFYING EXPRESSION OF TARGET GENES IN CELLS	N/A	MARINA BIOTECH, INC.	N/A
5/12/2004	U.S. 60/570,513	N/A	POLYPEPTIDES COMPLEXED OR COVALENTLY BONDED TO DOUBLE-STRANDED RNA OR RNA/DNA HYBRID	N/A	MARINA BIOTECH, INC.	N/A
5/12/2004	U.S. 60/570,512	N/A	POLYPEPTIDES COMPLEXED OR LINKED TO DOUBLE-STRANDED RNA OR TO AN RNA/DNA HYBRID WITH A CATIONIC LIPID	N/A	MARINA BIOTECH, INC.	N/A
9/27/2004	U.S. 60/613,416	N/A	THE USE OF RNA INTERFERENCE TO TREAT RHEUMATOID ARTHRITIS	N/A	MARINA BIOTECH, INC.	N/A
4/1/2005	U.S. 60/667,833	N/A	COMPOSITIONS AND METHODS FOR RNA INTERFERENCE TO TREAT RHEUMATOID ARTHRITIS	N/A	MARINA BIOTECH, INC.	N/A
9/27/2005	PCT/US2005/035259	N/A	METHOD OF TREATING AN INFLAMMATORY DISEASE BY DOUBLE STRANDED RIBONUCLEIC ACID	AU, CA, CN, EP, HK, IN, JP, KR, MX, NZ, SG	MARINA BIOTECH, INC.	N/A

FILING DATE	IDENTIFIER	ISSUE DATE	TITLE	FOREIGN FILINGS	OWNER	LICENSEE OF MARINA
3/27/2007	U.S. 11/576,139	N/A	METHOD OF TREATING AN INFLAMMATORY DISEASE BY DOUBLE STRANDED RIBONUCLEIC ACID	N/A	MARINA BIOTECH, INC.	N/A
2/25/2005	U.S. 60/656,572	N/A	CONJUGATION OR COMPLEXATION OF A PROTEIN TRANSDUCTION DOMAIN AND FUSOGENIC POLYPEPTIDE TO A SMALL INTERFERING NUCLEIC ACID FOR FOR USE IN RNA INTERFERENCE	N/A	MARINA BIOTECH, INC.	N/A
10/14/2005	U.S. 60/727,216	N/A	PEPTIDE-MEDIATED SIRNA UPTAKE INTO CELLS	N/A	MARINA BIOTECH, INC.	N/A
11/4/2005	U.S. 60/733,664	N/A	PEPTIDE MEDIATED CELLULAR UPTAKE OF DOUBLE STRANDED RNA	N/A	MARINA BIOTECH, INC.	N/A
2/17/2006	U.S. 60/774,496	N/A	PHAGE DISPLAYED CELL BINDING PEPTIDES	N/A	MARINA BIOTECH, INC.	N/A
8/29/2006	U.S. 60/823,894	N/A	PHAGE DISPLAYED CELL BINDING PEPTIDES	N/A	MARINA BIOTECH, INC.	N/A

FILING DATE	IDENTIFIER	ISSUE DATE	TITLE	FOREIGN FILINGS	OWNER	LICENSEE OF MARINA
1/26/2007	U.S. 7,704,953	4/27/2010	PHAGE DISPLAYED CELL BINDING PEPTIDES	N/A	MARINA BIOTECH, INC.	N/A
2/5/2010	U.S. 7,772,189	8/10/2010	PHAGE DISPLAYED CELL BINDING PEPTIDES	N/A	MARINA BIOTECH, INC.	N/A
9/15/2006	U.S. 60/825,878	N/A	COMPOUNDS AND METHODS FOR PEPTIDE RIBONUCLEIC ACID CONDENSATE PARTICLES FOR RNA THERAPEUTICS	N/A	MARINA BIOTECH, INC.	N/A
10/13/2006	PCT/US2006/040174	N/A	COMPOUNDS AND METHODS FOR PEPTIDE RIBONUCLEIC ACID CONDENSATE PARTICLES FOR RNA THERAPEUTICS	AU, CA, CN, EP, HK, IN, JP, KR, MX, NZ, SG	MARINA BIOTECH, INC.	N/A
10/13/2006	U.S. 12/445,575	N/A	COMPOUNDS AND METHODS FOR PEPTIDE RIBONUCLEIC ACID CONDENSATE PARTICLES FOR RNA THERAPEUTICS	N/A	MARINA BIOTECH, INC.	N/A
10/18/2006	U.S. 60/862,027	N/A	COMPOSITIONS AND METHODS EMPLOYING GAPPED OR NICKED SIRNA MOLECULES	N/A	MARINA BIOTECH, INC.	ARROWHEAD RESEARCH CORP.
4/5/2007	U.S. 60/910,393	N/A	COMPOSITIONS AND METHODS OF USING GAPPED OR NICKED DOUBLE STRANDED NUCLEIC ACID MOLECULES	N/A	MARINA BIOTECH, INC.	ARROWHEAD RESEARCH CORP.

