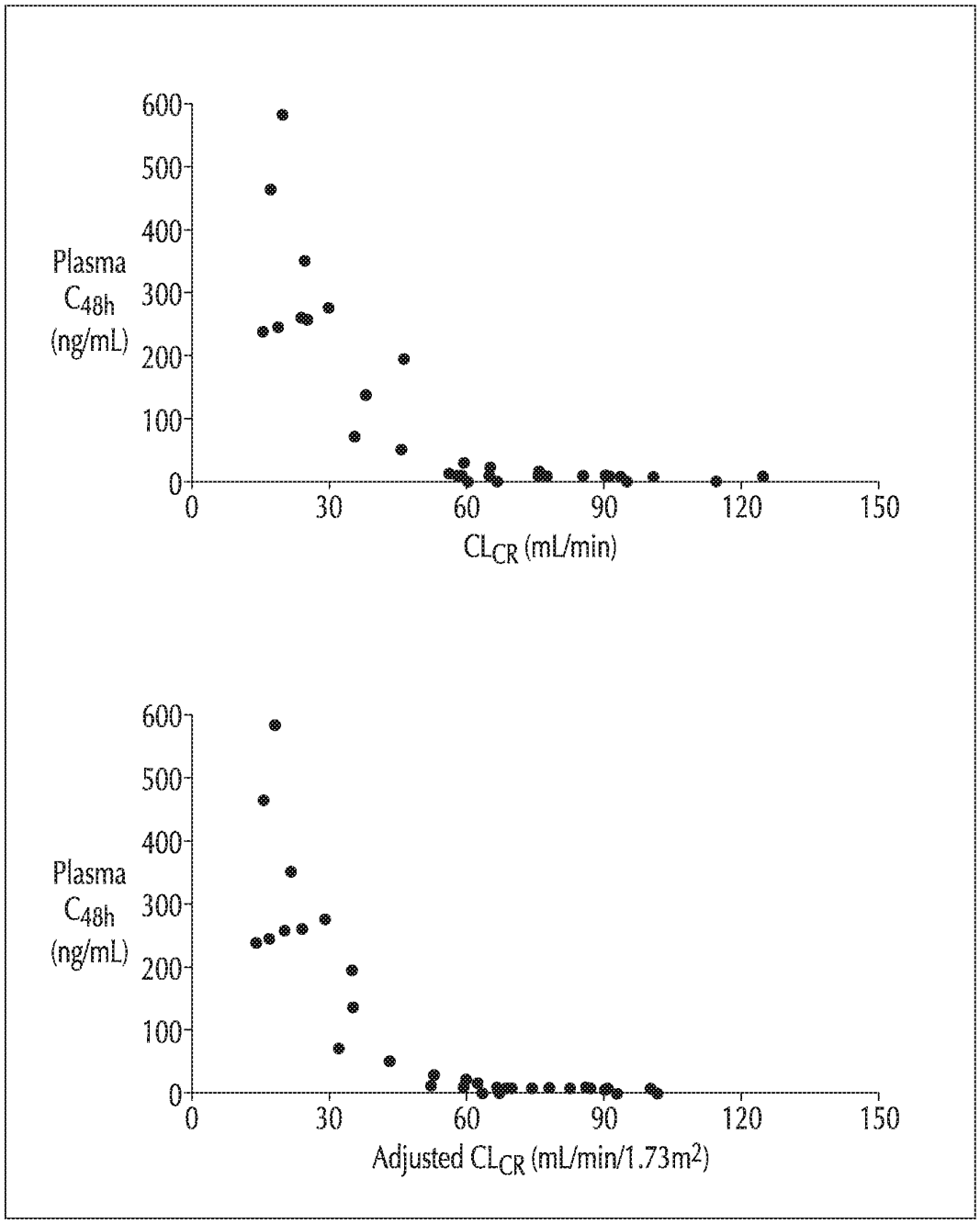

Plasma C_{48h} (ng/mL)
600
500
400
300
200
100
0
0
30
60
90
120
150
CL_{CR} (mL/min)
Plasma C_{48h} (ng/mL)
600
500
400
300
200
100
0
0
30
60
90
120
150
Adjusted CL_{CR} (mL/min/1.73m^2)

FIG. 1A

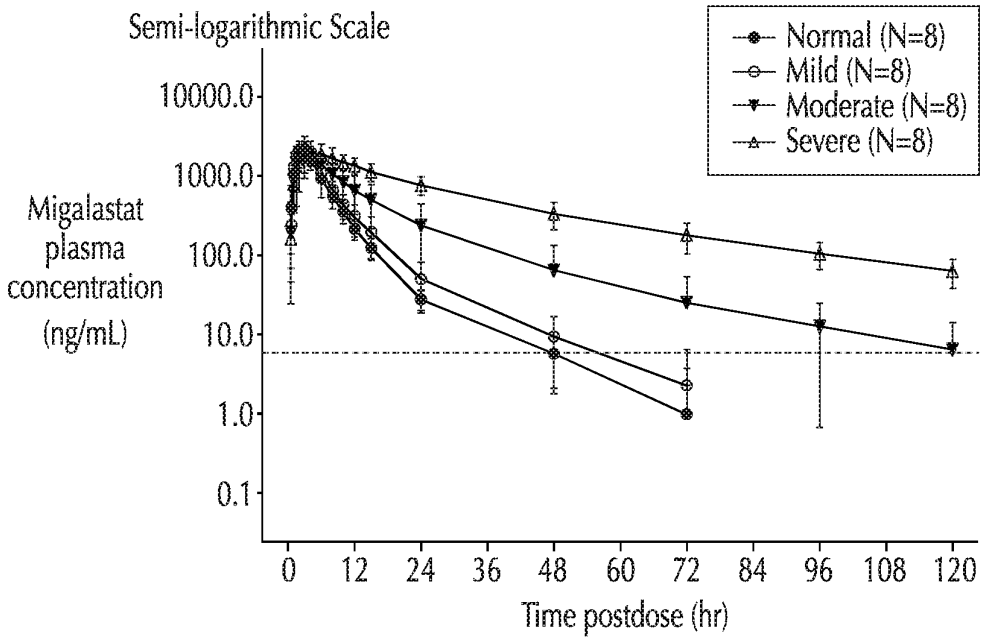

Semi-logarithmic Scale
Normal (N=8)
Mild (N=8)
Moderate (N=8)
Severe (N=8)
Migalastat plasma concentration (ng/mL)
10000.0
1000.0
100.0
10.0
1.0
0.1
0
12
24
36
48
60
72
84
96
108
120
Time postdose (hr)

FIG. 1B

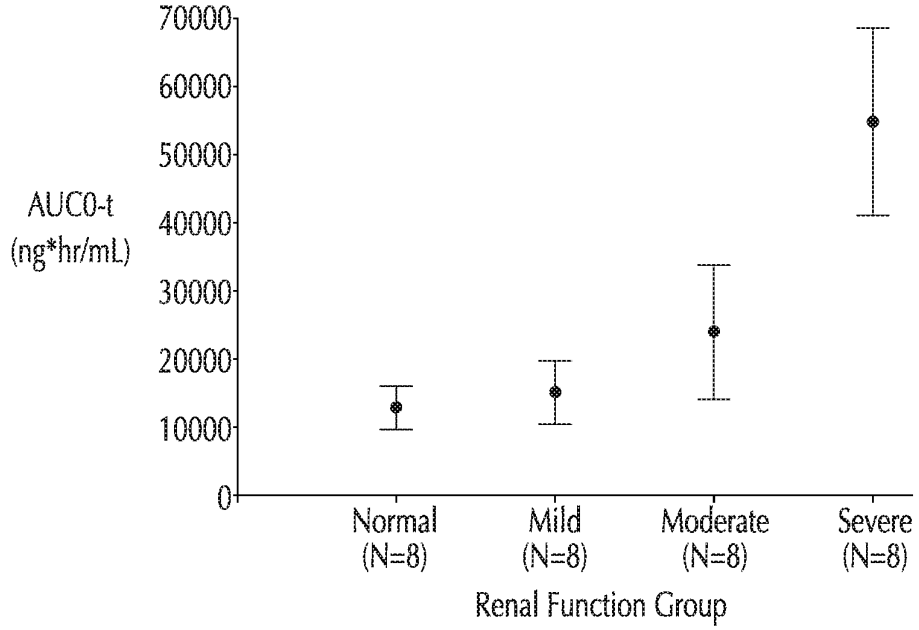

AUC0-t (ng*hr/mL)
70000
60000
50000
40000
30000
20000
10000
0
Normal (N=8)
Mild (N=8)
Moderate (N=8)
Severe (N=8)
Renal Function Group

