```
Periostin1      MIPFLPMFSLLLLLIVNPINANNHYDKILAHSRIRGRDQGPNVCALQQILGTKKKYFSTC 60
Periostin2      MIPFLPMFSLLLLLIVNPINANNHYDKILAHSRIRGRDQGPNVCALQQILGTKKKYFSTC 60
Periostin3      MIPFLPMFSLLLLLIVNPINANNHYDKILAHSRIRGRDQGPNVCALQQILGTKKKYFSTC 60
Periostin4      MIPFLPMFSLLLLLIVNPINANNHYDKILAHSRIRGRDQGPNVCALQQILGTKKKYFSTC 60
Nterm           ----------------------NNHYDKILAHSRIRGRDQGPNVCALQQILGTKKKYFSTC 39
                                       ************************************

Periostin1      KNWYKKSICGQKTTVLYECCPGYMRMEGMKGCPAVLPIDHVYGTLGIVGATTTQRYSDAS 120
Periostin2      KNWYKKSICGQKTTVLYECCPGYMRMEGMKGCPAVLPIDHVYGTLGIVGATTTQRYSDAS 120
Periostin3      KNWYKKSICGQKTTVLYECCPGYMRMEGMKGCPAVLPIDHVYGTLGIVGATTTQRYSDAS 120
Periostin4      KNWYKKSICGQKTTVLYECCPGYMRMEGMKGCPAVLPIDHVYGTLGIVGATTTQRYSDAS 120
Nterm           KNWYKKSICGQKTTVLYECCPGYMRMEGMKGCPAVLPIDHVYGTLGIVGATTTQRYSDAS 99
                ************************************************************

Periostin1      KLREEIEGKGSFTYFAPSNEAWDNLDSDIRRGLESNVNVELLNALHSHMINKRMLTKDLK 180
Periostin2      KLREEIEGKGSFTYFAPSNEAWDNLDSDIRRGLESNVNVELLNALHSHMINKRMLTKDLK 180
Periostin3      KLREEIEGKGSFTYFAPSNEAWDNLDSDIRRGLESNVNVELLNALHSHMINKRMLTKDLK 180
Periostin4      KLREEIEGKGSFTYFAPSNEAWDNLDSDIRRGLESNVNVELLNALHSHMINKRMLTKDLK 180
Nterm           KLREEIEGKGSFTYFAPSNEAWDNLDSDIRRGLESNVNVELLNALHSHMINKRMLTKDLK 159
                ************************************************************

Periostin1      NGMIIPSMYNNLGLFINHYPNGVVTVNCARIIHGNQIATNGVVHVIDRVLTQIGTSIQDF 240
Periostin2      NGMIIPSMYNNLGLFINHYPNGVVTVNCARIIHGNQIATNGVVHVIDRVLTQIGTSIQDF 240
Periostin3      NGMIIPSMYNNLGLFINHYPNGVVTVNCARIIHGNQIATNGVVHVIDRVLTQIGTSIQDF 240
Periostin4      NGMIIPSMYNNLGLFINHYPNGVVTVNCARIIHGNQIATNGVVHVIDRVLTQIGTSIQDF 240
Nterm           NGMIIPSMYNNLGLFINHYPNGVVTVNCARIIHGNQIATNGVVHVIDRVLTQIGTSIQDF 219
                ************************************************************

Periostin1      IEAEDDLSSFRAAAITSDILEALGRDGHFTLFAPTNEAFEKLPRGVLERIMGDKVASEAL 300
Periostin2      IEAEDDLSSFRAAAITSDILEALGRDGHFTLFAPTNEAFEKLPRGVLERIMGDKVASEAL 300
Periostin3      IEAEDDLSSFRAAAITSDILEALGRDGHFTLFAPTNEAFEKLPRGVLERIMGDKVASEAL 300
Periostin4      IEAEDDLSSFRAAAITSDILEALGRDGHFTLFAPTNEAFEKLPRGVLERIMGDKVASEAL 300
Nterm           IEAEDDLSSFRAAAITSDILEALGRDGHFTLFAPTNEAFEKLPRGVLERIMGDKVASEAL 279
                ************************************************************

Periostin1      MKYHILNTLQCSESIMGGAVFETLEGNTIEIGCDGDSITVNGIKMVNKKDIVTNNGVIHL 360
Periostin2      MKYHILNTLQCSESIMGGAVFETLEGNTIEIGCDGDSITVNGIKMVNKKDIVTNNGVIHL 360
Periostin3      MKYHILNTLQCSESIMGGAVFETLEGNTIEIGCDGDSITVNGIKMVNKKDIVTNNGVIHL 360
Periostin4      MKYHILNTLQCSESIMGGAVFETLEGNTIEIGCDGDSITVNGIKMVNKKDIVTNNGVIHL 360
Nterm           MKYHILNTLQCSESIMGGAVFETLEGNTIEIGCDGDSITVNGIKMVNKKDIVTNNGVIHL 339
                ************************************************************

Periostin1      IDQVLIPDSAKQVIELAGKQQTTFTDLVAQLGLASALRPDGEYTLLAPVNNAFSDDTLSM 420
Periostin2      IDQVLIPDSAKQVIELAGKQQTTFTDLVAQLGLASALRPDGEYTLLAPVNNAFSDDTLSM 420
Periostin3      IDQVLIPDSAKQVIELAGKQQTTFTDLVAQLGLASALRPDGEYTLLAPVNNAFSDDTLSM 420
Periostin4      IDQVLIPDSAKQVIELAGKQQTTFTDLVAQLGLASALRPDGEYTLLAPVNNAFSDDTLSM 420
Nterm           IDQVLIPDSAKQVIELAGKQQTTFTDLVAQLGLASALRPDGEYTLLAPVNNAFSDDTLSM 399
                ************************************************************
```

FIG. 1A

```
Periostin1      DQRLLKLILQNHILKVKVGLNELYNGQILETIGGKQLRVFVYRTAVCIENSCMEKGSKQG 480
Periostin2      DQRLLKLILQNHILKVKVGLNELYNGQILETIGGKQLRVFVYRTAVCIENSCMEKGSKQG 480
Periostin3      DQRLLKLILQNHILKVKVGLNELYNGQILETIGGKQLRVFVYRTAVCIENSCMEKGSKQG 480
Periostin4      DQRLLKLILQNHILKVKVGLNELYNGQILETIGGKQLRVFVYRTAVCIENSCMEKGSKQG 480
Nterm           DQRLLKLILQNHILKVKVGLNELYNGQILETIGGKQLRVFVYRTAVCIENSCMEKGSKQG 459
                ************************************************************

Periostin1      RNGAIHIFREIIKPAEKSLHEKLKQDKRFSTFLSLLEAADLKELLTQPGDWTLFVPTNDA 540
Periostin2      RNGAIHIFREIIKPAEKSLHEKLKQDKRFSTFLSLLEAADLKELLTQPGDWTLFVPTNDA 540
Periostin3      RNGAIHIFREIIKPAEKSLHEKLKQDKRFSTFLSLLEAADLKELLTQPGDWTLFVPTNDA 540
Periostin4      RNGAIHIFREIIKPAEKSLHEKLKQDKRFSTFLSLLEAADLKELLTQPGDWTLFVPTNDA 540
Nterm           RNGAIHIFREIIKPAEKSLHEKLKQDKRFSTFLSLLEAADLKELLTQPGDWTLFVPTNDA 519
                ************************************************************

Periostin1      FKGMTSEEKEILIRDKNALQNIILYHLTPGVFIGKGFEPGVTNILKTTQGSKIFLKEVND 600
Periostin2      FKGMTSEEKEILIRDKNALQNIILYHLTPGVFIGKGFEPGVTNILKTTQGSKIFLKEVND 600
Periostin3      FKGMTSEEKEILIRDKNALQNIILYHLTPGVFIGKGFEPGVTNILKTTQGSKIFLKEVND 600
Periostin4      FKGMTSEEKEILIRDKNALQNIILYHLTPGVFIGKGFEPGVTNILKTTQGSKIFLKEVND 600
Nterm           FKGMTSEEKEILIRDKNALQNIILYHLTPGVFIGKGFEPGVTNILKTTQGSKIFLKEVND 579
                ************************************************************

Periostin1      TLLVNELKSKESDIMTTNGVIHVVDKLLYPADTPVGNDQLLEILNKLIKYIQIKFVRGST 660
Periostin2      TLLVNELKSKESDIMTTNGVIHVVDKLLYPADTPVGNDQLLEILNKLIKYIQIKFVRGST 660
Periostin3      TLLVNELKSKESDIMTTNGVIHVVDKLLYPADTPVGNDQLLEILNKLIKYIQIKFVRGST 660
Periostin4      TLLVNELKSKESDIMTTNGVIHVVDKLLYPADTPVGNDQLLEILNKLIKYIQIKFVRGST 660
Nterm           TLLVNELKSKESDIMTTNGVIHVVDKLLYPADTPVGNDQLLEILNKLIKYIQIKFVRGST 639
                ************************************************************

Periostin1      FKEIPVTVYTTKIITKVVEPKIKVIEGSLQPIIKTEGPTLTKVKIEGEPEFRLIKEGETI 720
Periostin2      FKEIPVTVYK------------------------------------------------- 670
Periostin3      FKEIPVTVYR-------------------------PTLTKVKIEGEPEFRLIKEGETI 693
Periostin4      FKEIPVTVYK------------------------------------------------- 670
Nterm           FKEIPVTVYG------------------------------------------------- 649
                *********

Periostin1      TEVIHGEPIIKKYTKIIDGVPVEITEKETREERIITGPEIKYTRISTGGGETEETLKKLL 780
Periostin2      -------PIIKKYTKIIDGVPVEITEKETREERIITGPEIKYTRISTGGGETEETLKKLL 723
Periostin3      TEVIHGEPIIKKYTKIIDGVPVEITEKETREERIITGPEIKYTRISTGGGETEETLKKLL 753
Periostin4      -------PIIKKYTKIIDGVPVEITEKETREERIITGPEIKYTRISTGGGETEETLKKLL 723
Nterm           ----------------------------------------GSGGHHHHHH----- 659
                                                         .:** . ..

Periostin1      QEEVTKVTKFIEGGDGHLFEDEEIKRLLQGDTPVRKLQANKKVQGSRRRLREGRSQ 836
Periostin2      QEEVTKVTKFIEGGDGHLFEDEEIKRLLQGDTPVRKLQANKKVQGSRRRLREGRSQ 779
Periostin3      QED--------------------------TPVRKLQANKKVQGSRRRLREGRSQ 781
Periostin4      QED--------------------------TPVRKLQANKKVQGSRRRLREGRSQ 751
Nterm           ------------------------------------------------------
```