FILING DATE	IDENTIFIER	ISSUE DATE	TITLE	FOREIGN FILINGS	OWNER	LICENSEE OF MARINA
8/10/2007	U.S. 60/955,317	N/A	COMPOSITIONS AND METHODS OF USING DOUBLE-STRANDED NUCLEIC ACID MOLECULES CONTAINING ONE OR MORE GAP OR NICK	N/A	MARINA BIOTECH, INC.	ARROWHEAD RESEARCH CORP.
8/30/2007	U.S. 60/969,136	N/A	COMPOSITIONS AND METHODS OF USING DOUBLE-STRANDED NUCLEIC ACID MOLECULES CONTAINING ONE OR MORE GAP OR NICK	N/A	MARINA BIOTECH, INC.	ARROWHEAD RESEARCH CORP.
10/18/2007	PCT/US2007/081836	N/A	NICKED OR GAPPED NUCLEIC ACID MOLECULES AND USES THEREOF	AU, CA, EP, HK, IN, JP	MARINA BIOTECH, INC.	ARROWHEAD RESEARCH CORP.
10/18/2007	U.S. 12/445,868	N/A	NICKED OR GAPPED NUCLEIC ACID MOLECULES AND USES THEREOF	N/A	MARINA BIOTECH, INC.	ARROWHEAD RESEARCH CORP.
5/4/2007	U.S. 60/916,131	N/A	AMINO ACID LIPID COMPOSITIONS AND METHODS FOR DELIVERING RNA THERAPEUTICS	N/A	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH
6/29/2007	U.S. 60/947,282	N/A	AMINO ACID LIPID COMPOSITIONS AND METHODS FOR DELIVERING RNA THERAPEUTICS	N/A	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH
8/2/2007	U.S. 60/953,667	N/A	AMINO ACID LIPID COMPOSITIONS AND METHODS FOR DELIVERING RNA THERAPEUTICS	N/A	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH

FILING DATE	IDENTIFIER	ISSUE DATE	TITLE	FOREIGN FILINGS	OWNER	LICENSEE OF MARINA
9/14/2007	U.S. 60/972,653	N/A	AMINO ACID LIPIDS AND USES FOR RNA THERAPEUTICS	N/A	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH
5/2/2008	PCT/US2008/062526	N/A	AMINO ACID LIPIDS AND USES THEREOF	AU, CA, CN, EP, HK, IL, IN, JP, NZ	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH; DEBIOPHARM
5/2/2008	U.S. 7,939,505	5/10/2011	AMINO ACID LIPIDS AND USES THEREOF	N/A	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH; DEBIOPHARM
3/30/2011	13/076,158	N/A	AMINO ACID LIPIDS AND USES THEREOF	N/A	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH; DEBIOPHARM
9/14/2007	U.S. 60/972,590	N/A	EMULSION COMPOSITIONS FOR INTERFERING RNA AND USES THEREOF	N/A	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH
1/22/2008	U.S. 61/022,571	N/A	DISPERSION COMPOSITIONS FOR INTERFERING RNA AND USES THEREOF	N/A	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH

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10/2/2007	U.S. 60/976,894	N/A	LIPOPEPTIDES FOR DELIVERY OF INTERFERING RNA AGENTS	N/A	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH
10/2/2008	PCT/US2008/078627	N/A	LIPOPEPTIDES FOR DELIVERY OF NUCLEIC ACIDS	AU, CA, CN, EP, IL, IN, JP, NZ	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH
3/30/2010	U.S. 12/750,622	N/A	LIPOPEPTIDES FOR DELIVERY OF NUCLEIC ACIDS	N/A	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH
3/2/2007	U.S. 60/934,940	N/A	COMPOUNDS FOR INHIBITING TNF GENE EXPRESSION BY RIBONUCLEIC ACID INTERFERENCE AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
3/16/2007	U.S. 60/934,930	N/A	COMPOUNDS FOR INHIBITING GENE EXPRESSION BY RIBONUCLEIC ACID INTERFERENCE AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
4/20/2007	U.S. 60/934,931	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING VEGF GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
2/28/2008	U.S. 12/039,650	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING VEGF GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A

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4/24/2007	U.S. 60/934,928	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING VEGFB GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
4/25/2007	U.S. 60/934,943	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING FIGF GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
4/24/2007	U.S. 60/934,934	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING PGF GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
5/03/2007	U.S. 60/932,949	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING VEGF FAMILY GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
2/28/2008	PCT/US2008/055380	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING VEGF FAMILY GENE EXPRESSION AND USES THEREOF	CA, EP, JP	MDRNA RESEARCH INC.	N/A
2/28/2008	U.S. 12/528,508	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING VEGF FAMILY GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A