FIG. 1C

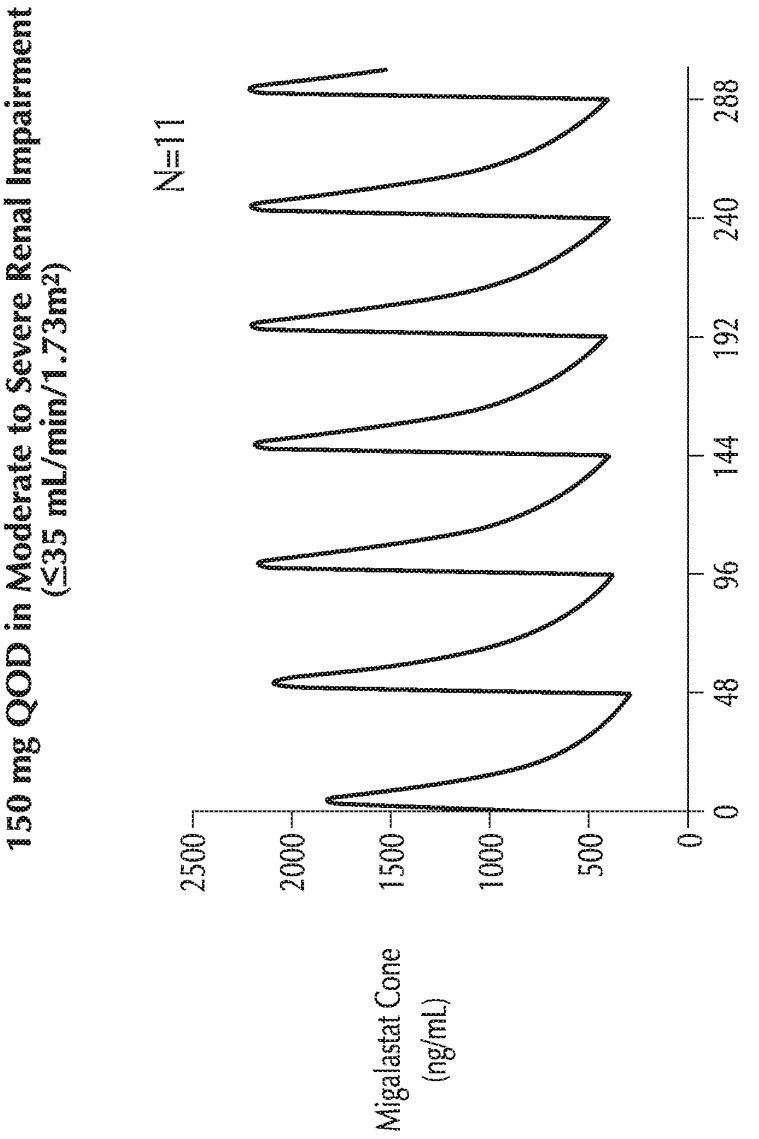

150 mg QOD in Moderate to Severe Renal Impairment
(≤35 mL/min/1.73m²)
N=11
Migalastat Conc
(ng/mL)
2500
2000
1500
1000
500
0
0
48
96
144
192
240
288
Time(hr)

FIG. 2

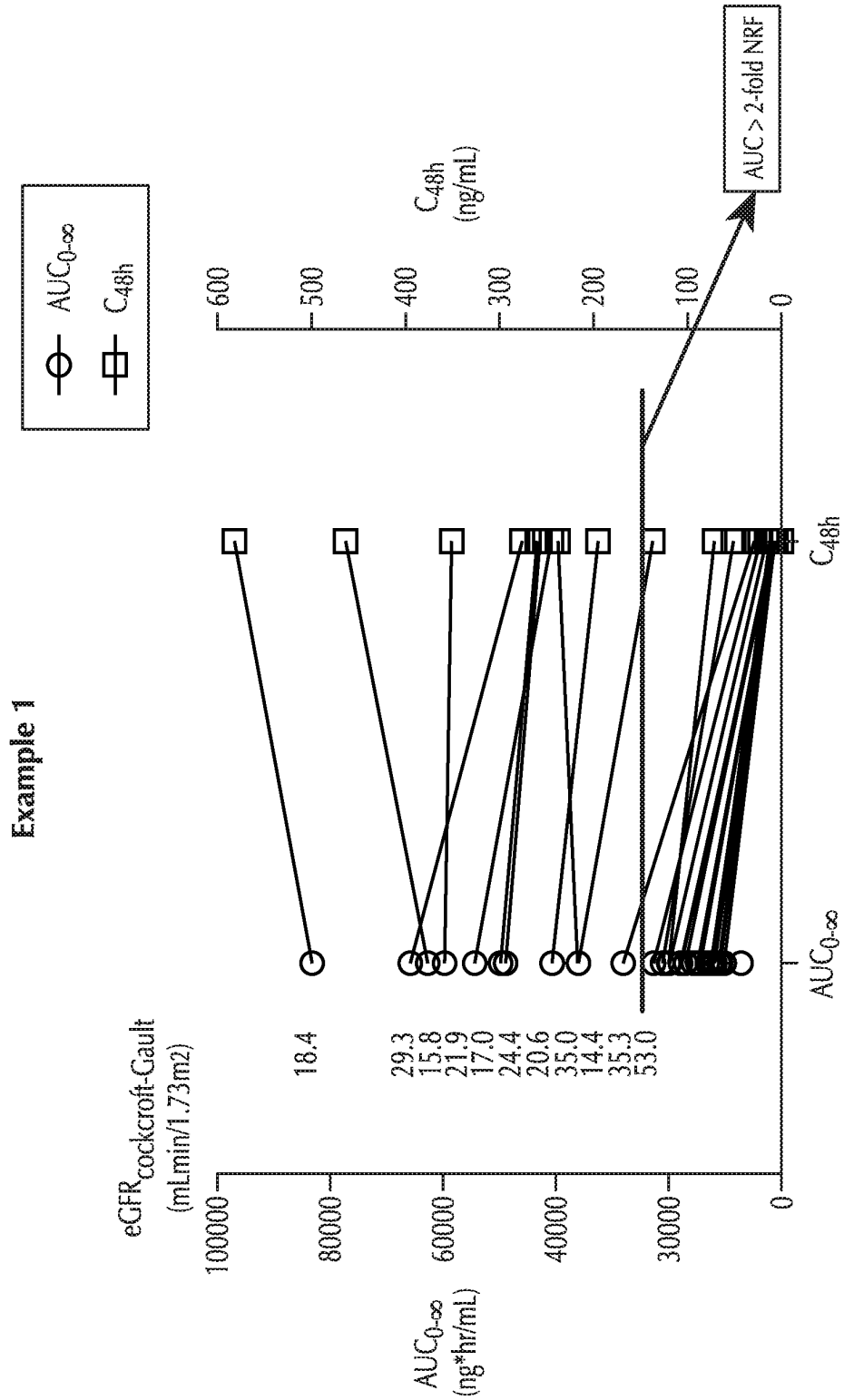

Example 1
$AUC_{0-\infty}$
C_{48h}
C_{48h} (ng/mL)
600
500
400
300
200
100
0
AUC > 2-fold NRF
C_{48h}
$AUC_{0-\infty}$
eGFR cockcroft-Gault (mLmin/1.73m2)
$AUC_{0-\infty}$ (ng*hr/mL)
100000
80000
60000
40000
30000
0
18.4
29.3
15.8
21.9
17.0
24.4
20.6
35.0
14.4
35.3
53.0