FIG. 1B

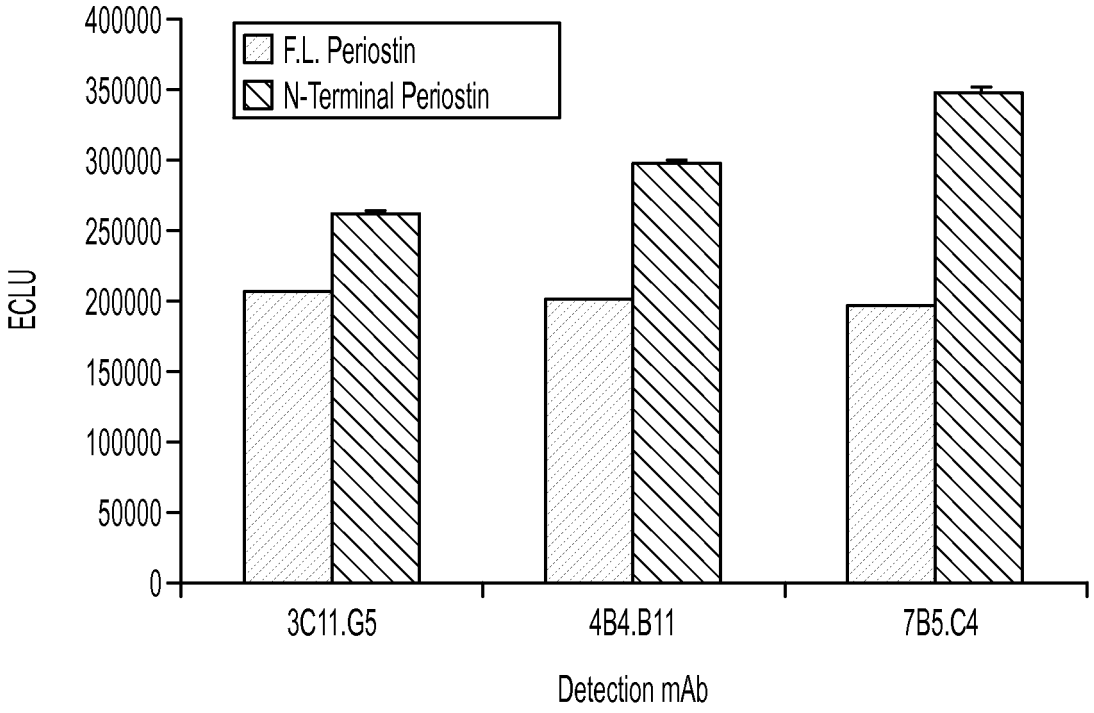

400000
350000
300000
250000
200000
150000
100000
50000
0
ECLU
F.L. Periostin
N-Terminal Periostin
3C11.G5
4B4.B11
7B5.C4
Detection mAb

FIG. 2A

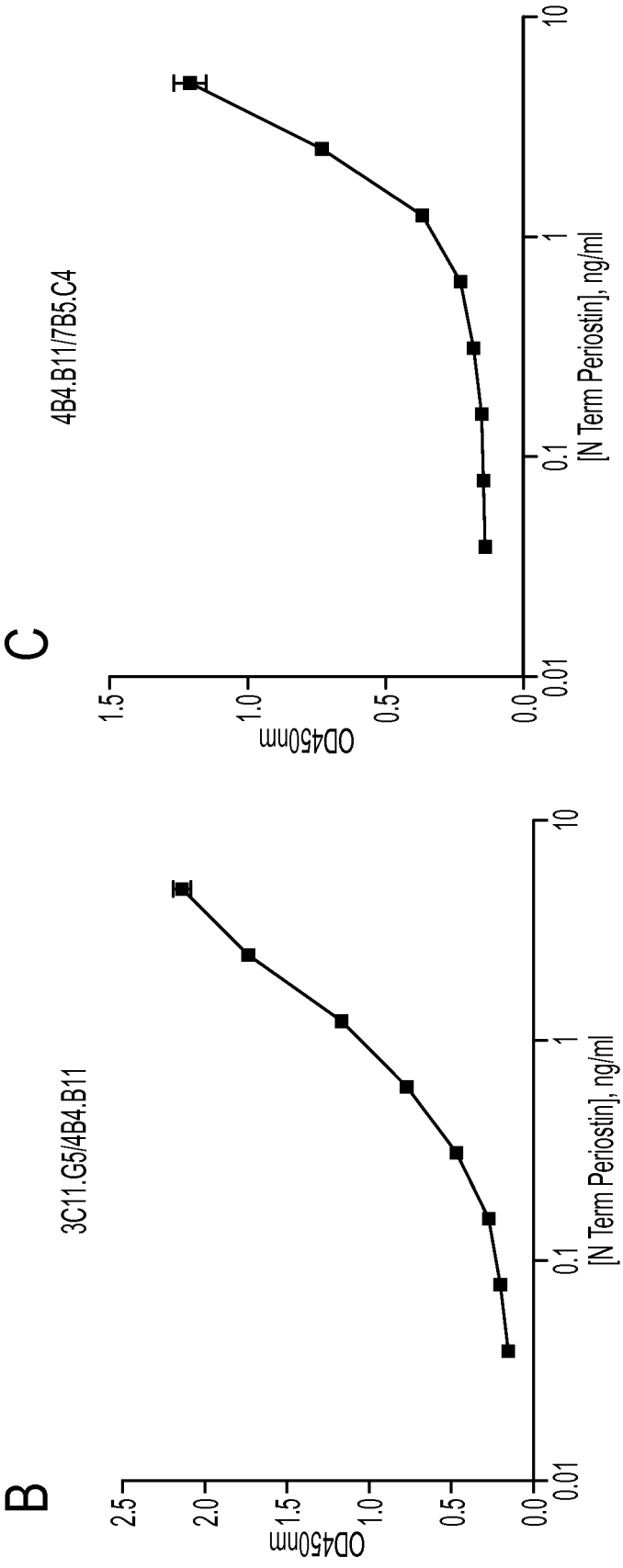
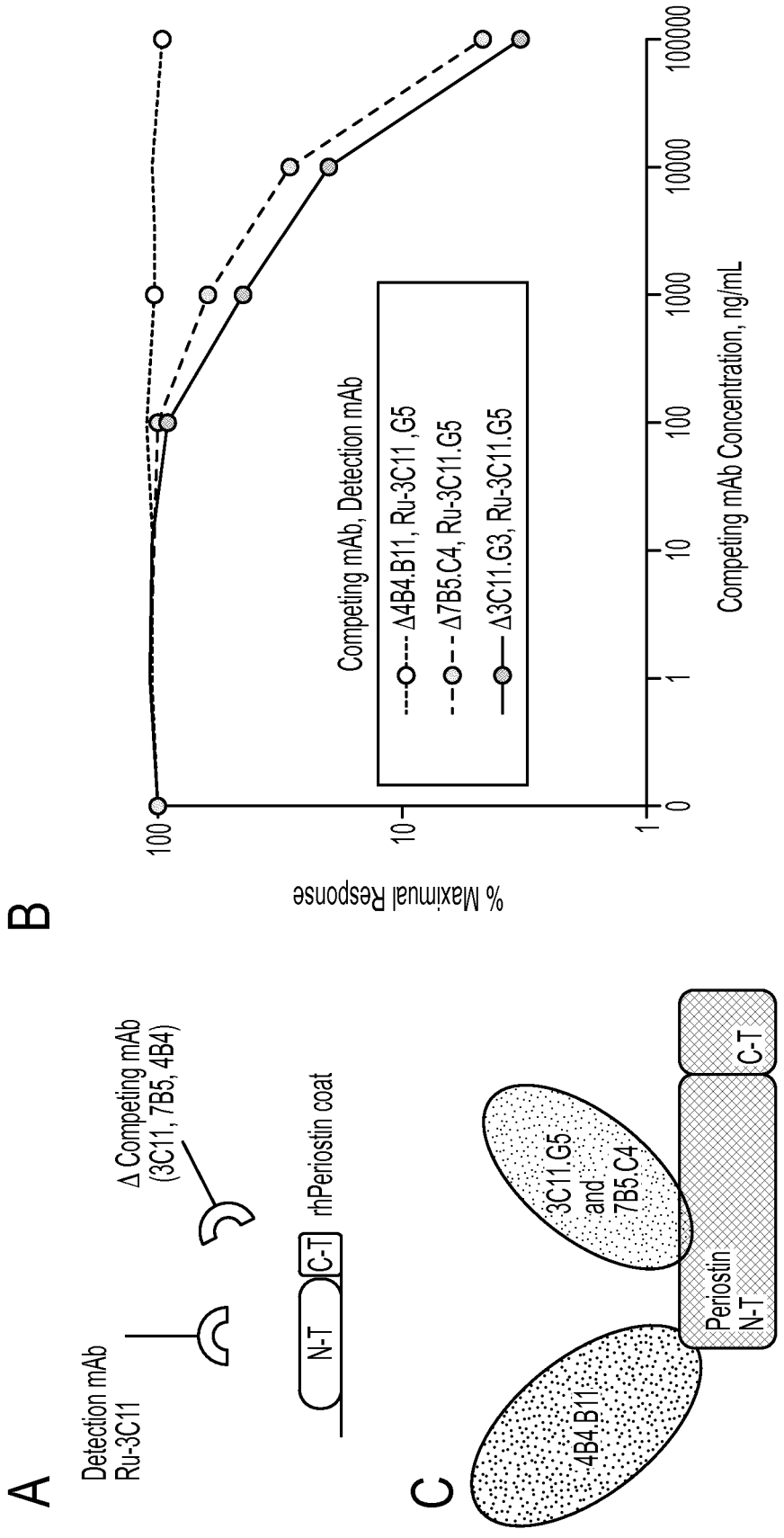

B
3C11.G5/4B4.B11
OD450nm
2.5
2.0
1.5
1.0
0.5
0.0
0.01
0.1
1
10
[N Term Periostin], ng/ml
C
4B4.B11/7B5.C4
OD450nm
1.5
1.0
0.5
0.0
0.01
0.1
1
10
[N Term Periostin], ng/ml

FIG. 2B & FIG. 2C



7B5.C4 and 3C11.G5 antibodies are competitive inhibitors.