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5/10/2007	U.S. 60/934,945	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING EGFR GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
2/28/2008	U.S. 12/039,658	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING ERBB GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
5/03/2007	U.S. 60/934,946	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING ERBB2 GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
5/15/2007	U.S. 60/934,935	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING ERBB3 GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
5/17/2007	U.S. 60/934,922	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING ERBB4 GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
5/22/2007	U.S. 60/932,970	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING ERBB FAMILY GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A

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2/28/2008	PCT/US2008/055360	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING ERBB FAMILY GENE EXPRESSION AND USES THEREOF	CA, EP, JP	MDRNA RESEARCH INC.	N/A
2/28/2008	U.S. 12/528,619	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING ERBB FAMILY GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
8/15/2007	U.S. 60/956,093	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING HIF1A GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
2/28/2008	PCT/US2008/055385	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING HIF1A GENE EXPRESSION AND USES THEREOF	CA, EP, JP	MDRNA RESEARCH INC.	N/A
2/28/2008	U.S. 12/528,786	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING HIF1A GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A

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9/18/2007	U.S. 60/973,397	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING RAF1 GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
9/18/2007	U.S. 60/973,398	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING AKT1 GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
2/28/2008	PCT/US2008/055339	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING AKT GENE EXPRESSION AND USES THEREOF	CA, EP, JP	MDRNA RESEARCH INC.	N/A
2/28/2008	U.S. 12/039,662	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING AKT GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
12/12/2007	U.S. 61/013,212	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING AKT2 GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
12/12/2007	U.S. 61/013,239	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING AKT3 GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A

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11/20/2007	U.S. 60/989,419	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING BCL2 GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
2/29/2008	PCT/US2008/055515	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING BCL2 GENE EXPRESSION AND USES THEREOF	CA, EP, JP	MDRNA RESEARCH INC.	N/A
2/29/2008	U.S. 12/529,011	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING BCL2 GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
11/15/2007	U.S. 60/988,395	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING MYC GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
3/3/2008	PCT/US2008/55615	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING MYC GENE EXPRESSION AND USES THEREOF	CA, EP, JP	MDRNA RESEARCH INC.	N/A
3/3/2008	U.S. 12/529,138	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING MYC GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A

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11/15/2007	U.S. 60/988,400	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING NRAS GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
3/3/2008	PCT/US2008/055644	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING RAS GENE EXPRESSION AND USES THEREOF	CA, EP, JP	MDRNA RESEARCH INC.	N/A
3/3/2008	U.S. 12/529,302	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING RAS GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
11/15/2007	U.S. 60/988,401	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING HRAS GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
11/15/2007	U.S. 60/988,402	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING KRAS GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
12/20/2007	U.S. 61/015,611	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING WNT3A GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A

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3/3/2008	PCT/US2008/055649	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING WNT GENE EXPRESSION AND USES THEREOF	CA, EP, JP	MDRNA RESEARCH INC.	N/A
3/3/2008	U.S. 12/529,532	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING WNT GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
2/28/2008	U.S. 12/039,668	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING APOB GENE EXPRESSION AND USES THEREOF	N/A	MDRNA RESEARCH INC.	N/A
09/02/2009	U.S. 12/552,082	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING GENE EXPRESSION AND USES THEREOF	N/A	MARINA BIOTECH, INC.	N/A
12/15/2011	U.S. 13/327,545	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING GENE EXPRESSION AND USES THEREOF	N/A	MARINA BIOTECH, INC.	N/A
09/02/2009	CA 2,677,068	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING GENE EXPRESSION AND USES THEREOF	N/A	MARINA BIOTECH, INC.	N/A

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09/02/2009	AU 2009212920	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING GENE EXPRESSION AND USES THEREOF	N/A	MARINA BIOTECH, INC.	N/A
5/21/2008	PCT/US2008/64417	N/A	HYDROXYMETHYL SUBSTITUTED RNA OLIGONUCLEOTIDES AND RNA COMPLEXES	AU, BR, CA, CN, EP, HK, IL, IN, JP, KR, MX, MY, NZ, SG, ZA	MARINA BIOTECH, INC.	ARROWHEAD RESEARCH; DEBIOPHARM
5/21/2008	U.S. 12/515,403	N/A	HYDROXYMETHYL SUBSTITUTED RNA OLIGONUCLEOTIDES AND RNA COMPLEXES	N/A	MARINA BIOTECH, INC.	ARROWHEAD RESEARCH; DEBIOPHARM
8/5/2008	U.S. 61/086,435	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING BIRC5 GENE EXPRESSION AND USES THEREOF	N/A	MARINA BIOTECH, INC.	N/A
08/05/2009	PCT/US2009/052878	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING BIRC5 GENE EXPRESSION AND USES THEREOF	CA, EP, JP	MARINA BIOTECH, INC.	N/A
2/4/2011	U.S. 13/057,741	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING BIRC5 GENE EXPRESSION AND USES THEREOF	N/A	MARINA BIOTECH, INC.	N/A