FIG. 3

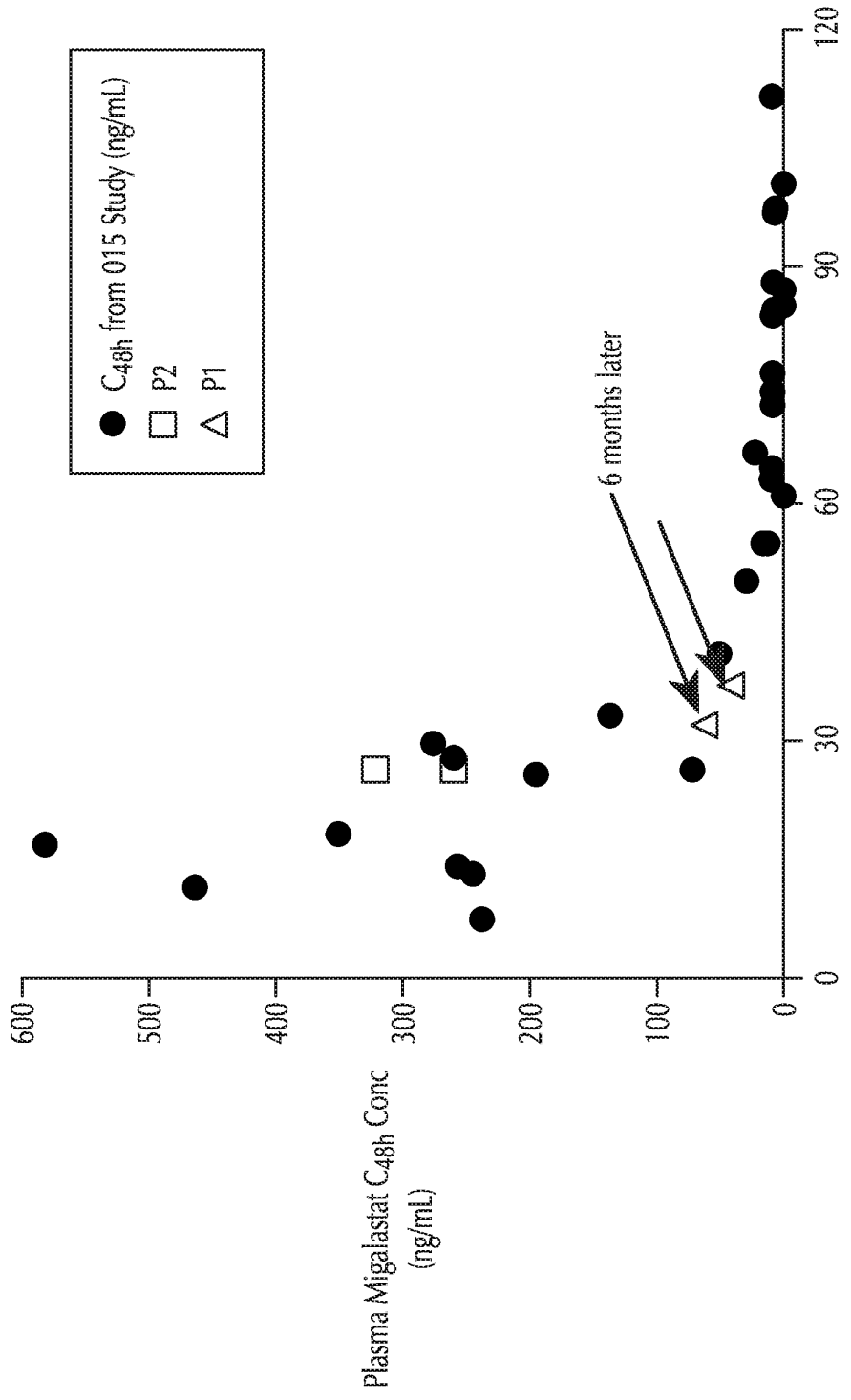

C_{48h} from 015 Study (ng/mL)
P2
P1
6 months later
Plasma Migalastat C_{48h} Conc (ng/mL)
$eGFR_{MDRD}$
0
100
200
300
400
500
600
0
30
60
90
120

FIG. 4

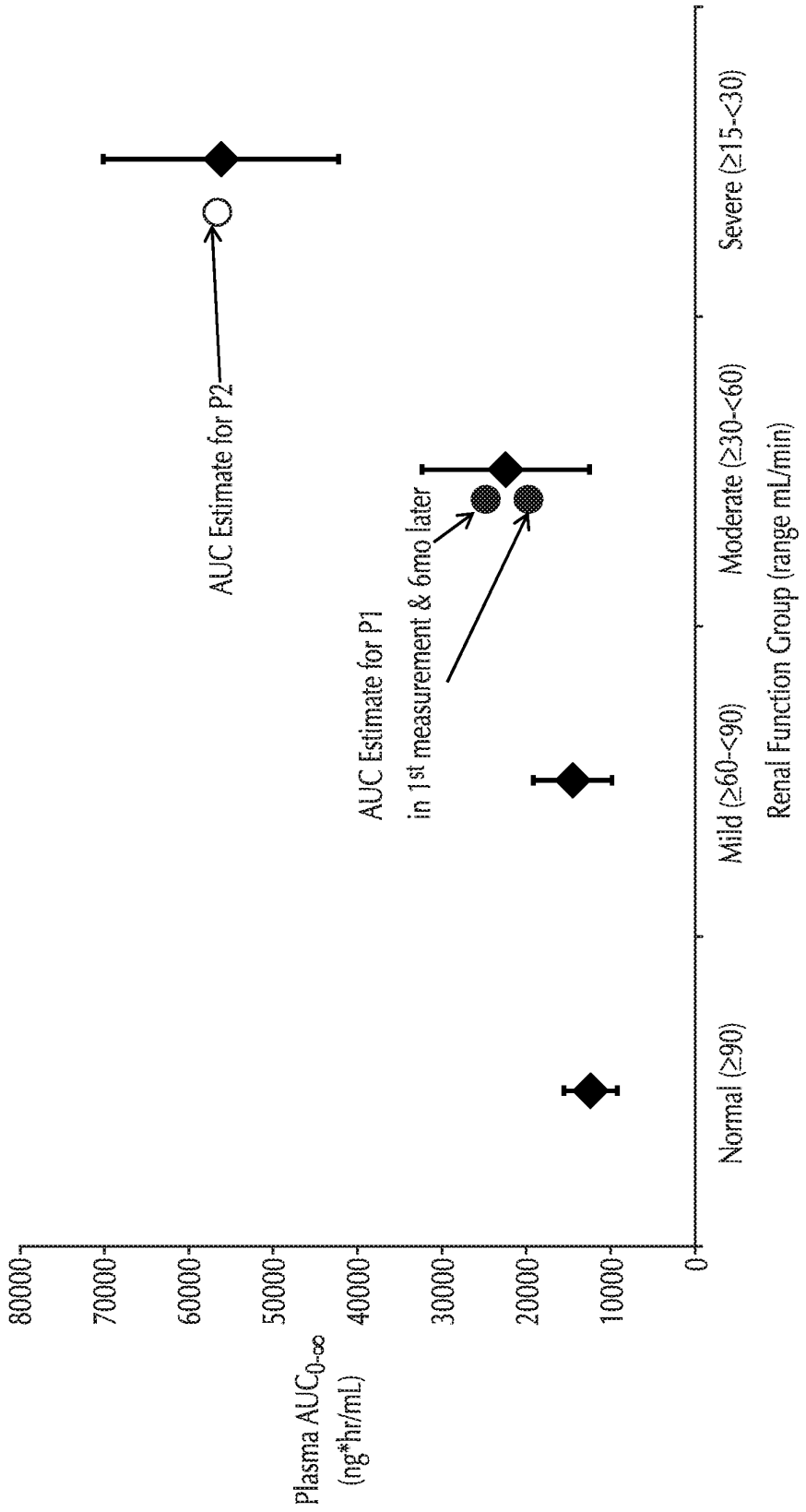

Plasma AUC0-∞ (ng*hr/mL)
80000
70000
60000
50000
40000
30000
20000
10000
0
AUC Estimate for P2
AUC Estimate for P1
in 1st measurement & 6mo later
Normal (≥90)
Mild (≥60-<90)
Moderate (≥30-<60)
Severe (≥15-<30)
Renal Function Group (range mL/min)