FIG. 3A & FIG. 3B

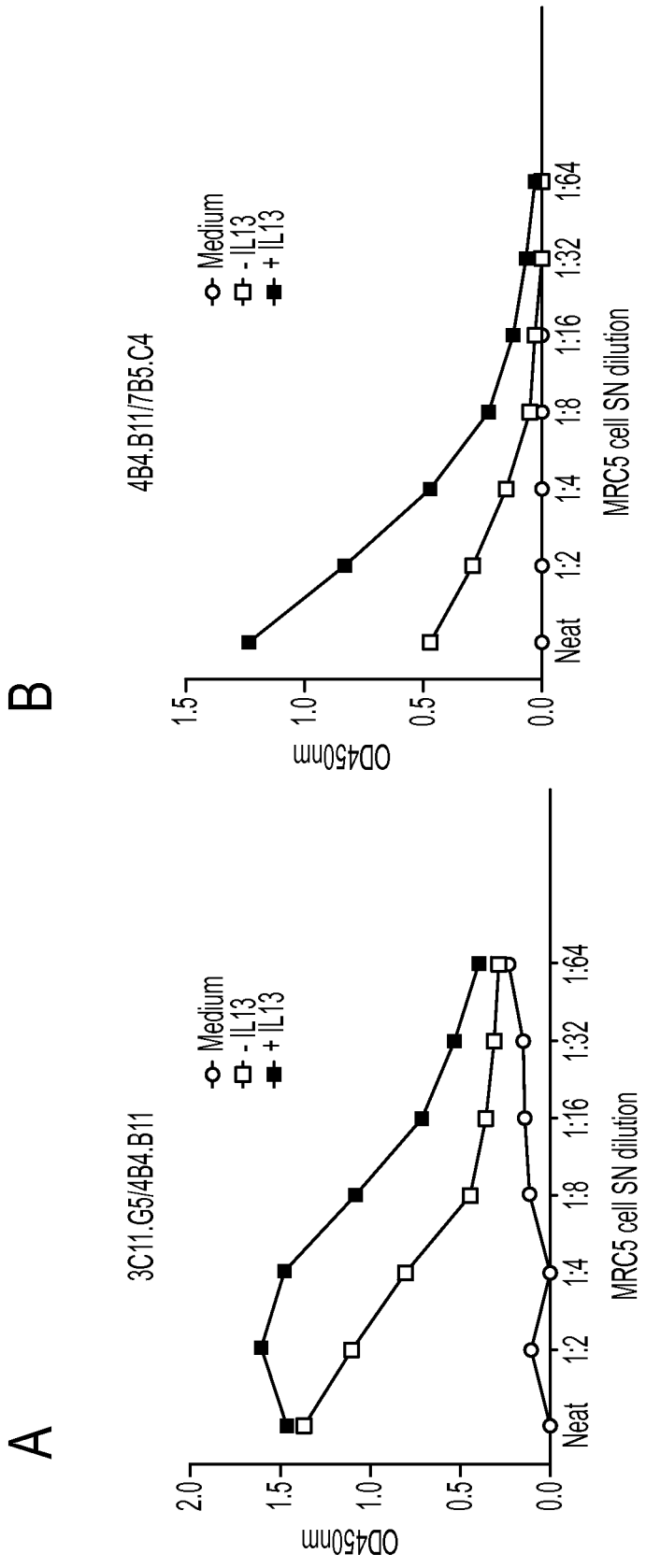

A
3C11.G5/4B4.B11
Medium
- IL13
+ IL13
OD450nm
2.0
1.5
1.0
0.5
0.0
Neat
1:2
1:4
1:8
1:16
1:32
1:64
MRC5 cell SN dilution
B
4B4.B11/7B5.C4
Medium
- IL13
+ IL13
OD450nm
1.5
1.0
0.5
0.0
Neat
1:2
1:4
1:8
1:16
1:32
1:64
MRC5 cell SN dilution

FIG. 4A & FIG. 4B

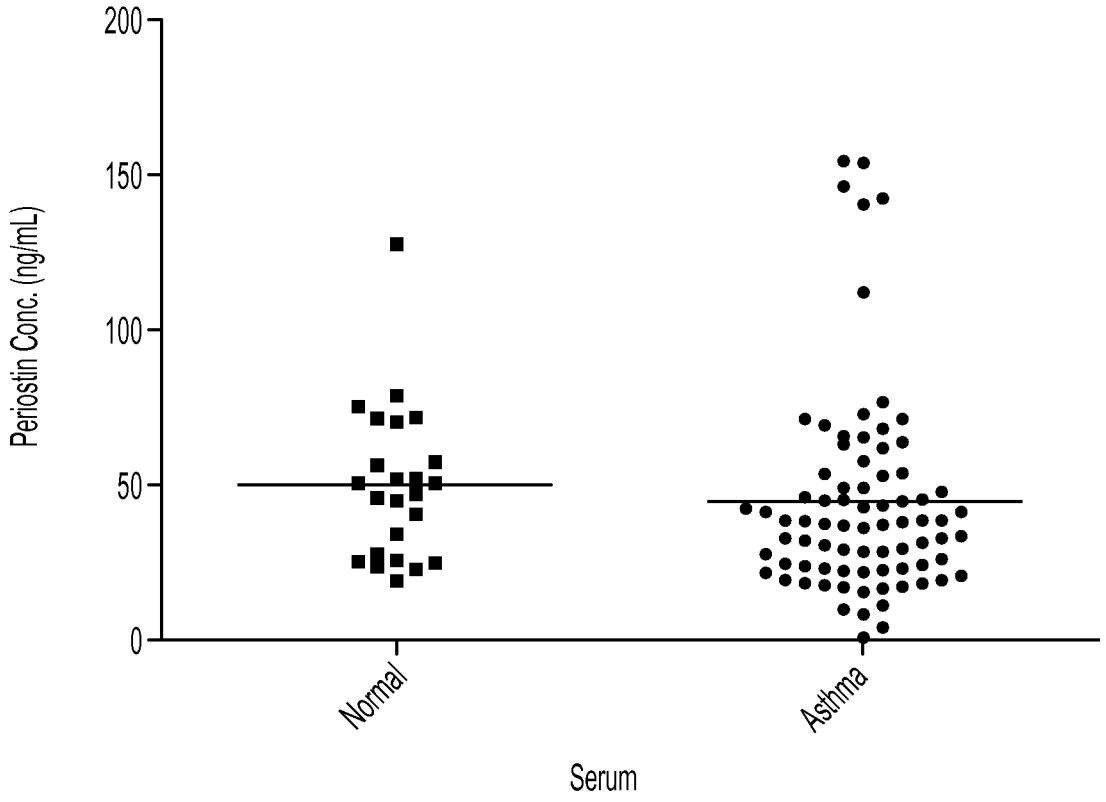


FIG. 5A

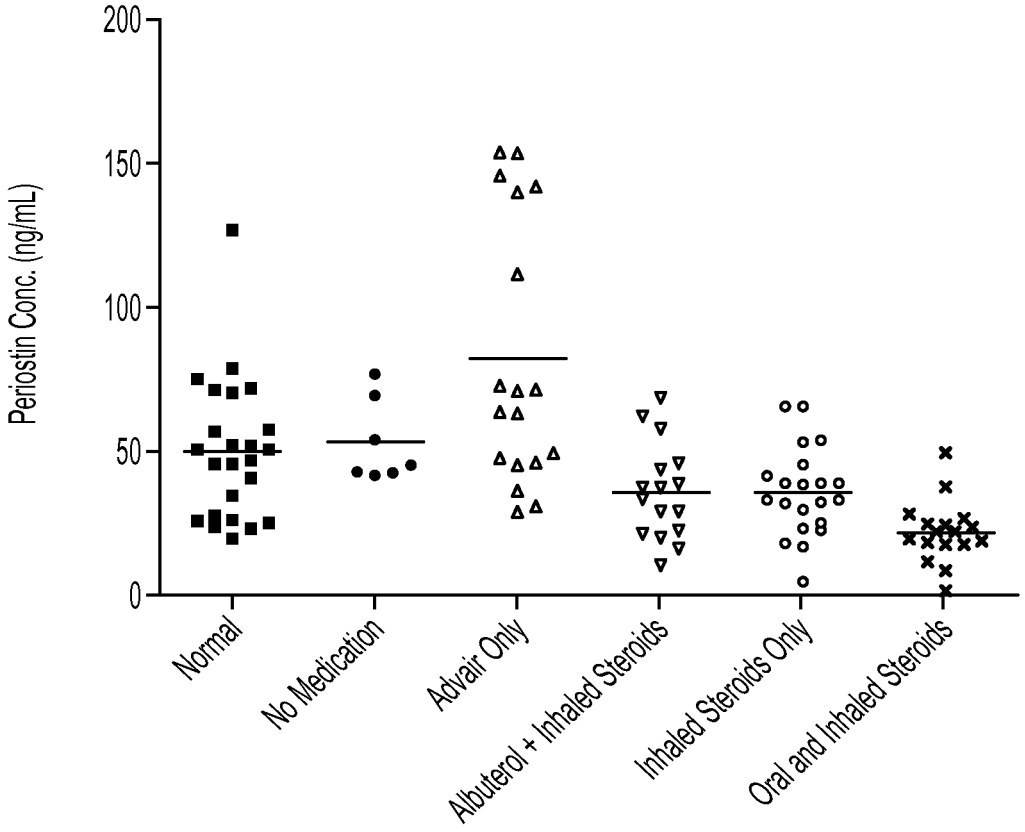

200
150
100
50
0
Periostin Conc. (ng/mL)
Normal
No Medication
Advair Only
Albuterol + Inhaled Steroids
Inhaled Steroids Only
Oral and Inhaled Steroids