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8/5/2008	U.S. 61/086,445	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING PLK FAMILY GENE EXPRESSION AND USES THEREOF	N/A	MARINA BIOTECH, INC.	N/A
08/05/2009	PCT/US2009/052888	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING PLK FAMILY GENE EXPRESSION AND USES THEREOF	CA, EP, JP	MARINA BIOTECH, INC.	N/A
2/4/2011	U.S. 13/057,743	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING PLK FAMILY GENE EXPRESSION AND USES THEREOF	N/A	MARINA BIOTECH, INC.	N/A
10/16/2008	U.S. 61/106,062	N/A	COMPOSITIONS AND METHODS FOR LIPOSOMAL RNA THERAPEUTICS	N/A	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH
10/16/2009	PCT/US2009/060930	N/A	PROCESSES AND COMPOSITIONS FOR LIPOSOMAL AND EFFICIENT DELIVERY OF GENE SILENCING THERAPEUTICS	AU, BR, CA, CN, EP, HK, IL, IN, JP, KR, SG, ZA	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH; DEBIOPHARM
10/16/2009	U.S. 12/580,250	N/A	PROCESSES AND COMPOSITIONS FOR LIPOSOMAL AND EFFICIENT DELIVERY OF GENE SILENCING THERAPEUTICS	N/A	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH; DEBIOPHARM
12/26/2008	U.S. 61/141,080	N/A	COMPOSITIONS AND METHODS FOR EFFICIENT DELIVERY OF GENE SILENCING THERAPEUTICS	N/A	MARINA BIOTECH, INC.	NOVARTIS INSTITUTES FOR BIOMEDICAL RESEARCH

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12/03/2008	U.S. 61/119,624	N/A	RNA OLIGONUCLEOTIDES AND RNA COMPLEXES COMPRISING ACYCLIC NUCLEOMONOMERS	N/A	MARINA BIOTECH, INC.	ARROWHEAD RESEARCH CORP.
10/15/2009	U.S. 61/252,085	N/A	RNA COMPLEXES COMPRISING ACYCLIC NUCLEOMONOMERS	N/A	MARINA BIOTECH, INC.	ARROWHEAD RESEARCH CORP.
12/3/2009	PCT/US2009/066610	N/A	UsiRNA COMPLEXES	AU, BR, CA, CN, EP, HK, IL, IN, JP, KR, SG, ZA	MARINA BIOTECH, INC.	ARROWHEAD RESEARCH CORP.; DEBIOPHARM
5/18/2011	U.S. 13/130,032	N/A	UsiRNA COMPLEXES		MARINA BIOTECH, INC.	ARROWHEAD RESEARCH CORP.; DEBIOPHARM
4/7/2009	U.S. 61/167,379	N/A	COMPOSITIONS AND METHODS FOR EFFICIENT DELIVERY OF GENE SILENCING THERAPEUTICS	N/A	MARINA BIOTECH, INC.	N/A

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11/4/2009	U.S. 61/258,115	N/A	AMINO ACID-BASED NANOPARTICLE FORMULATIONS	N/A	MARINA BIOTECH, INC.	N/A
11/4/2010	PCT/US2010/055516	N/A	ACTIVITY GENERATING DELIVERY MOLECULES	National Stage Pending	MARINA BIOTECH, INC.	N/A
3/26/2010	U.S. 61/318,141	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING SURVIVIN GENE EXPRESSION AND USES THEREOF	N/A	MARINA BIOTECH, INC.	N/A
3/25/2011	PCT/US2011/030100	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING SURVIVIN GENE EXPRESSION AND USES THEREOF	N/A	MARINA BIOTECH, INC.	N/A
4/19/2010	U.S. 61/325,757	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING HRAS GENE EXPRESSION AND USES THEREOF	N/A	MARINA BIOTECH, INC.	DEBIOPHARM
4/19/2011	PCT/US2011/033102	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING HRAS GENE EXPRESSION AND USES THEREOF	N/A	MARINA BIOTECH, INC.	DEBIOPHARM
4/26/2010	U.S. 61/328,140	N/A	MODIFIED FORMS OF NUCLEIC ACID COMPOUNDS AND USES THEREOF	N/A	MARINA BIOTECH, INC.	N/A