FIG. 5

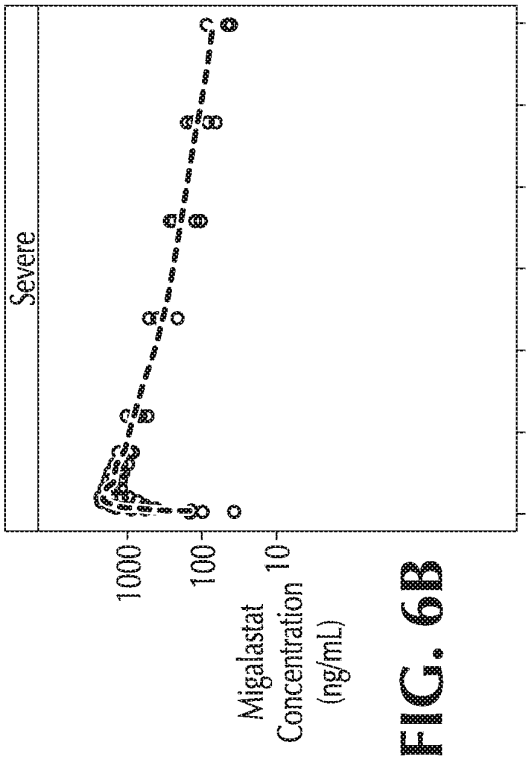


FIG. 6B

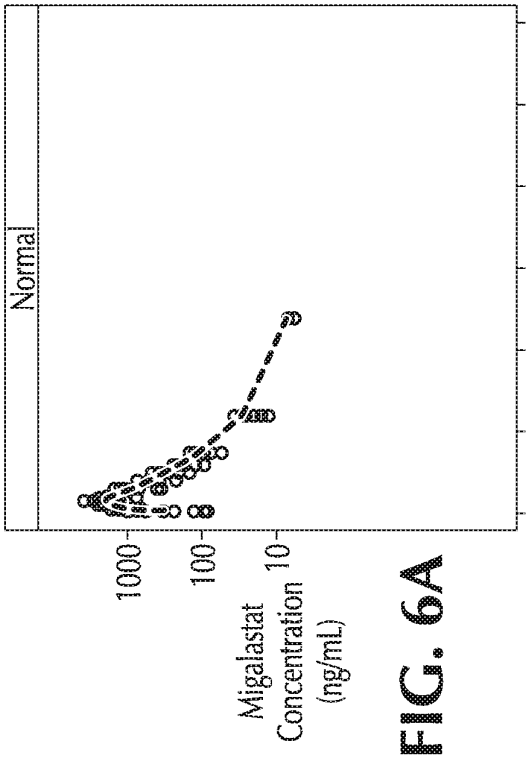


FIG. 6A

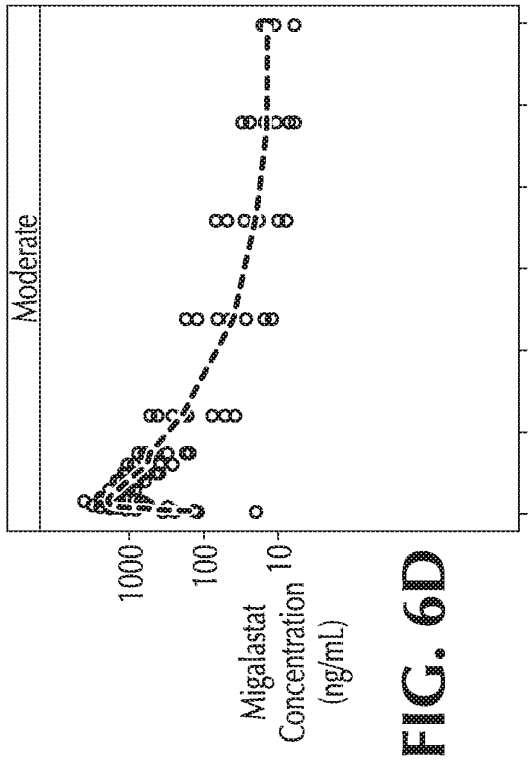


FIG. 6D

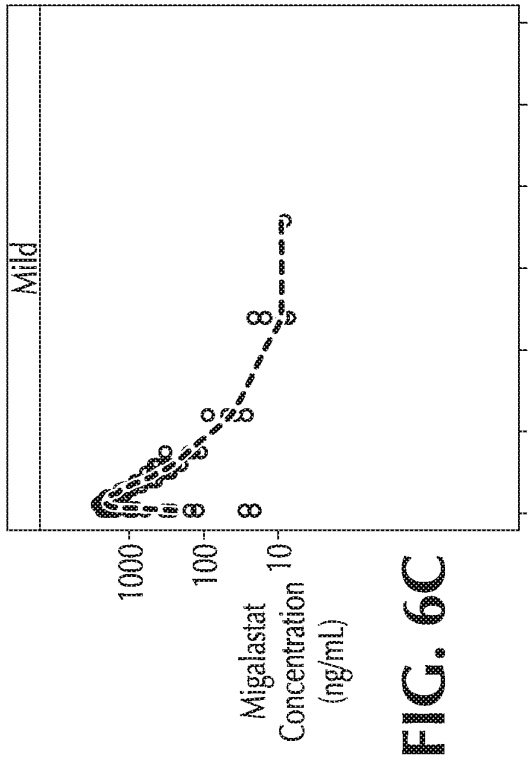


FIG. 6C

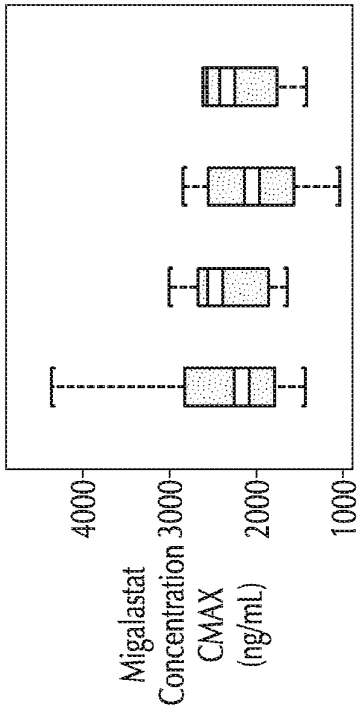


FIG. 7A

FIG. 7B

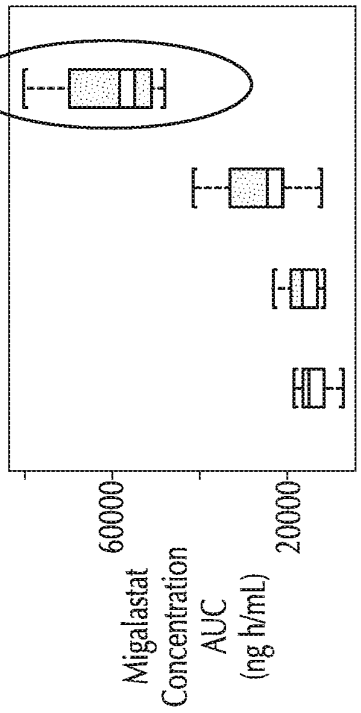


FIG. 7C

FIG. 7D

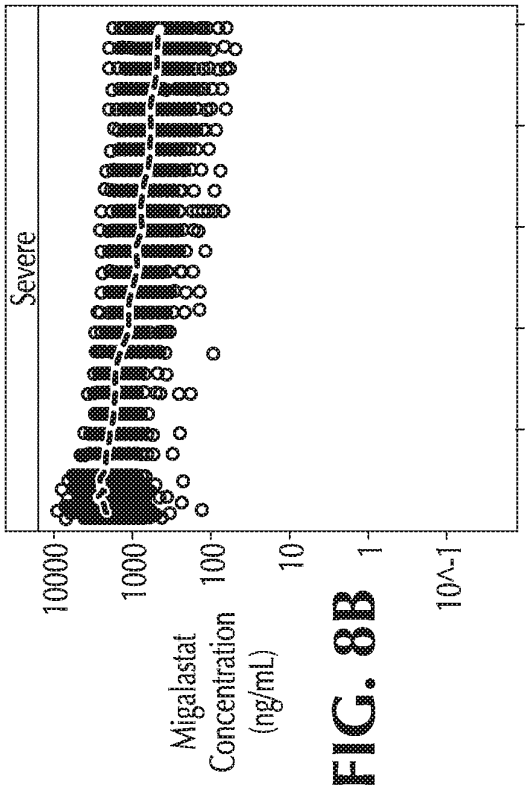


FIG. 8B