FIG. 5B

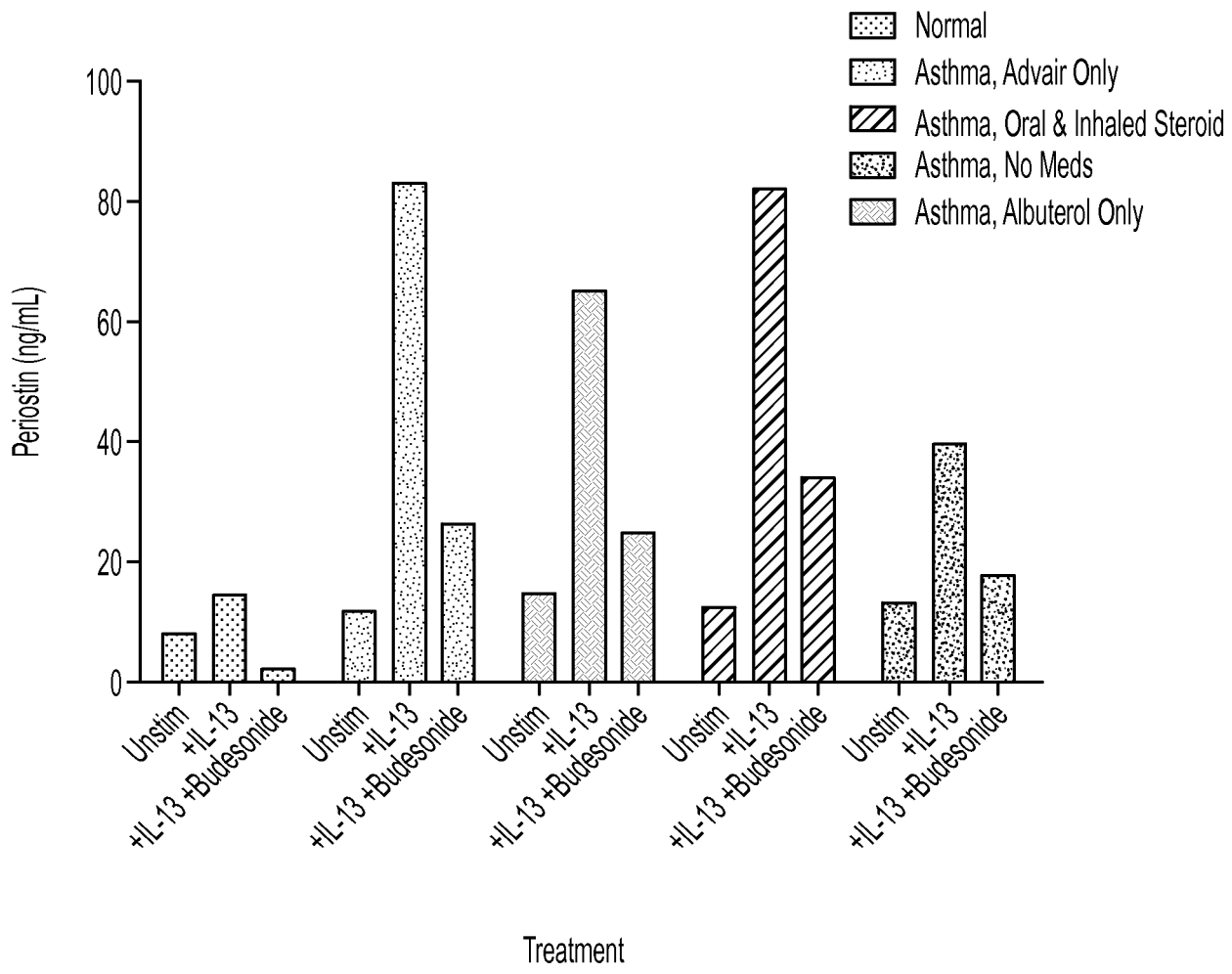

Normal
Asthma, Advair Only
Asthma, Oral & Inhaled Steroid
Asthma, No Meds
Asthma, Albuterol Only
Periostin (ng/mL)
100
80
60
40
20
0
Unstim
+IL-13
+IL-13 +Budesonide
Treatment

FIG. 6

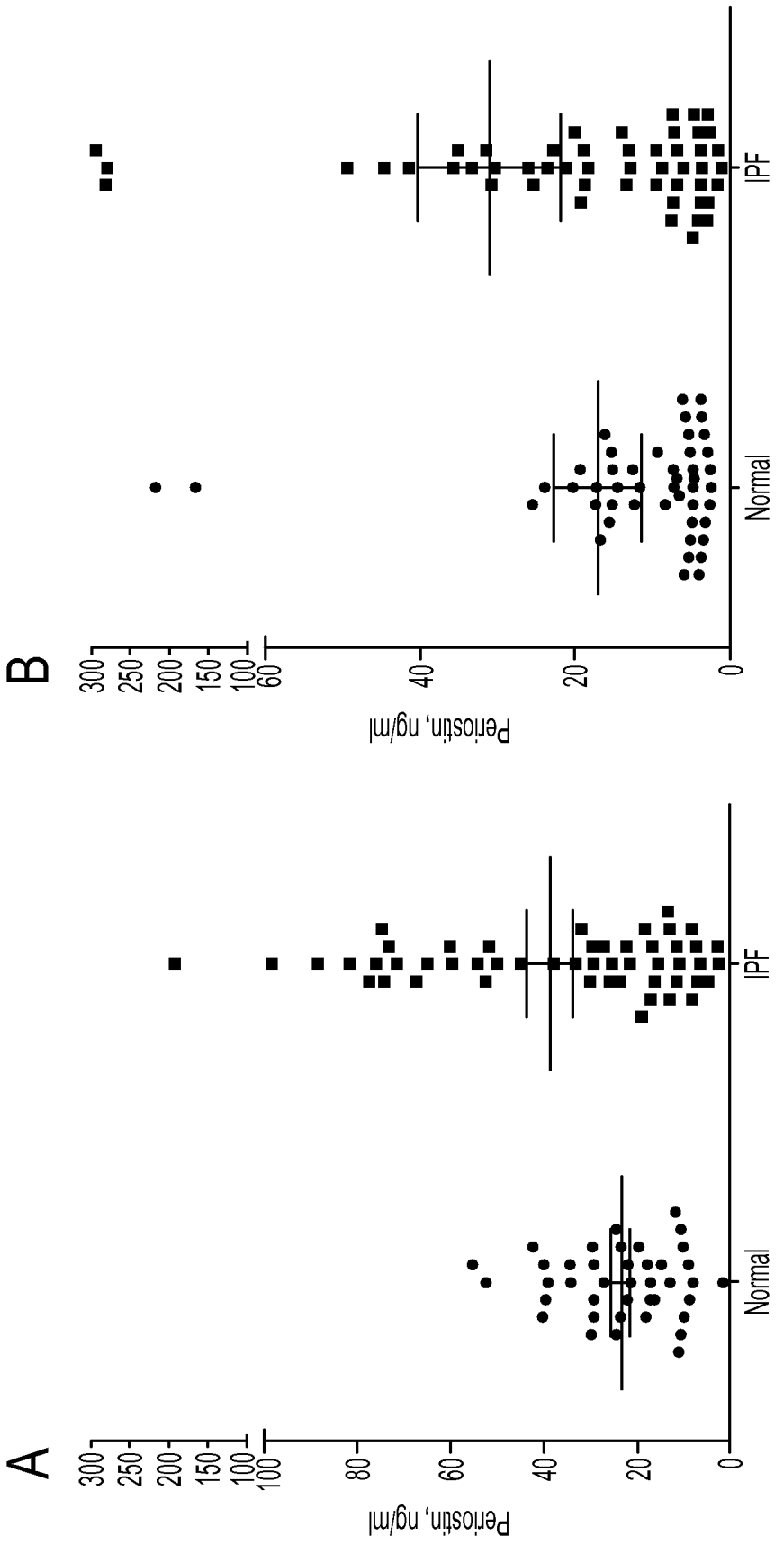

A
Periostin, ng/ml
300
250
200
150
100
100
80
60
40
20
0
Normal
IPF
B
Periostin, ng/ml
300
250
200
150
100
60
40
20
0
Normal
IPF

FIG. 7A & FIG. 7B

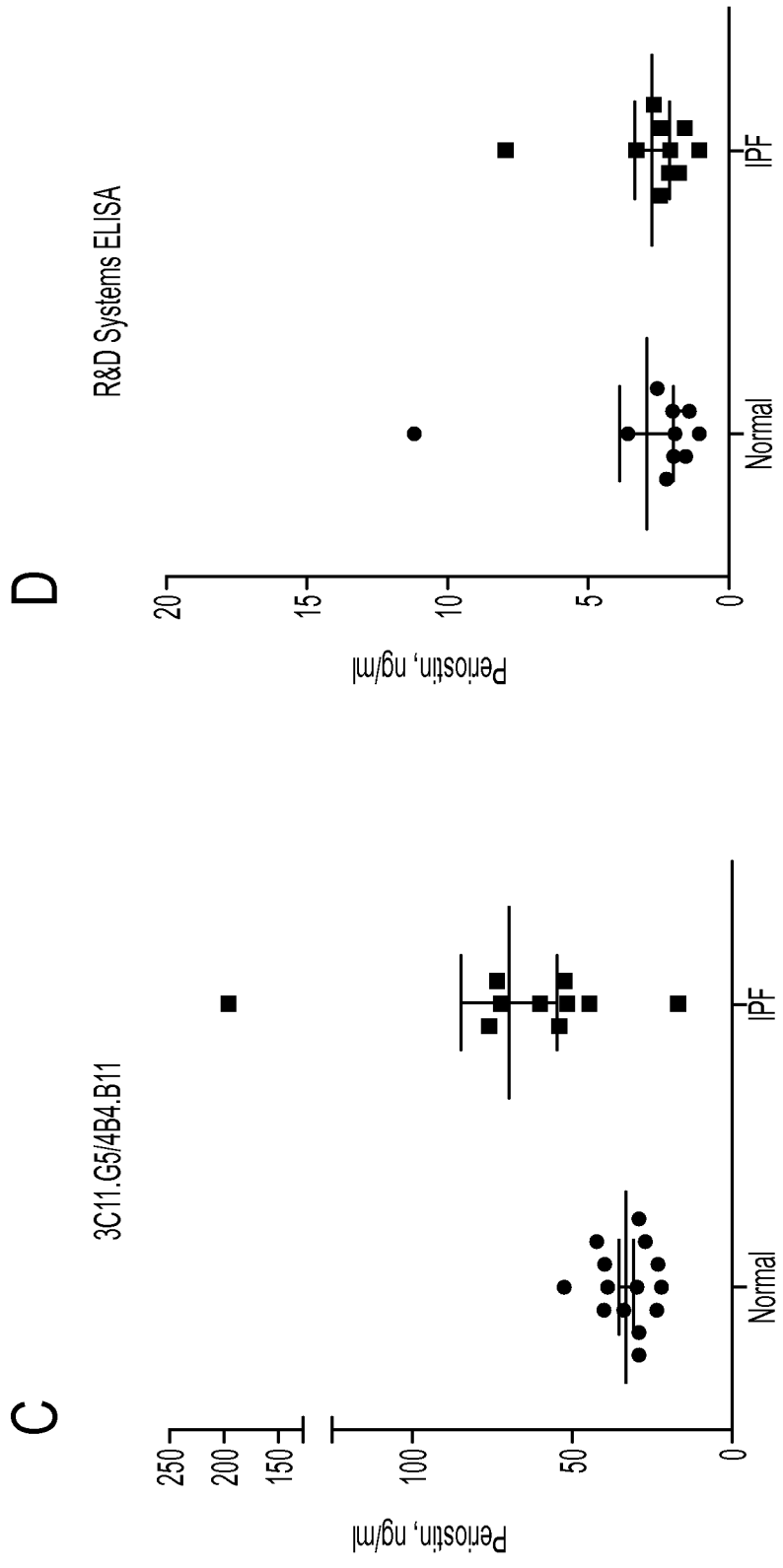

C
3C11.G5/4B4.B11
Periostin, ng/ml
250
200
150
100
50
0
Normal
IPF
D
R&D Systems ELISA
Periostin, ng/ml
20
15
10
5
0
Normal
IPF