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3/24/2011	U.S. 61/467,048	N/A	MODIFIED FORMS OF NUCLEIC ACID COMPOUNDS AND USES THEREOF	N/A	MARINA BIOTECH, INC.	N/A
4/26/2011	PCT/US2011/033980	N/A	NUCLEIC COMPOUNDS WITH CONFORMATIONALLY RESTRICTED MONOMERS AND USES THEREOF	National Stage Pending	MARINA BIOTECH, INC.	N/A
4/28/2010	U.S. 61/329,034	N/A	MULTI-SIRNA COMPOSITIONS FOR REDUCING GENE EXPRESSION	N/A	MARINA BIOTECH, INC.	DEBIOPHARM
4/28/2011	PCT/US2011/034354	N/A	MULTI-SIRNA COMPOSITIONS FOR REDUCING GENE EXPRESSION	National Stage Pending	MARINA BIOTECH, INC.	DEBIOPHARM
4/28/2011	PCT/US2011/034352	N/A	NUCLEIC ACID COMPOUNDS FOR INHIBITING FGFR3 GENE EXPRESSION AND USES THEREOF	National Stage Pending	MARINA BIOTECH, INC.	DEBIOPHARM
4/30/2002	U.S. 6,833,361	12/21/2004	NOVEL NUCLEOSIDES HAVING BICYCLIC SUGAR MOIETY	N/A	MARINA BIOTECH, INC.	VALEAN RESEARCH & DEVELOPMENT
12/1/1999	U.S. 6,403,566	6/11/2002	NOVEL NUCLEOSIDES HAVING BICYCLIC SUGAR MOIETY	N/A	MARINA BIOTECH, INC.	VALEAN RESEARCH & DEVELOPMENT

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5/11/1999	U.S. 6,403,482	7/4/2000	CONFORMATIONALLY LOCKED NUCLEOSIDES AND OLIGONUCLEOTIDES	N/A	MARINA BIOTECH, INC.	VALEAN RESEARCH & DEVELOPMENT
11/2/1994	U.S. 5,681,940	10/28/1997	SUGAR MODIFIED NUCLEOSIDES AND OLIGONUCLEOTIDES	N/A	MARINA BIOTECH, INC.	VALEAN RESEARCH & DEVELOPMENT
2/28/2001	U.S. 6,831,069	12/14/2004	PYRROLO[2,3-D]PYRIMIDINE NUCLEOSIDE ANALOGS	DE	MARINA BIOTECH, INC.	VALEAN RESEARCH & DEVELOPMENT
12/31/2002	U.S. 7,081,449	7/25/2006	PYRIDO[2,3-D]PYRIMIDINE AND PYRIMIDO[4,5-D]PYRIMIDINE NUCLEOSIDES	N/A	MARINA BIOTECH, INC.	VALEAN RESEARCH & DEVELOPMENT
6/13/2008	PCT/US2008/007448	N/A	BACTERIA MEDIATED GENE SILENCING	EP, HK	MARINA BIOTECH, INC.	VITHERA LABORATORIES
12/08/2009	U.S. 12/632,985	N/A	BACTERIA MEDIATED GENE SILENCING	N/A	MARINA BIOTECH, INC.	VITHERA LABORATORIES
11/14/2008	U.S. 61/114,610	N/A	BACTERIA MEDIATED GENE SILENCING	N/A	MARINA BIOTECH, INC.	VITHERA LABORATORIES

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05/20/2010	PCT/US2009/064409	N/A	E. COLI MEDIATED GENE SILENCING OF BETA-CATENIN	AU, BR, CA, CN, EP, HK, IL, IN, JP, KR, SG, ZA	MARINA BIOTECH, INC.	VITHERA LABORATORIES
11/13/2009	U.S. 12/618,401	N/A	E. COLI MEDIATED GENE SILENCING OF BETA-CATENIN	N/A	MARINA BIOTECH, INC.	VITHERA LABORATORIES
5/11/2011	U.S. 13/105,498	N/A	E. COLI MEDIATED GENE SILENCING OF BETA-CATENIN	N/A	MARINA BIOTECH, INC.	VITHERA LABORATORIES
2/21/2002	PCT/EP2002/001879	N/A	CATIONIC STEROL DERIVATIVES, PH-SENSITIVE LIPOSOMES COMPRISING CATIONIC STEROL DERIVATIVES AND METHOD FOR LOADING LIPOSOMES WITH ACTIVE SUBSTANCES	AU, CA, CN, EP, JP, SG	MARINA BIOTECH, INC.	PRONAI, MIRNA
2/11/2004	U.S. 7,312,206	12/25/2007	STEROL DERIVATIVES, LIPOSOMES COMPRISING STEROL DERIVATIVES AND METHOD FOR LOADING LIPOSOMES WITH ACTIVE SUBSTANCES	N/A	MARINA BIOTECH, INC.	PRONAI, MIRNA
2/21/2002	PCT/EP2002/001878	N/A	AMPHOTERIC STEROLS AND THE USE THEREOF IN THE PRODUCTION OF PH-SENSITIVE LIPOSOMES	AU, CA, CN, EP, SG	MARINA BIOTECH, INC.	N/A