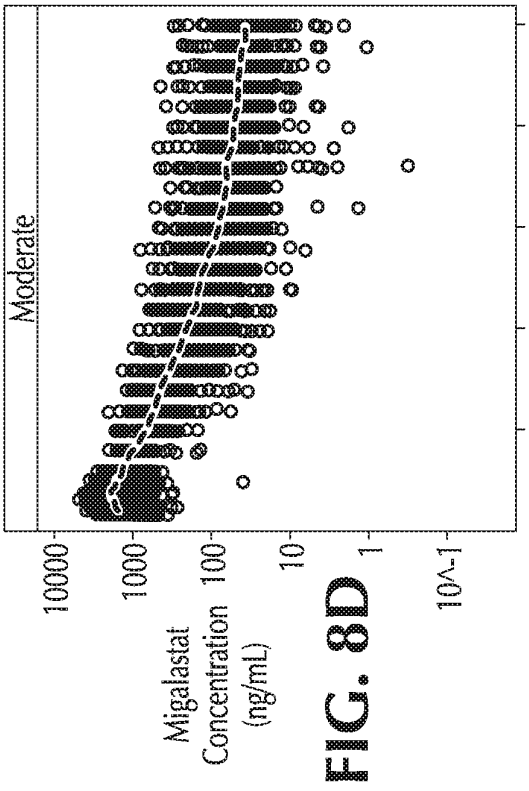


FIG. 8D

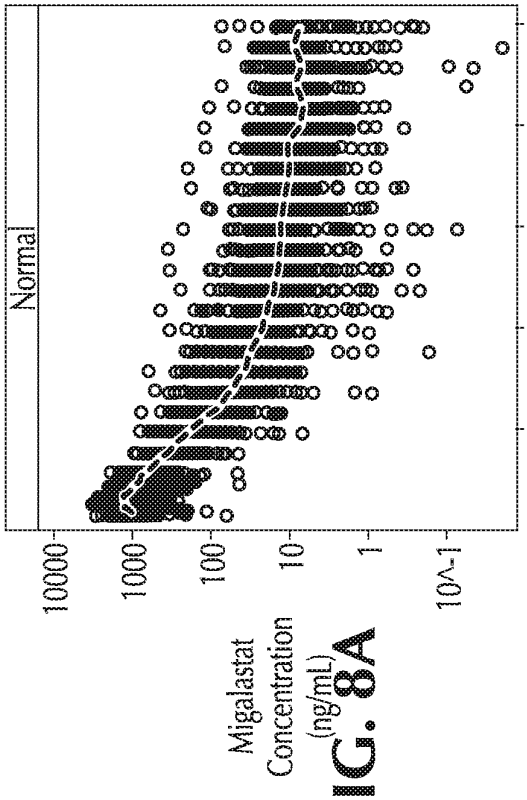


FIG. 8A

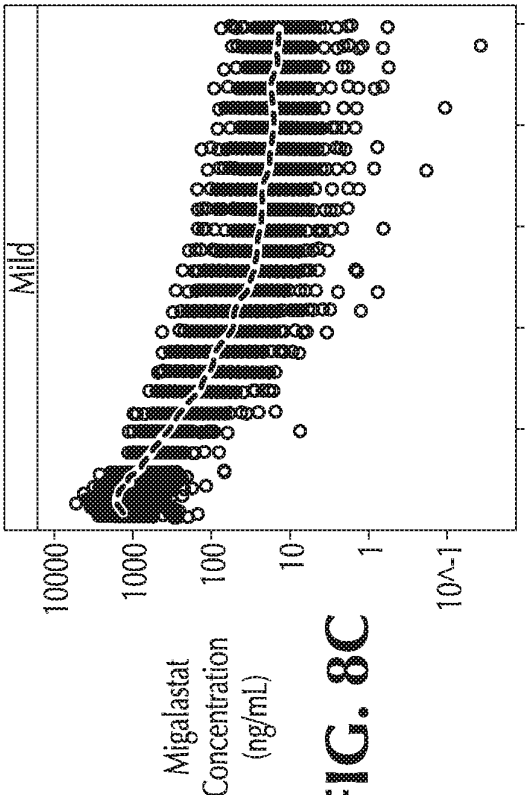


FIG. 8C

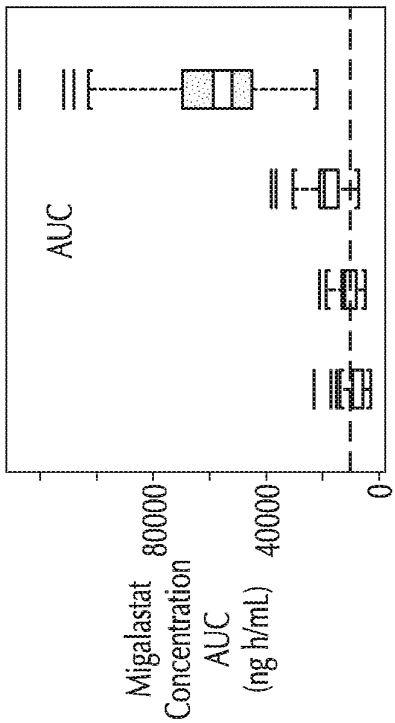


FIG. 9A

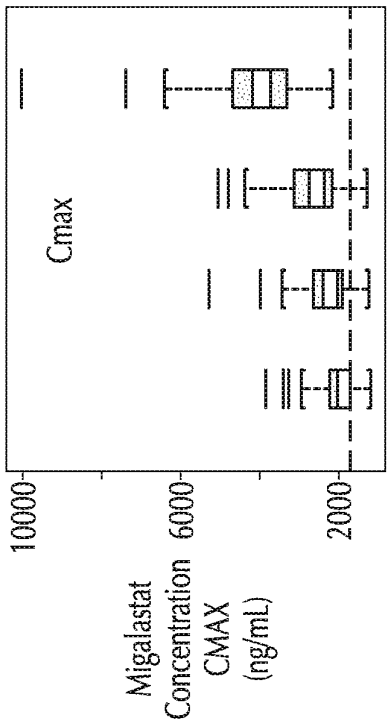


FIG. 9B

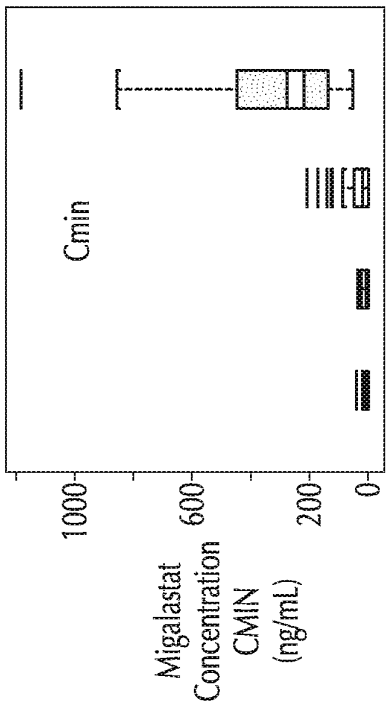


FIG. 9C

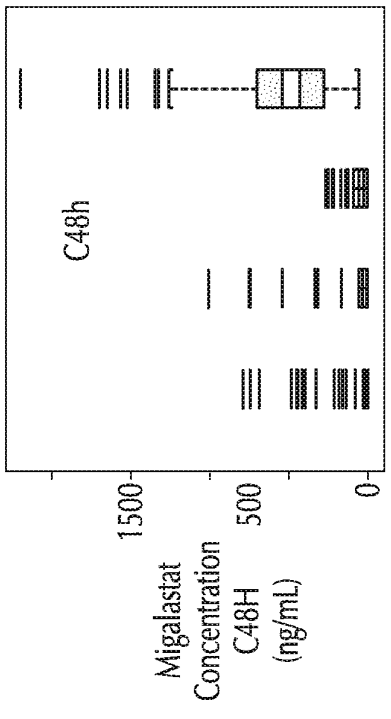
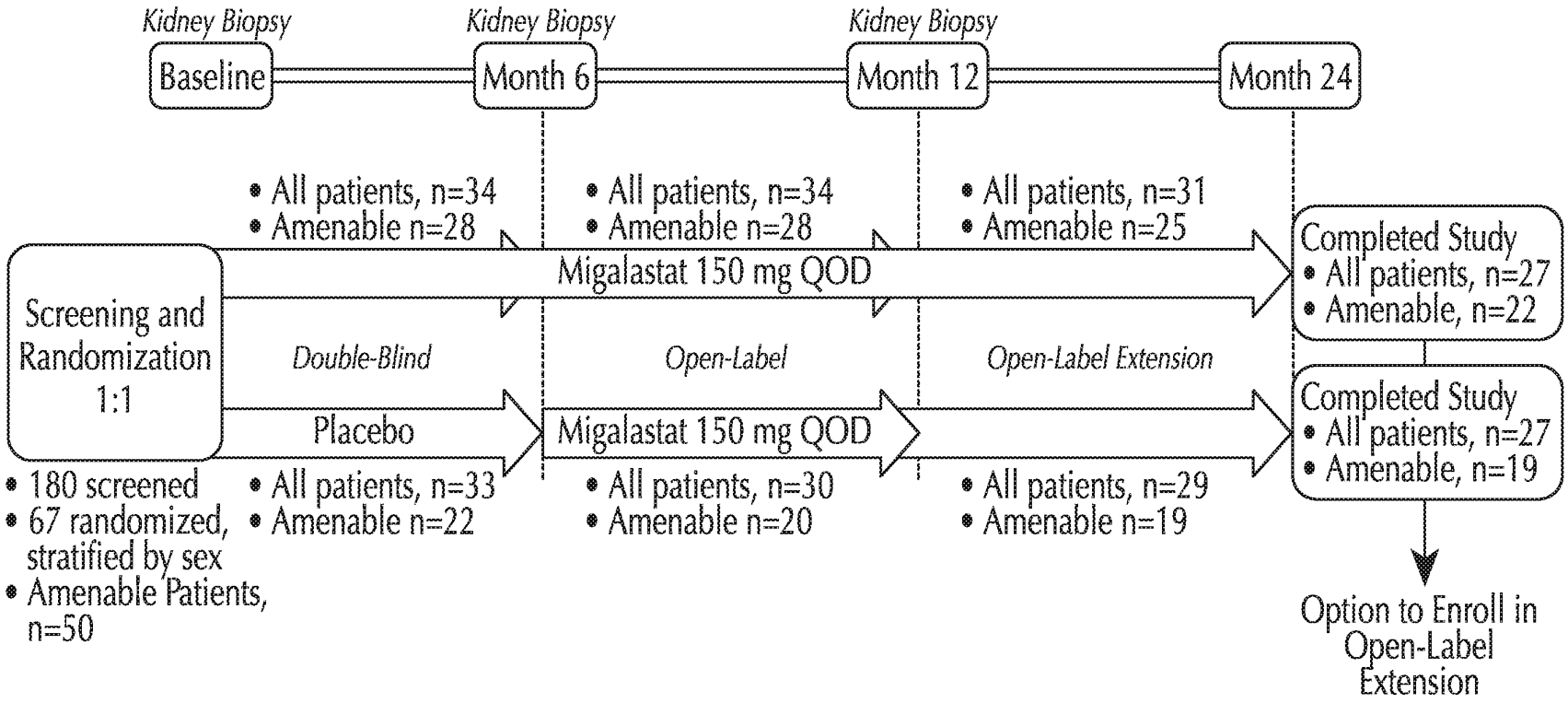