FIG. 7C & FIG. 7D

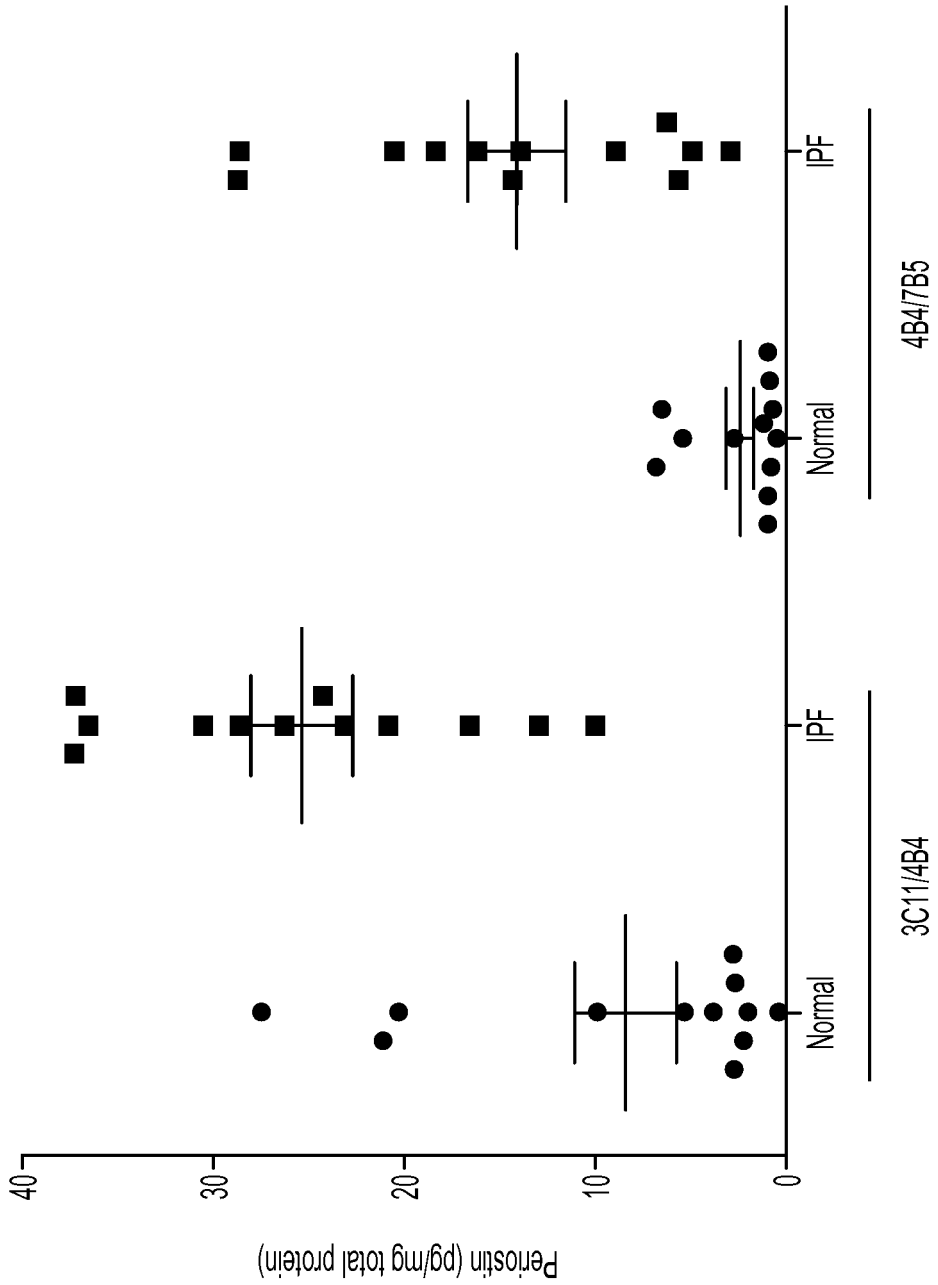

Periostin (pg/mg total protein)
40
30
20
10
0
Normal
IPF
3C11/4B4
Normal
IPF
4B4/7B5

FIG. 8

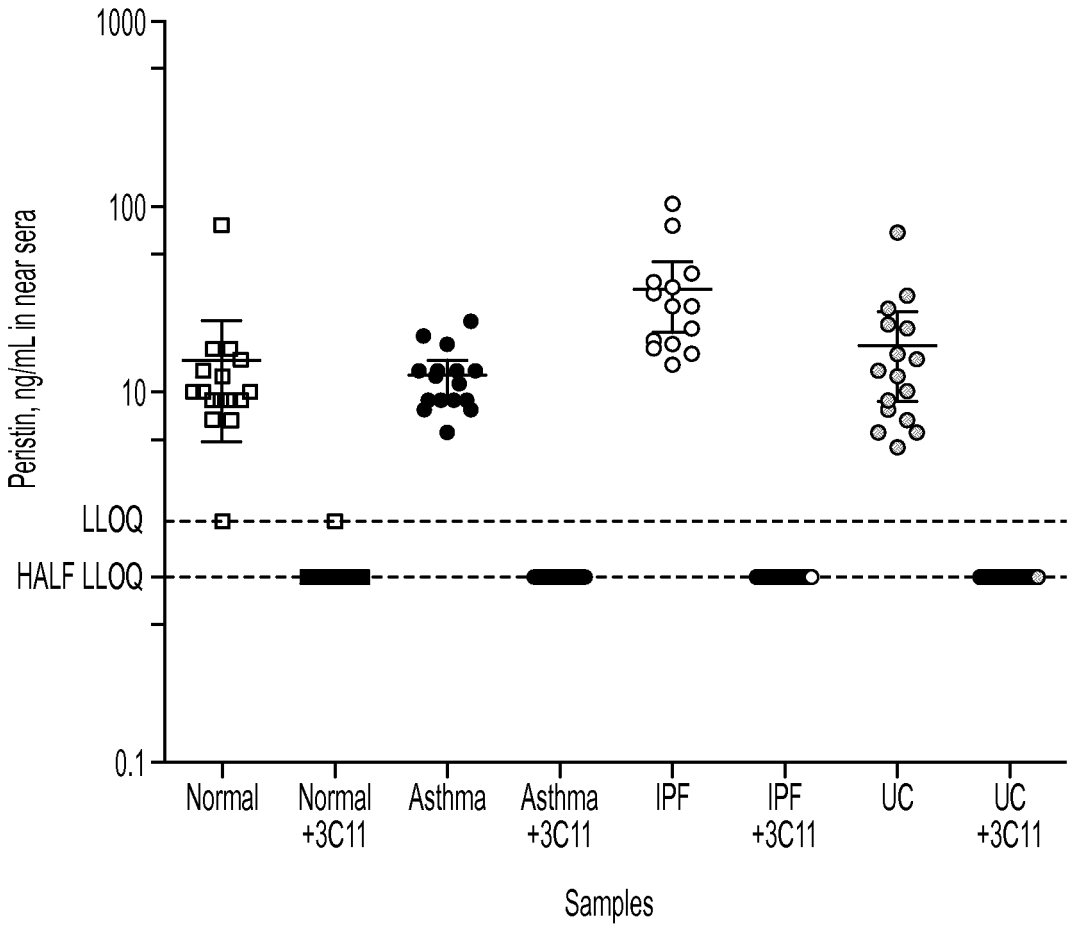

1000
100
10
LLOQ
HALF LLOQ
0.1
Peristin, ng/mL in near sera
Normal
Normal +3C11
Asthma
Asthma +3C11
IPF
IPF +3C11
UC
UC +3C11
Samples