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2/11/2004	U.S. 7,407,947	8/5/2008	AMPHOTERIC STEROLS AND THE USE THEREOF	N/A	MARINA BIOTECH, INC.	PRONAI; MIRNA
2/21/2002	PCT/EP2002/001880	N/A	AMPHOTERIC STEROLS AND THE USE THEREOF	AU, BR, CA, CN, EP, JP, SG	MARINA BIOTECH, INC.	PRONAI; MIRNA
5/7/2007	U.S. 7,858,117	12/28/2010	AMPHOTERIC STEROLS AND THE USE THEREOF		MARINA BIOTECH, INC.	PRONAI; MIRNA
10/31/2006	U.S. 7,780,983	8/24/2010	AMPHOTERIC STEROLS AND THE USE THEREOF	N/A	MARINA BIOTECH, INC.	PRONAI; MIRNA
8/9/2010	U.S. 12/806,342	N/A	AMPHOTERIC STEROLS AND THE USE THEREOF	N/A	MARINA BIOTECH, INC.	PRONAI; MIRNA
2/21/2002	U.S. 7,371,404	5/13/2008	AMPHOTERIC STEROLS AND THE USE THEREOF	N/A	MARINA BIOTECH, INC.	PRONAI; MIRNA
2/19/2003	PCT/EP2003/001661	N/A	PH-SENSITIVE CATIONIC LIPIDS, AND LIPOSOMES AND NANOCAPSULES CONTAINING THE SAME	N/A	MARINA BIOTECH, INC.	N/A

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8/16/2005	U.S. 10/505,107	N/A	PH-SENSITIVE CATIONIC LIPIDS, AND LIPOSOMES AND NANOCAPSULES CONTAINING THE SAME	N/A	MARINA BIOTECH, INC.	N/A
2/19/2003	PCT/EP2003/001662	N/A	COMPONENTS FOR PRODUCING AMPHOTERIC LIPOSOMES	EP	MARINA BIOTECH, INC.	N/A
11/8/2011	U.S. 13/291,650	N/A	COMPONENTS FOR PRODUCING AMPHOTERIC LIPOSOMES	N/A	MARINA BIOTECH, INC.	N/A
4/8/2005	U.S. 10/505,093	N/A	COMPONENTS FOR PRODUCING AMPHOTERIC LIPOSOMES	N/A	MARINA BIOTECH, INC.	N/A
3/29/2005	PCT/DE2005/000589	N/A	SERUM-STABLE AMPHOTERIC LIPOSOMES	EP	MARINA BIOTECH, INC.	N/A
9/2/2008	U.S. 10/594,553	N/A	SERUM-STABLE AMPHOTERIC LIPOSOMES		MARINA BIOTECH, INC.	N/A
09/15/2005	U.S. 60/717,291	N/A	SERUM STABLE LIPOSOMES COMPRISING AMPHOTER II LIPID MIXTURES	N/A	MARINA BIOTECH, INC.	N/A

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11/05/2004	U.S. 60/625,195	N/A	SYSTEMIC DELIVERY OF CD40 ANTISENSE	N/A	MARINA BIOTECH, INC.	N/A
9/15/2006	PCT/EP2006/009013	N/A	IMPROVEMENTS IN OR RELATING TO AMPHOTERIC LIPOSOMES	AU, CA, EP, JP	MARINA BIOTECH, INC.	PRONAI; MIRNA
9/9/2010	U.S. 12/807,707	N/A	AMPHOTERIC LIPOSOMES	N/A	MARINA BIOTECH, INC.	PRONAI; MIRNA
03/16/2007	PCT/EP2007/002349	N/A	EFFICIENT METHOD FOR LOADING AMPHOTERIC LIPOSOMES WITH NUCLEIC ACID ACTIVE SUBSTANCES	EP	MARINA BIOTECH, INC.	PRONAI; MIRNA
09/12/2008	U.S. 12/225,030	N/A	EFFICIENT METHOD FOR LOADING AMPHOTERIC LIPOSOMES WITH NUCLEIC ACID ACTIVE SUBSTANCES	N/A	MARINA BIOTECH, INC.	PRONAI; MIRNA
10/12/2007	PCT/EP2007/008917	N/A	IMPROVEMENTS IN OR RELATING TO AMPHOTERIC LIPOSOMES	AU, EP, JP	MARINA BIOTECH, INC.	N/A
1/13/2012	U.S. 13/350,137	N/A	AMPHOTERIC LIPOSOMES, A METHOD OF FORMULATING AN AMPHOTERIC LIPOSOME AND A METHOD OF LOADING AN AMPHOTERIC LIPOSOME	N/A	MARINA BIOTECH, INC.	N/A