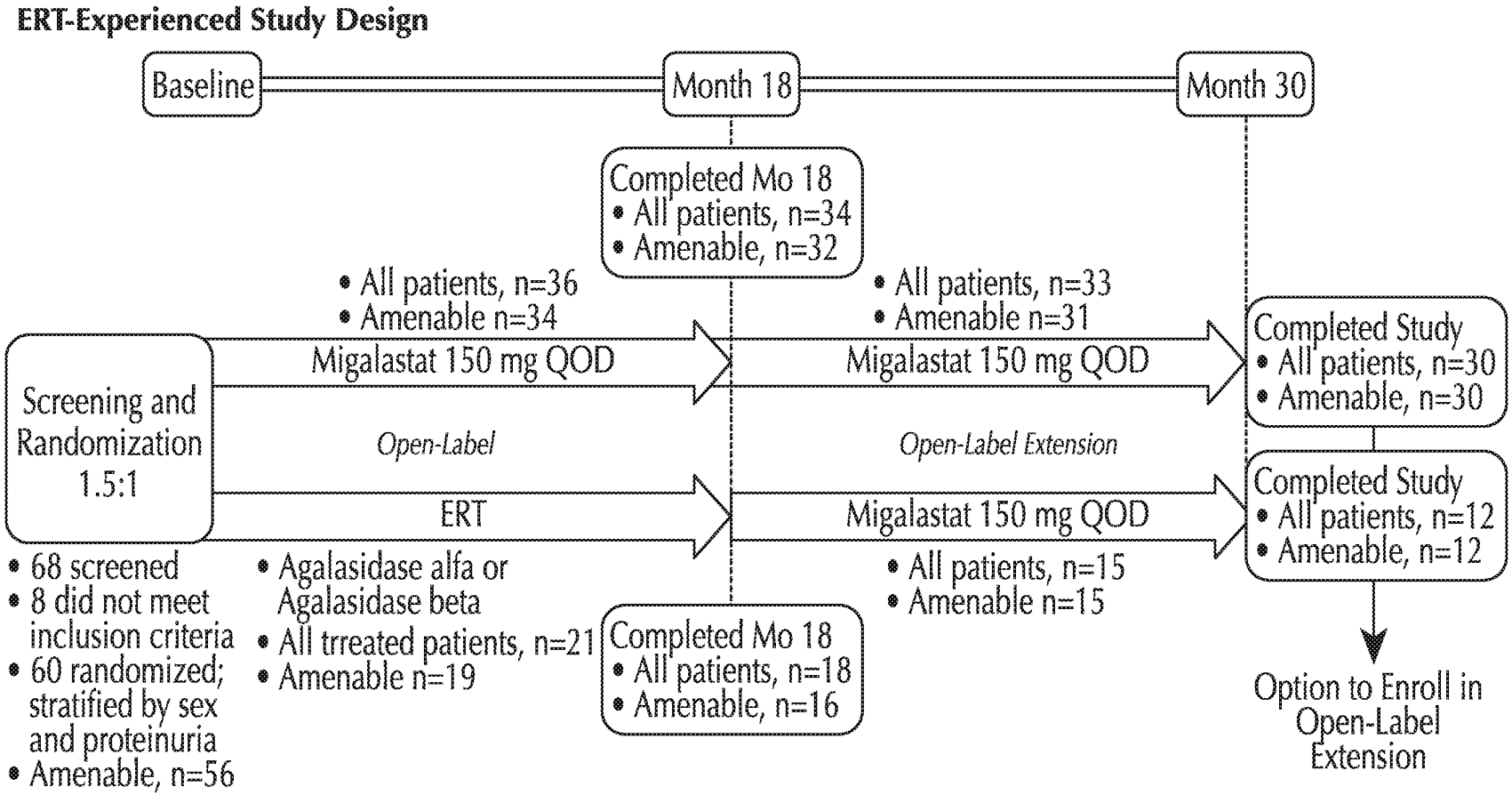
FIG. 9D

ERT-Naïve Study Design



Amenability was determined using the GLP-validated HEK assay, which became available during the phase 3 study, replacing a preliminary HEK assay used for enrolling patients.
Germain DP et al. *N Engl J Med.* 2016;375(6):545-555.

FIG. 10A



Amenability was determined using the GLP-validated HEK assay, which became available during the study, replacing a preliminary HEK assay used for enrolling patients.
Hughes DA et al. *J Med Genet.* 2017;54;288-296.

FIG. 10B

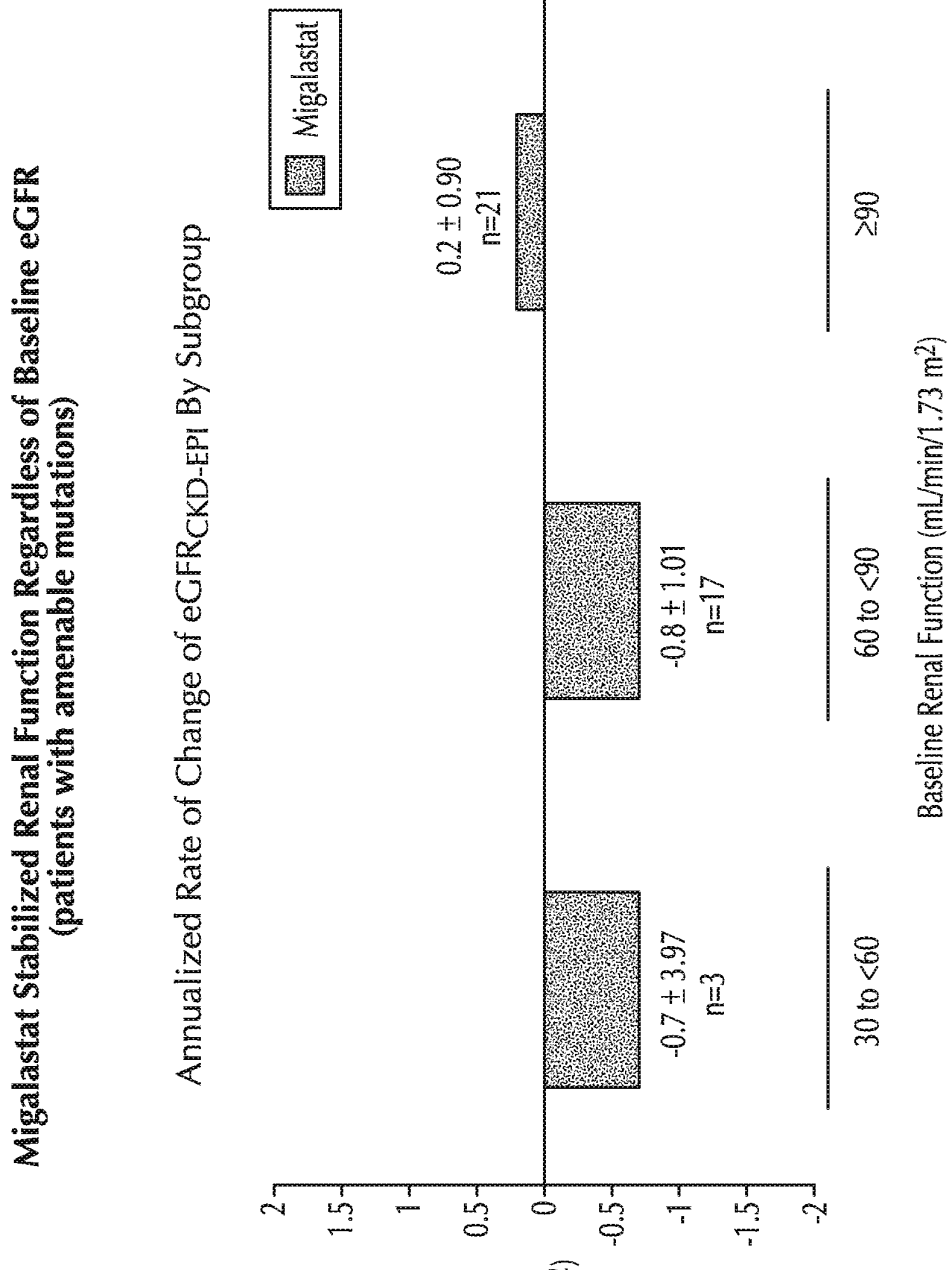
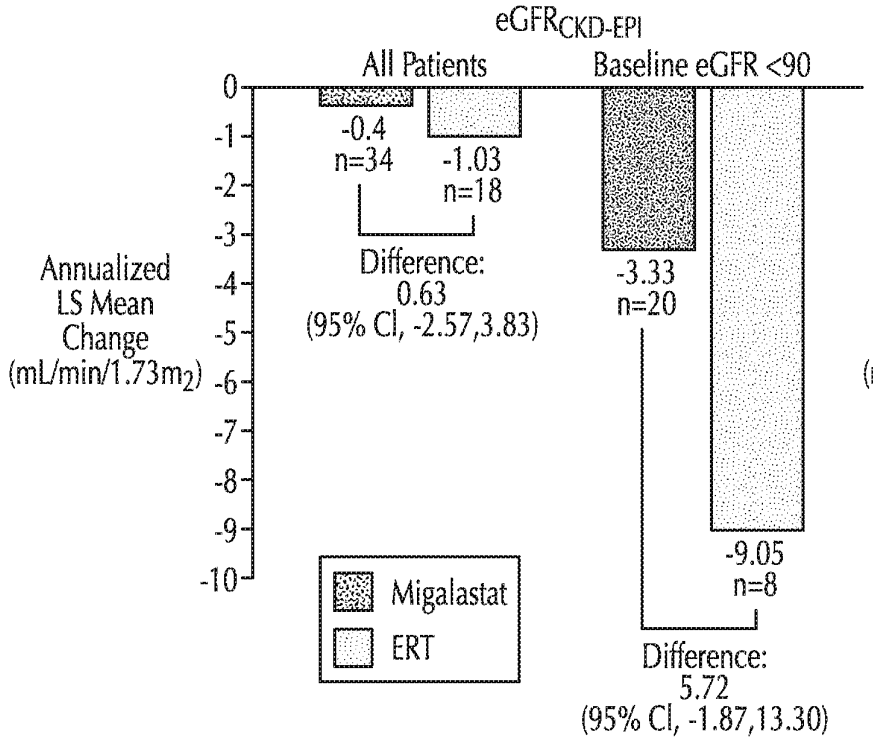

Migalastat Stabilized Renal Function Regardless of Baseline eGFR
(patients with amenable mutations)
Annualized Rate of Change of eGFRCKD-EPI By Subgroup
Migalastat
Annualized Rate of Change (mL/min/1.73 m2) Mean ± SEM
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-0.7 ± 3.97
n=3
-0.8 ± 1.01
n=17
0.2 ± 0.90
n=21
30 to <60
60 to <90
≥90
Baseline Renal Function (mL/min/1.73 m2)