FIG. 9

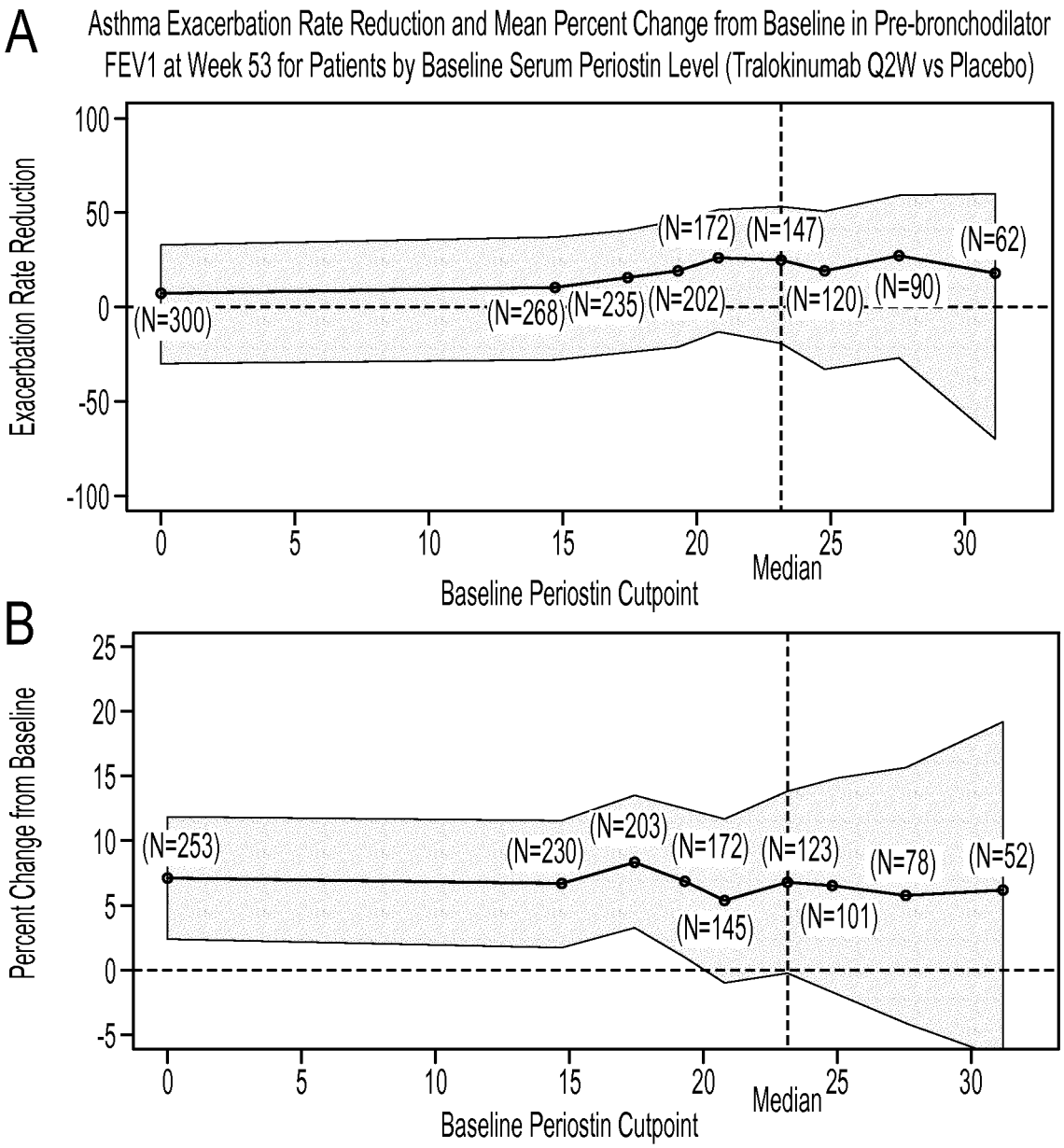


FIG. 10A & FIG. 10B

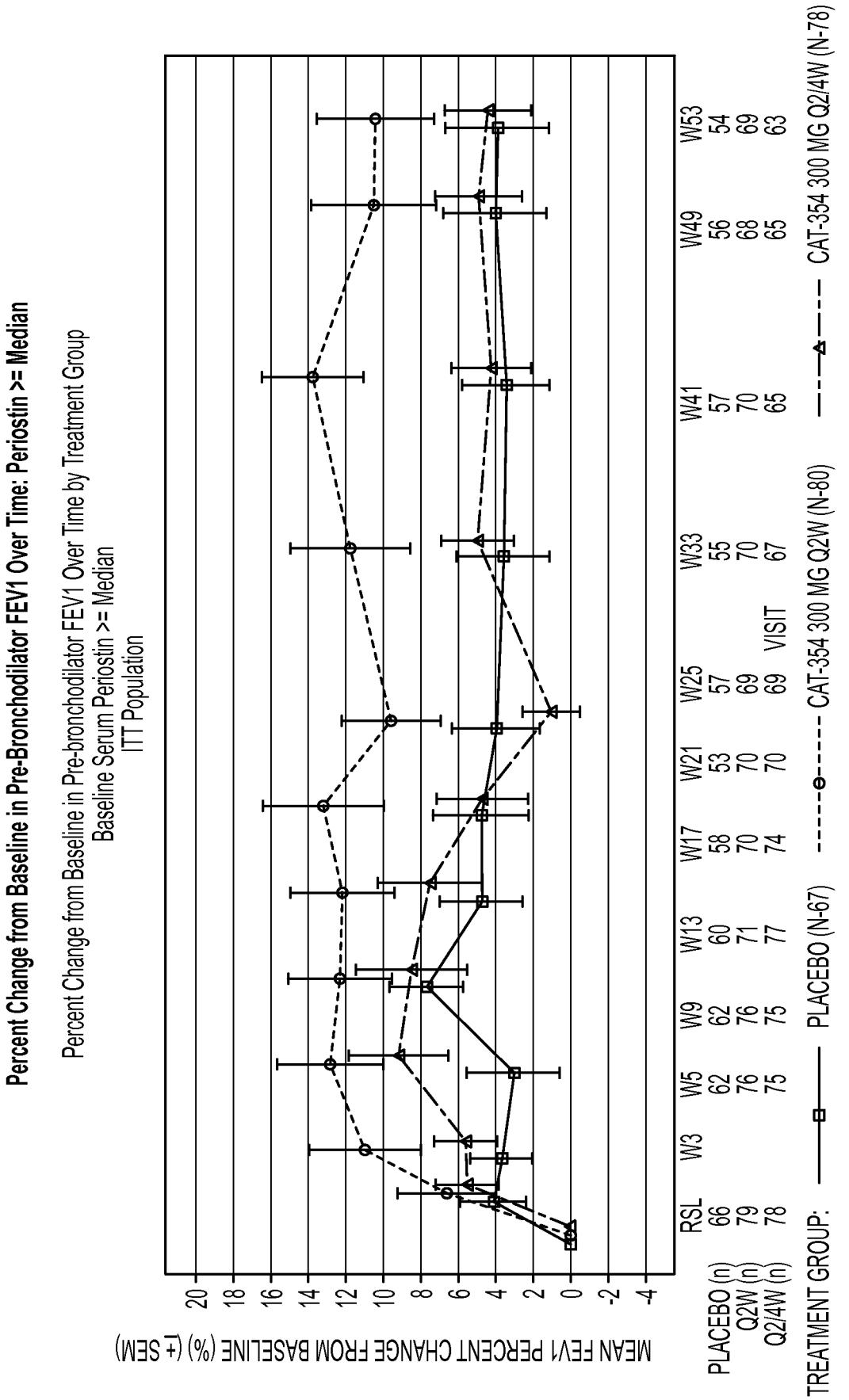

Percent Change from Baseline in Pre-Bronchodilator FEV1 Over Time: Periostin >= Median
Percent Change from Baseline in Pre-bronchodilator FEV1 Over Time by Treatment Group
Baseline Serum Periostin >= Median
ITT Population
MEAN FEV1 PERCENT CHANGE FROM BASELINE (%) (± SEM)
20
18
16
14
12
10
8
6
4
2
0
-2
-4
RSL W3 W5 W9 W13 W17 W21 W25 W33 W41 W49 W53
PLACEBO (n) 66 62 62 60 58 53 57 55 57 56 54
Q2W (n) 79 76 76 71 70 70 69 70 70 68 69
Q2/4W (n) 78 75 75 77 74 70 69 67 65 65 63
VISIT
TREATMENT GROUP: PLACEBO (N-67) CAT-354 300 MG Q2W (N-80) CAT-354 300 MG Q2/4W (N-78)