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10/12/2008	PCT/EP2008/008621	N/A	AMPHOTERIC LIPOSOMES, A METHOD OF FORMULATING AN AMPHOTERIC LIPOSOME AND A METHOD OF LOADING AN AMPHOTERIC LIPOSOME	AU, EP, JP	MARINA BIOTECH, INC.	N/A
6/8/2010	U.S. 12/682,703	N/A	AMPHOTERIC LIPOSOMES COMPRISING NEUTRAL LIPIDS	N/A	MARINA BIOTECH, INC.	N/A
12/19/2007	PCT/EP2007/011187	N/A	LIPIDS AND LIPIDS ASSEMBLIES COMPRISING TRANSFECTION ENHANCER ELEMENTS	EP, JP	MARINA BIOTECH, INC.	N/A
12/19/2007	U.S. 12/004,154	N/A	LIPIDS AND LIPIDS ASSEMBLIES COMPRISING TRANSFECTION ENHANCER ELEMENTS	N/A	MARINA BIOTECH, INC.	N/A
7/2/2010	PCT/EP2010/059487	N/A	EMULATION OF LIPOPROTEIN STRUCTURES	AU, BR, CA, CN, EP, HK, IL, IN, JP, KR, SG, ZA	MARINA BIOTECH, INC.	N/A
12/15/2011	U.S. 13/378,484	N/A	EMULATION OF LIPOPROTEIN STRUCTURES	N/A	MARINA BIOTECH, INC.	N/A
12/19/2007	PCT/EP2007/011188	N/A	CONSTRUCTION AND USE OF TRANSFECTION ENHANCER ELEMENTS	EP	MARINA BIOTECH, INC.	N/A

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10/5/2009	U.S. 12/448,452	N/A	CONSTRUCTION AND USE OF TRANSECTION ENHANCER ELEMENTS	N/A	MARINA BIOTECH, INC.	N/A
12/1/2005	U.S. 60/741,192	N/A	AMPHOTERIC LIPOSOME FORMULATION	N/A	MARINA BIOTECH, INC.	N/A
12/1/2006	PCT/US2006/045955	N/A	AMPHOTERIC LIPOSOME FORMULATION	CA, EP, JP	MARINA BIOTECH, INC.	N/A
3/19/2009	U.S. 12/085,893	N/A	AMPHOTERIC LIPOSOME FORMULATION	N/A	MARINA BIOTECH, INC.	N/A
9/7/2011	U.S. 61/532,056	N/A	SYNTHESIS AND USES OF NUCLEIC ACID COMPOUNDS WITH CONFORMATIONALLY RESTRICTED MONOMERS	N/A	MARINA BIOTECH, INC.	N/A
10/20/2005	U.S. 60/728,877	N/A	INTRANASAL ADMINISTRATION OF INSULIN	N/A	MARINA BIOTECH, INC.	N/A
3/3/2006	U.S. 60/778,724	N/A	INTRANASAL ADMINISTRATION OF RAPID ACTING INSULIN	N/A	MARINA BIOTECH, INC.	N/A

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7/10/2006	U.S. 60/806,904	N/A	INTRANASAL ADMINISTRATION OF RAPID ACTING INSULIN FORMULATION	N/A	MARINA BIOTECH, INC.	N/A
8/4/2006	U.S. 60/821,525	N/A	INTRANASAL ADMINISTRATION OF RAPID ACTING INSULIN	N/A	MARINA BIOTECH, INC.	N/A
9/15/2006	U.S. 60/825,876	N/A	INTRANASAL ADMINISTRATION OF RAPID ACTING INSULIN	N/A	MARINA BIOTECH, INC.	N/A
10/20/2006	PCT/US2006/41081	N/A	INTRANASAL ADMINISTRATION OF RAPID ACTING INSULIN	CN, EP, IN, KR	MARINA BIOTECH, INC.	N/A
10/20/2006	U.S. 12/672,478	N/A	INTRANASAL ADMINISTRATION OF RAPID ACTING INSULIN	N/A	MARINA BIOTECH, INC.	N/A
12/5/2006	U.S. 60/868,703	N/A	INTRANASAL ADMINISTRATION OF RAPID ACTING INSULIN	N/A	MARINA BIOTECH, INC.	N/A
3/9/2007	U.S. 60/894,130	N/A	INTRANASAL ADMINISTRATION OF RAPID ACTING INSULIN	N/A	MARINA BIOTECH, INC.	N/A

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4/19/2007	PCT/US2007/67007	N/A	INTRANASAL ADMINISTRATION OF ULTRA- RAPID ACTING INSULIN	EP, IN	MARINA BIOTECH, INC.	N/A
4/19/2007	U.S. 12/376,205	N/A	INTRANASAL ADMINISTRATION OF ULTRA- RAPID ACTING INSULIN	N/A	MARINA BIOTECH, INC.	N/A
12/7/2011	U.S. 13/314,080	N/A	INTRANASAL ADMINISTRATION OF ULTRA- RAPID ACTING INSULIN	N/A	MARINA BIOTECH, INC.	N/A
5/10/2004	U.S. 60/570,113	N/A	COMPOSITIONS AND METHODS FOR ENHANCED MUCOSAL DELIVERY OF PARATHYROID HORMONE	N/A	MARINA BIOTECH, INC.	N/A
5/10/2005	PCT/US2005/16530	N/A	COMPOSITIONS AND METHODS FOR ENHANCED MUCOSAL DELIVERY OF PARATHYROID HORMONE	CN, EP, KR	MARINA BIOTECH, INC.	N/A
5/10/2005	U.S. 7,244,709	7/17/2007	COMPOSITIONS AND METHODS FOR ENHANCED MUCOSAL DELIVERY OF PARATHYROID HORMONE	N/A	MARINA BIOTECH, INC.	N/A
10/17/2006	U.S. 7,435,720	10/14/2008	COMPOSITIONS AND METHODS FOR ENHANCED MUCOSAL DELIVERY OF PARATHYROID HORMONE	N/A	MARINA BIOTECH, INC.	N/A