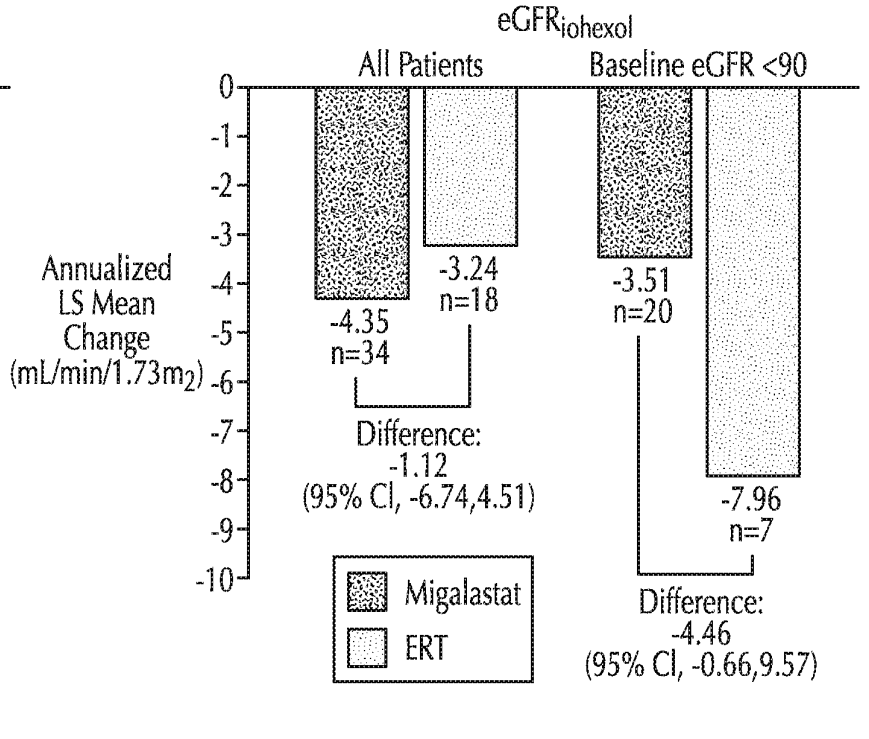
FIG. 11

At Month 18, Migalastat and ERT Had Comparable Favorable Effects on Renal Function using both GFR Methods (patients with amenable mutations)



LS mean and 95% CI based on ANCOVA that includes treatment, baseline GFR, sex, age,and 24-hour urine protein.
LS = least-squares.

FIG. 12A



LS mean and 95% CI based on ANCOVA that includes treatment, baseline GFR, sex, age,and 24-hour urine protein.
LS = least-squares.

FIG. 12B

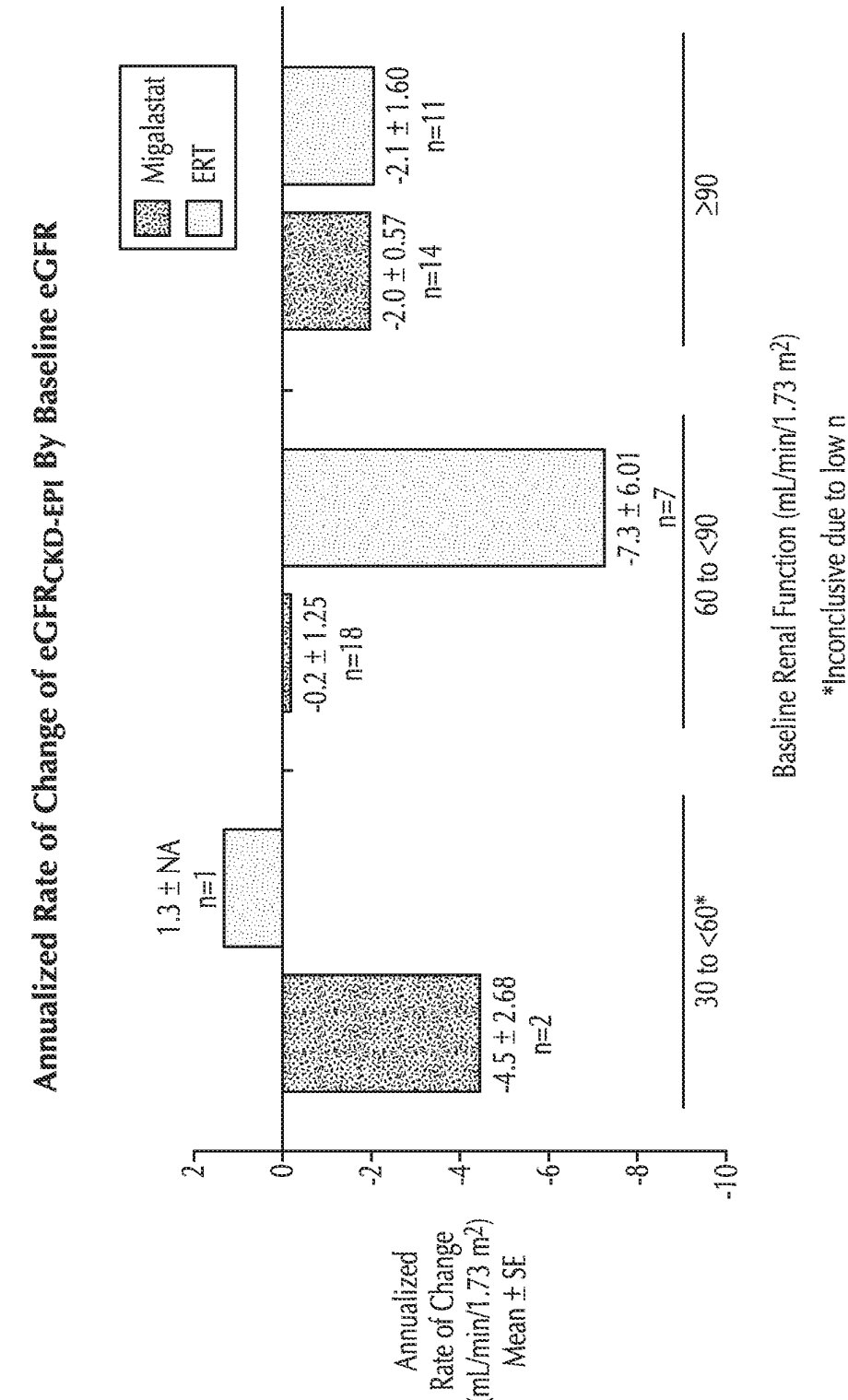

Annualized Rate of Change of eGFRCKD-EPI By Baseline eGFR
Migalastat
ERT
1.3 ± NA
n=1
-0.2 ± 1.25
n=18
-4.5 ± 2.68
n=2
-7.3 ± 6.01
n=7
-2.0 ± 0.57
n=14
-2.1 ± 1.60
n=11
Annualized Rate of Change (mL/min/1.73 m2) Mean ± SE
2
0
-2
-4
-6
-8
-10
30 to <60*
60 to <90
≥90
Baseline Renal Function (mL/min/1.73 m2)
*Inconclusive due to low n

FIG. 13

```
ccctctgtaggggcagagaggttctacttcattactgcgtctcctgggaaggccatcag      60
gactgctggctaaagtgggaaccaggactctttgtgagttaagaatttgtgtatttatat     120
gtgtgttatacacatttttaaaaaactgtaacgacatcaggttgagcagtcgtctccgg      180
gtggtgaattatgtgtatttttaaatttttatactatattgttatttttcaaatgttcgaa     240
attgaatatgtagattgttgttatcagcagaaaaataaacattattcaaatactctattc     300
agtaaagtaatttattgggcgcctttgtcaagcacgcatttgcctagatgtgactctaca     360
gataaaattcacttggggcctcccttacagacaatcaggcagtggagactgagtgcctg      420
aatggatagaccagcactcagaccactattttcagtatctgtttttcttaactcagggcc     480
gtggttttcaaacgtttttcgccttacggtcacccttagggtcccccgagaccggcccag     540
acagacagatatacaaaaacacatacacagtcatgagcgtccaccatttccccaccaggc     600
gcagcacaggcggcttcccggcactgagatgggggggaggagggagagagcgcgagggggg   660
gaggggaaagcagagaacgaaagaggcggaggcggcccccgaaccccgctctggtcttca     720
tcatcaccacccctgggtccccagttcccacccacacaccaacctctaacgataccgggt     780
aattttcctccttcttccctcaaacggctatagcgagacggtagacgacgaccagaacta     840
cttctgctcacgtaagcgagtaatcacgtgagcgcctacgtcatgtgagatctcggtcac     900
gtgagcaactctcggcttaaactcgggatcactaaggtgccgcacttccttctggtatgg     960
aaatagggcgggtcaatatcaagaaaggaagagggtgattggttagcggaacgtcttacg    1020
tgactgattattggtctacctctggggataaccgtcccagttgccagagaaacaataacg    1080
tcattatttaataagtcatcggtgattggtccgcccctgaggttaatcttaaaagcccag    1140
gttacccgcggaaatttatgctgtccggtcaccgtgacaatgcagctgaggaacccagaa    1200
ctacatctgggctgcgcgcttgcgcttcgcttcctggccctcgtttcctgggacatccct    1260
ggggctagagcactggacaatggattggcaaggacgcctaccatgggctggctgcactgg    1320
gagcgcttcatgtgcaaccttgactgccaggaagagccagattcctgcatcaggtatcag    1380
atattgggtactcccttccctttgcttttccatgtgtttgggtgtgtttggggaactgga    1440
gagtctcaacgggaacagttgagcccgagggagagctcccccacccgactctgctgctgc    1500
ttttttatccccagcaaactgtcccgaatcaggactagccctaaactttctctgtgtgac    1560
ctttcctgggatgggagtccggccagcggcccctgtttctttctctctctctctctctct    1620
cgttctccttctctttctctttctcttctttcctctctctttctctctctccctgcccgg    1680
ttctctttttttcactgctccttgcagagcagggccaccccataggcagtgtgcccaaagt    1740
agccctgcccggttctattcagacccttcttgtgaacttctgctcttcctctgccgggtg    1800
ctaaccgttagaacatctagggtgggtaggaggaatggggaactaagattcgtgccattt    1860
tttctcctttttggggtcgtggatttctcggcagtatctcgagggagttagagagaccata    1920
aggtcgctgagatctctcccacctcgcccatgagcgtggcatcaggctggaaggttgaca    1980
tggaggaactttatacatttacacctttgcgtgagggttgaggctggattagataggtat    2040
tgaacatatctgaccctcacaatccttatctgtaaattgggattacaacctttaatttc     2100
agggagctgacaaaaaaaatctgaaaaatagttcttatctcacacaggtgagttttcaag    2160
gagataacctatttaaagtacatagcacagcgcttgaccattcaactgcgcttacagagc    2220
aaatgttcaatgggaaaatgaatgtaaatctacaaatctgaatgaatatgtgtatttttc    2280
tggagagaggatatttacctttcttcaaattctcaaagggctctgtgatttaaaaaaggt    2340
taggaatcactgatagatgttggtaaaaggtggcagtcacagtacatttctgtgtccata    2400
agttattcctatgaatatctttatagataaagtcaggatgttggtcagacatcacagaag    2460
aaattggccttgtaagtttcatgtgaccctgtggtacagtatgtgtggcaattttgccca    2520
tcacggatttttttttattggtatttgcatctgattataaaactaatgcatgatcattgc    2580
aaaaaatgtagataaagaagagcaaaatgaaaataaagatttccccccaccgttccacca    2640
cccagaaataatcatggtttaaatgttaatatacaaccttacaattgttttctatataaa    2700
tgaaaacatagatttctttatttcattatttccataaaaaatggatcatgtttatgtca     2760
tgtttggctaatggcaagaccctggcacccagtctgggctcaaattctgcctcattgtta    2820
cttagccctgtgacattgggtaaattacacttttttttttttttttttgagacgggg       2880
```