FIG. 11A

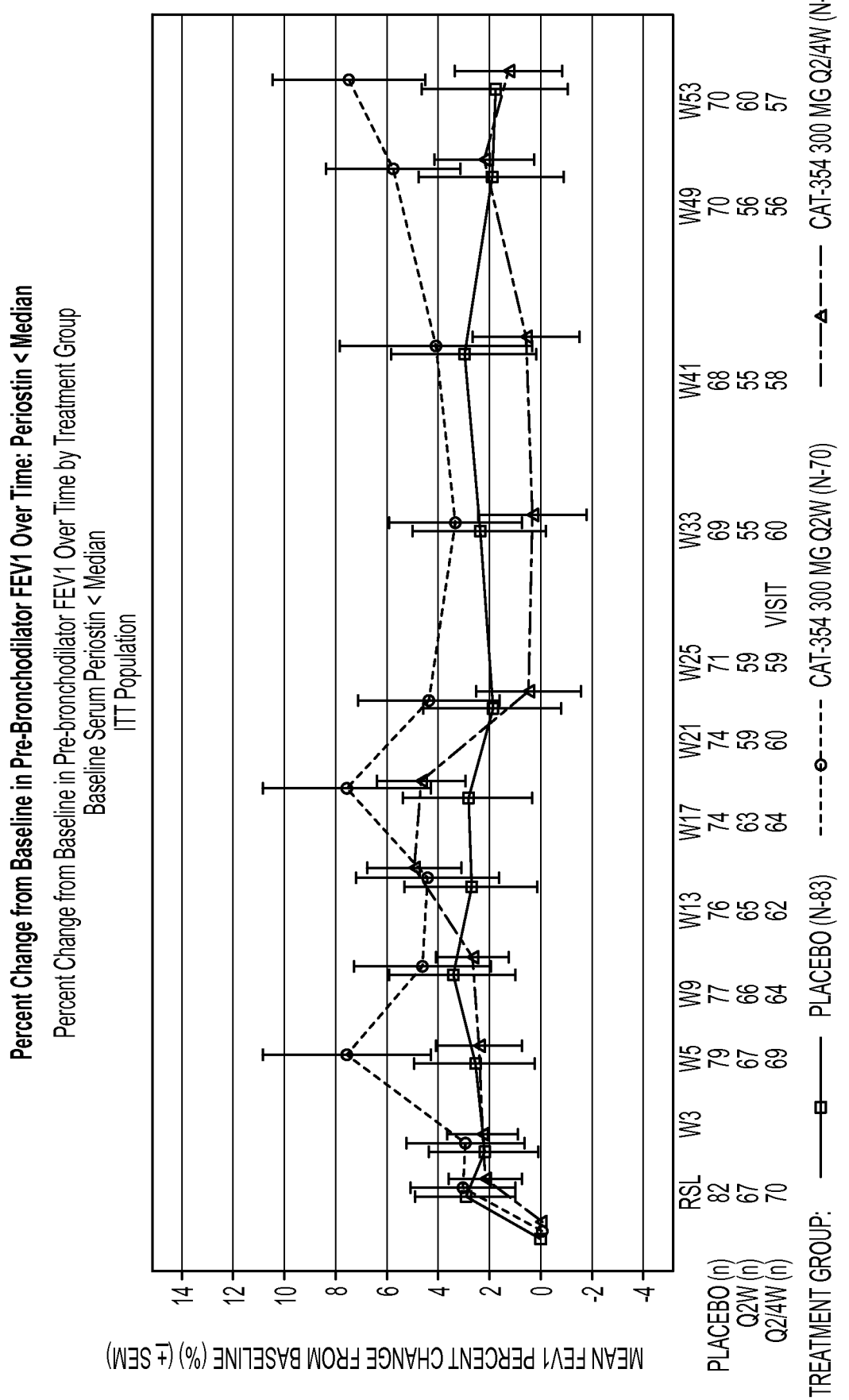

Percent Change from Baseline in Pre-Bronchodilator FEV1 Over Time: Periostin < Median
Percent Change from Baseline in Pre-bronchodilator FEV1 Over Time by Treatment Group
Baseline Serum Periostin < Median
ITT Population
MEAN FEV1 PERCENT CHANGE FROM BASELINE (%) (± SEM)
14
12
10
8
6
4
2
0
-2
-4
RSL W3 W5 W9 W13 W17 W21 W25 W33 W41 W49 W53
PLACEBO (n) 82 79 77 76 74 74 71 69 68 70 70
Q2W (n) 67 67 66 65 63 59 59 55 55 56 60
Q2/4W (n) 70 69 64 62 64 60 59 60 58 56 57
VISIT
TREATMENT GROUP: PLACEBO (N-83) CAT-354 300 MG Q2W (N-70) CAT-354 300 MG Q2/4W (N-72)

FIG. 11B

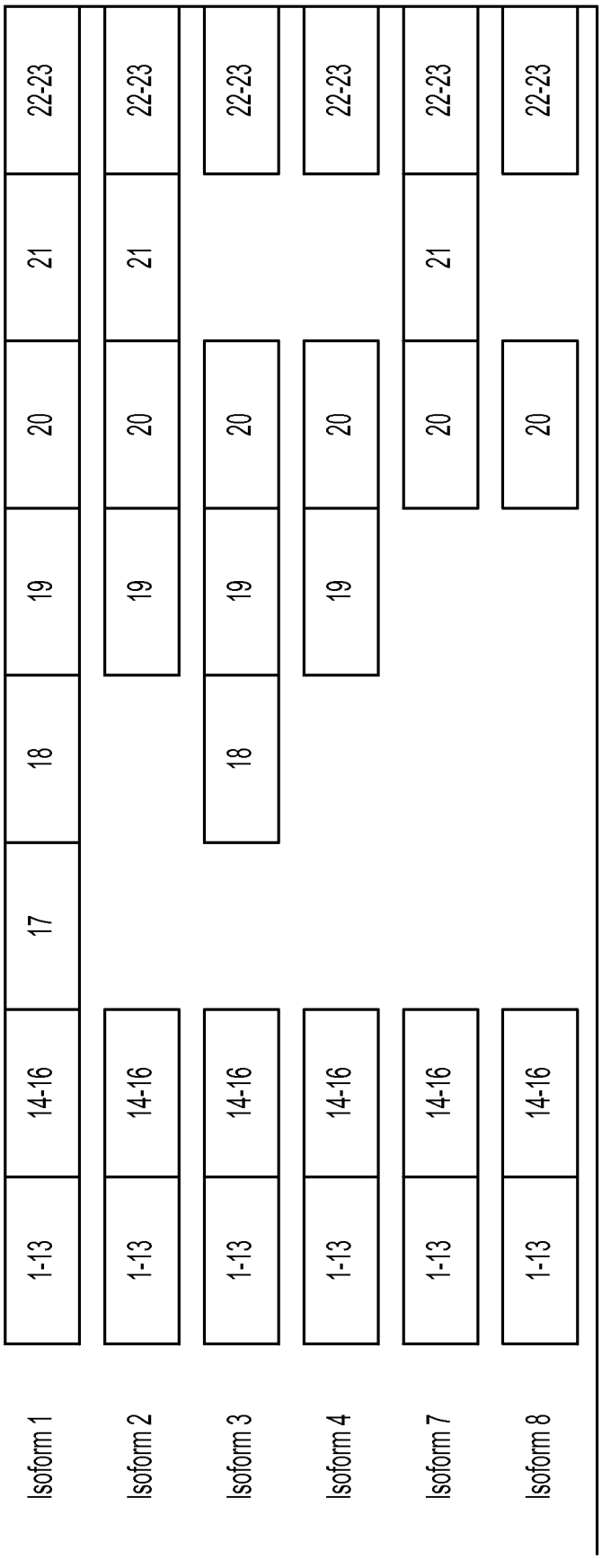

Isoform 1
Isoform 2
Isoform 3
Isoform 4
Isoform 7
Isoform 8
1-13
14-16
17
18
19
20
21
22-23

FIG. 12

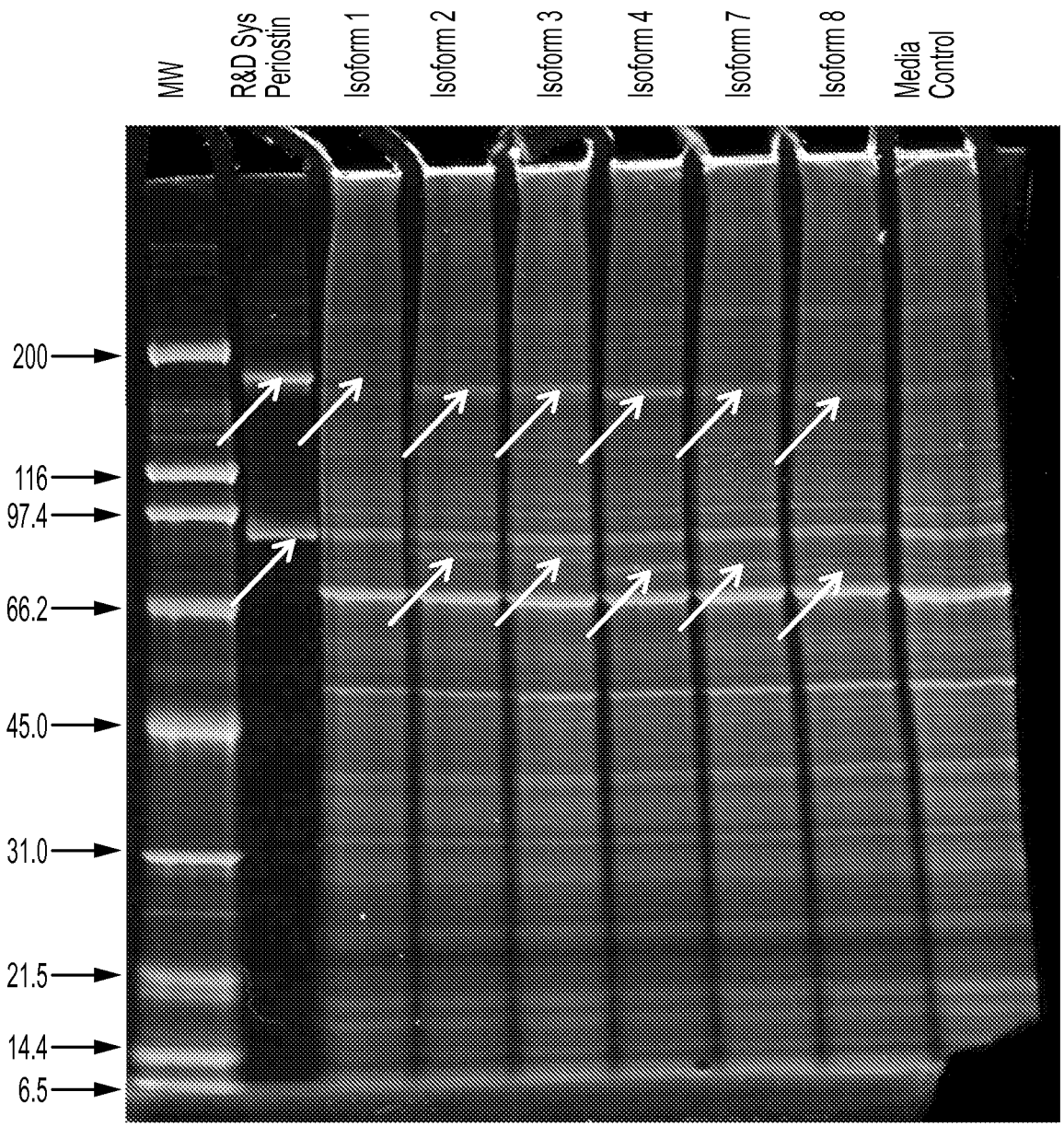

MW
R&D Sys Periostin
Isoform 1
Isoform 2
Isoform 3
Isoform 4
Isoform 7
Isoform 8
Media Control
200
116
97.4
66.2
45.0
31.0
21.5
14.4
6.5