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5/4/2007	U.S. 11/744,745	N/A	COMPOSITIONS AND METHODS FOR ENHANCED MUCOSAL DELIVERY OF PARATHYROID HORMONE	N/A	MARINA BIOTECH, INC.	N/A
3/17/2010	U.S. 12/726,308	N/A	COMPOSITIONS AND METHODS FOR ENHANCED MUCOSAL DELIVERY OF PARATHYROID HORMONE	N/A	MARINA BIOTECH, INC.	N/A
3/17/2020	U.S. 12/726,315	N/A	COMPOSITIONS AND METHODS FOR ENHANCED MUCOSAL DELIVERY OF PARATHYROID HORMONE	N/A	MARINA BIOTECH, INC.	N/A
4/10/2006	PCT/US2006/13377	N/A	PTH FORMULATIONS AND METHODS OF USE	CN, EP, IN, KR	MARINA BIOTECH, INC.	N/A
12/17/2002	U.S. 7,166,575	1/23/2007	COMPOSITIONS AND METHODS FOR ENHANCED MUCOSAL DELIVERY OF PEPTIDE YY AND METHODS FOR TREATING AND PREVENTING OBESITY	N/A	MARINA BIOTECH, INC.	N/A
8/7/2003	U.S. 60/493,226	N/A	PROTEIN-FREE FORMULATION OF PEPTIDE YY SUITABLE FOR INTRANASAL ADMINISTRATION	N/A	MARINA BIOTECH, INC.	N/A

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9/8/2003	U.S. 60/501,170	N/A	PROTEIN-FREE FORMULATION OF PEPTIDE YY SUITABLE FOR INTRANASAL ADMINISTRATION	N/A	MARINA BIOTECH, INC.	N/A
10/10/2003	U.S. 60/510,785	N/A	PROTEIN-FREE FORMULATION OF PEPTIDE YY SUITABLE FOR INTRANASAL ADMINISTRATION	N/A	MARINA BIOTECH, INC.	N/A
11/4/2003	U.S. 60/517,290	N/A	PROTEIN-FREE FORMULATION OF PEPTIDE YY SUITABLE FOR INTRANASAL ADMINISTRATION	N/A	MARINA BIOTECH, INC.	N/A
11/10/2003	U.S. 60/518,812	N/A	PROTEIN-FREE FORMULATION OF PEPTIDE YY SUITABLE FOR INTRANASAL ADMINISTRATION	N/A	MARINA BIOTECH, INC.	N/A
1/30/2004	U.S. 7,157,426	1/2/2007	COMPOSITIONS AND METHODS FOR ENHANCED MUCOSAL DELIVERY OF PEPTIDE YY AND METHODS FOR TREATING AND PREVENTING OBESITY	N/A	MARINA BIOTECH, INC.	N/A

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12/23/2003	U.S. 7,186,691	3/6/2007	COMPOSITIONS AND METHODS FOR ENHANCED MUCOSAL DELIVERY OF Y2 RECEPTOR-BINDING PEPTIDES AND METHODS FOR TREATING AND PREVENTING OBESITY	N/A	MARINA BIOTECH, INC.	N/A
2/17/2004	U.S. 7,229,966	6/12/2007	COMPOSITIONS AND METHODS FOR ENHANCED MUCOSAL DELIVERY OF Y2 RECEPTOR-BINDING PEPTIDES AND METHODS FOR TREATING AND PREVENTING OBESITY	N/A	MARINA BIOTECH, INC.	N/A
6/16/2004	U.S. 7,186,692	3/6/2007	COMPOSITIONS AND METHODS FOR ENHANCED MUCOSAL DELIVERY AND NON-INFUSED ADMINISTRATION OF Y2 RECEPTOR-BINDING PEPTIDES AND METHODS FOR TREATING AND PREVENTING OBESITY	N/A	MARINA BIOTECH, INC.	N/A
9/19/2008	U.S. 7,863,245	1/4/2011	COMPOSITIONS FOR ENHANCED EPITHELIAL PERMEATION OF PEPTIDE YY FOR TREATING OBESITY	N/A	MARINA BIOTECH, INC.	N/A