FIG. 13

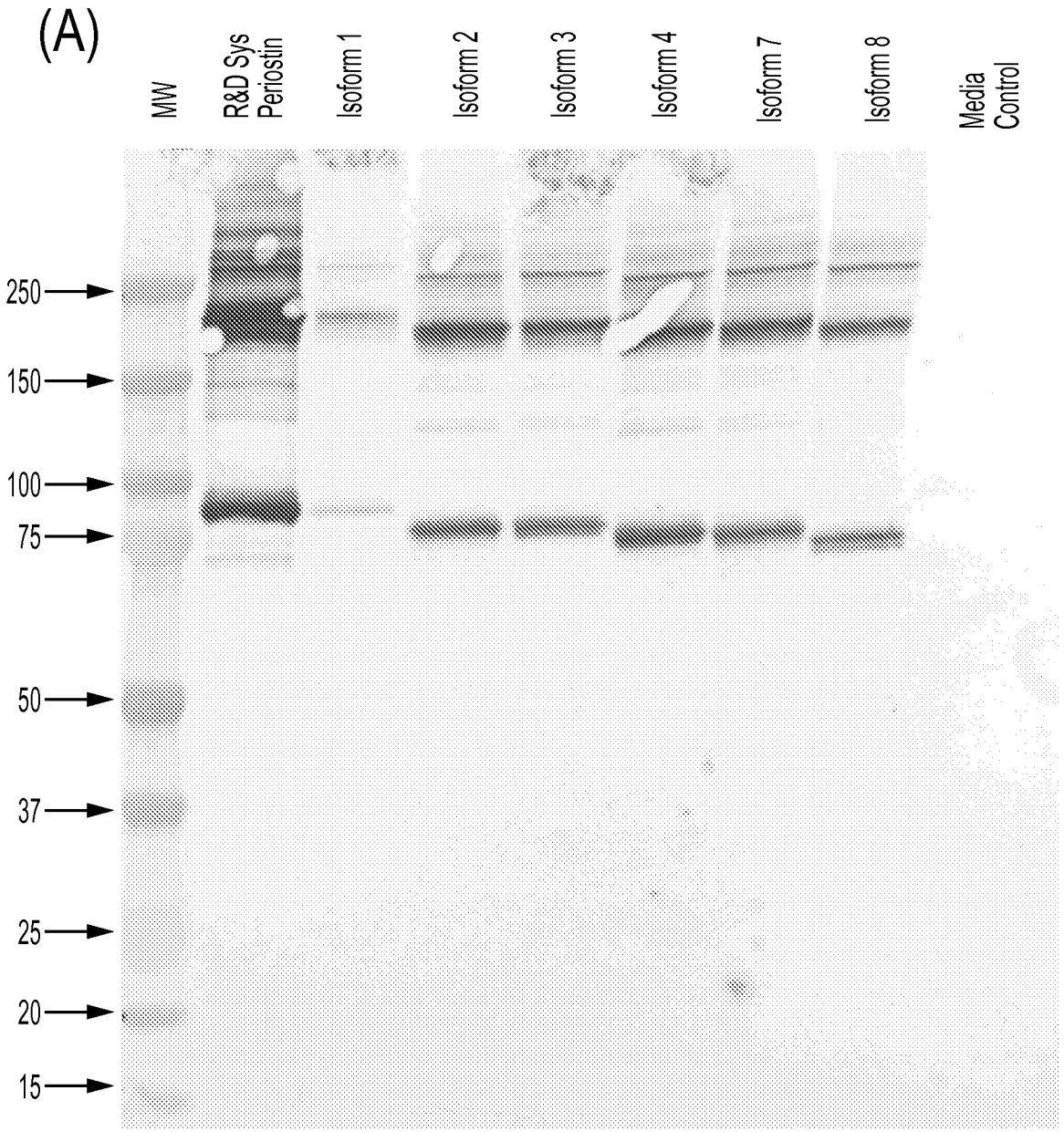

(A)
MW
R&D Sys Periostin
Isoform 1
Isoform 2
Isoform 3
Isoform 4
Isoform 7
Isoform 8
Media Control
250
150
100
75
50
37
25
20
15

FIG. 14A

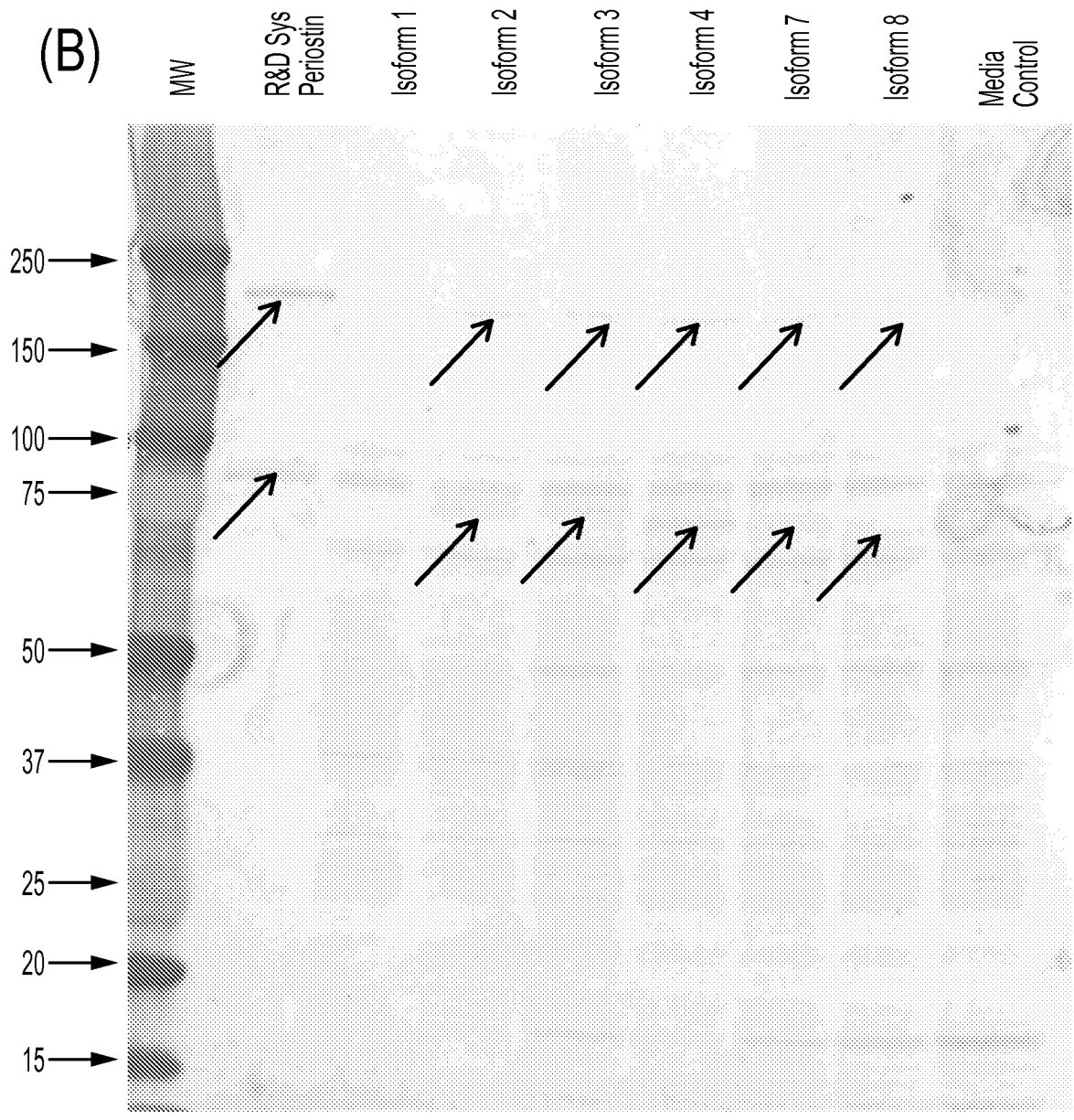

(B)
MW
R&D Sys Periostin
Isoform 1
Isoform 2
Isoform 3
Isoform 4
Isoform 7
Isoform 8
Media Control
250
150
100
75
50
37
25
20
15

FIG. 14B

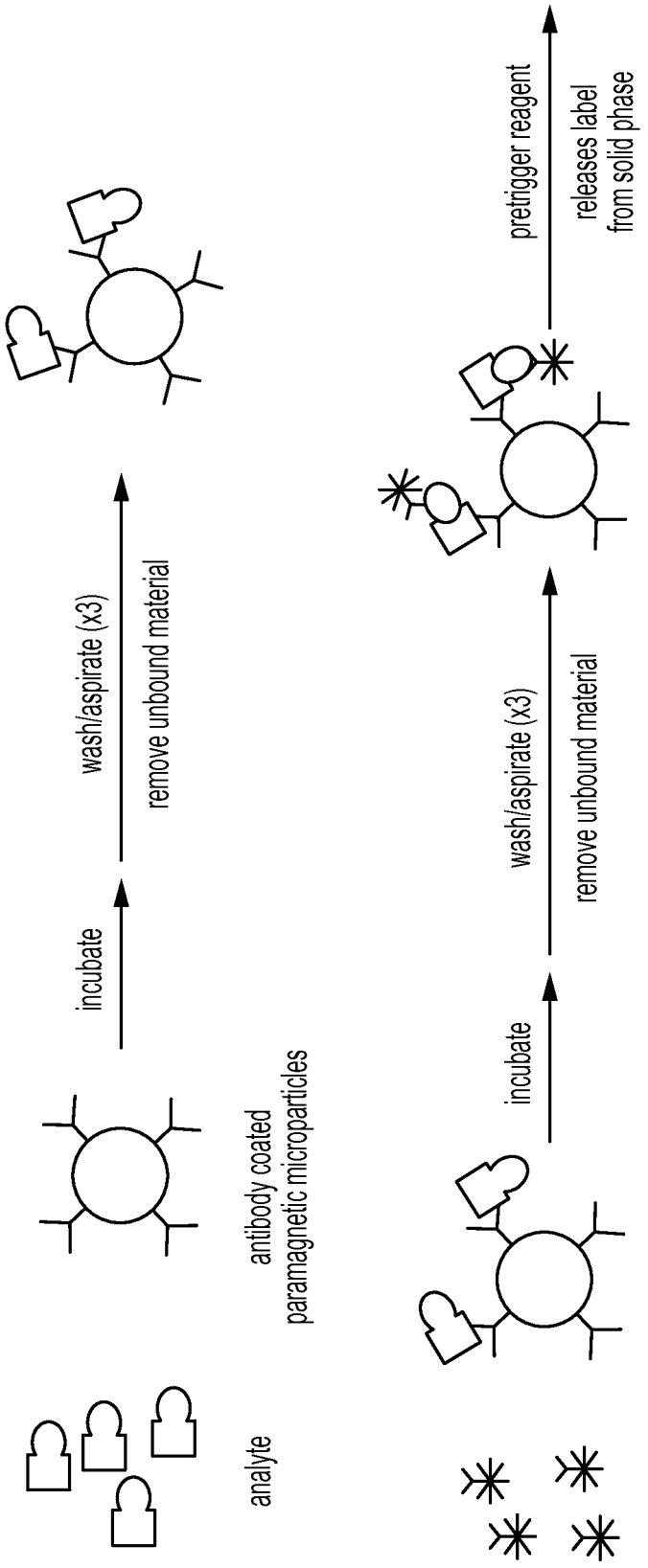

analyte
antibody coated paramagnetic microparticles
incubate
wash/aspirate (x3)
remove unbound material
acridinium derivative labeled tracer
incubate
wash/aspirate (x3)
remove unbound material
pretrigger reagent
releases label from solid phase
magnetic separation of particles from label
trigger reagent
READ

FIG. 15