FIG. 14A

```
tctcgctctgtcgcccaggctggagtgcagtggcacgatctcggctcactgcaagtccgc      2940
ctcctgggttcacgccattcttctgcctcagcctcccgagtagctgggactacaggcgcc      3000
tgccaccacgcctggctctttttttttttttttttttttttagtacagacggggtttcac      3060
catgttagccagggtggtctcaatctcctgacctcgtgattcgcccgcctcagcctccca      3120
aagtgctggtgtgagccaccgtgcccagccttacttttttttttgagaggggtctcact      3180
ctgtcacccaggttggagtgcagtggcgcgatctctgctcagtgcaaactccacctcccg      3240
ggtttaagcagttctcctgtcgtagtctcctgagtagctgggattacaggcacaccacca      3300
cggccagctaatttttgtattttcagtagagacgggtttcaccatgttgcccaagctggt      3360
ctcgaactcctggcctcaagtgatctgcccgccttggcctcccagagtgctgggattaca      3420
ggtgtgagccaccgcacccggcctctttttttctttttagtctatcataccttgcaaata      3480
cagtggttcttcctatgtgttggttttgatatttatgtaatcaaacacatcagtttttcc      3540
tttctgatttctgactttggggtcatgctgagaaagtcctttcctacctgaagataatac      3600
agtatatacgtttcttactagtatttttgtggatttttaaaatatttaaatctttagtcc      3660
atctgaacttgttcttctatcagaaatgccacatttaataaataataagtcccatggtat      3720
cagatggctggaaggacctctttcgaaactttgtttaattccattaatctgtgtattctt      3780
attctaatgctaatagttccacactagcttcctttatctttttttttctttttttttttt      3840
ttttgagctggagtttcgctcttgttgcccaggctggagtacaatgtcacgatctcggtt      3900
caccgcaacctccgcctcccaggttcaagcaattctcctgcctcatcctcgcgagtagct      3960
ggaattacaggcatgcgccaccacgcctagctatttttgtatttttagtagagatggggtt      4020
tctccatgttggtcaggctggtctcaaactcccagcctcaggtgatctgcctgcctcggc      4080
ctcccaaaatgctgttattacaggcgtgagccaccacgcccagccttcatcttttaatgga      4140
atgtacatgtatgtaatcttttaggtgaacttttttgtaatgttgtgccaagttccttaaa      4200
aagccctttttggaagctgggcaggtggccacgcctgtaatcccagcattttgggagtctg      4260
aggcaggtggatcacttgaggccaggagttcaagactagcctagccaaaatgcaaaaccc      4320
tgtctctactaaagatacaaaaattagccggatgcgatggcacatgcctgtaatctcagc      4380
tactcgggaggctgaggtagaagaatcgcttgaaccggggaggcagaggttgcagtgagc      4440
aagatggcgccactgcactccagcctgggtgacagagggagactccatctcaaaaaaaaa      4500
aaaaaaaaaaaagataaaaaggaaacctaagtactcttgggctttgttaaggattttgtt      4560
aaatatacaaaggattgcagggaaaattaacttatttttaatattgagtatgcttatcca      4620
agagcaaaataatatttctccatttattcaaatcatttaggagcatcatagttttaacat      4680
atgggccttgcacgtatcttaaatttatctctaggcattttaggttgttcagttgttctt      4740
gtgaatgggatctttttctccaaataggattattgttgatatctgttgattatgttaact      4800
ttgtagtttctgactttactgaactgtcttcttagatctaatactcttttcaatttcatc      4860
atatatttctcattcctattttgtttggggtttttagggcgggaatattaacgggataag      4920
agagacaaaagaaaatctggaaaaacaattcattttaccttacattgcttgtgattacta      4980
ccacactattactgggttggaaaaaattgtgaaatcccaaggtgcctaataaatgggagg      5040
tacctaagtgttcatttaatgaattgtaatgattattggaatttctctttcagtgagaag      5100
ctcttcatggagatggcagagctcatggtctcagaaggctggaaggatgcaggttatgag      5160
tacctctgcattgatgactgttggatggctccccaaagagattcagaaggcagacttcag      5220
gcagaccctcagcgctttcctcatgggattcgccagctagctaattatgtgagtttatag      5280
ataatgttcttgttcattcagaggactgtaagcacttctgtacagaagcttgtttagaaa      5340
cagccctcatggccgggcgtggtggctcacgctgtaatcccaacactttgggaggccgag      5400
gcgggtggatcacctgaggtcaagagttcaagaccagcctggccaacatggtgaaacccc      5460
aactctattaaaagtacaaaaaattagctgggcatggtggtgaacgcctgtaaccccagc      5520
tacttgggaggctgaggcaggagaatcgcttgaacccaggaggtggaagtttcagtgagc      5580
tgagatcacgccattgcactctagcctgggcaacaaaagagaaactccatctcaaaaaaa      5640
aaaacaaggaaaaaaagaaacagccctcatgacacttagaaagtagaatagctggctgtt      5700
atctgaacattgaattgtaaggcttatcaggtggactttgcattccatcagcagacaatt      5760
```

FIG. 14B

```
ttttttttttttttttttgagatggagtctcattctgtctcccaggctggagggcagtg      5820
gtgcgatctcggctcactgcaagctccacctcctgggttcatgccattctcctgcctcag      5880
cctcccaagtagctgggaccacaggcacccgccaccatgcccagttaatttttgtatttt      5940
ttagtagagacggggtttcaccatgttagccaagatggtctcgatctcctgacctcgtga      6000
tccgcccacctcggcctcccaaagtgctgggattacaggcatgagccaccgcgcctagcc      6060
tacaaatgttttgtaatagctcttgaggcccatcttggagttctccttttgctaaaacca      6120
ctgaactctctaggaggaaaaaggaacttggttcttgacatatgtgtgcatgtatttcca      6180
tataacctttaggaagctattgcaatggtactataaactagaattttagaagatagaagg      6240
aaaatattctggagatcattgaagagaaatggagtccaacactagttaaagatgatgaag      6300
acagatttttttttgacggagtctcgctctgtcgcccaggctggagtgcagtggcaca      6360
atctcagctcactgcaaccctccacctcttgggttcaagtgattctcctgcctcagcctc      6420
ccaagtagctgggactacaggcgcacaccaccacgcccggctaatttttgtatttttagt      6480
agagacaaggtttcaccatattcgccaggctggtctcgaactcctgaccttgtaatccgc      6540
ccaccttggcctcccaaagtgctgggattacaggcatgagccaccacgcccggccgatga      6600
agacagattttattcagtactaccacagtagaggaaagagccaagttcaattccaaatac      6660
aacaaagacaggtggagatttatagccaatgagcagattgaggggtcagtggatggaat      6720
atttaagaagacatcaagggtagggagcttcttgctaaagcttcatgtacttaaacaaga      6780
agggtgggggatgagggaaattgatcagatatcaatggtggcagtattgacttagcagga      6840
ttcttgctaagaggtcttgctaggacagacataggaagccaaggtggaggtctagtcgaa      6900
aagaaggctcatcagagaagtctaactaaagtttggtcaagaagagtctttgtcaaggta      6960
aatctatcatttccctcaaaaggtaattttcaggatcccatcaggaagattagcatggct      7020
gctagctttctcctcagttctgggctatagctcacatgcctagtttgaactagctcagca      7080
gaactgggggatttattctttgtcttccaacaaactcatctggatgattttgggggtttg      7140
tggggaaaagcccccaatacctggtgaagtaaccttgtctcttcccccagcctggaatgg      7200
ttctctctttctgctacctcacgattgtgcttctacaatggtgactcttttcctccctct      7260
catttcaggttcacagcaaaggactgaagctagggatttatgcagatgttggaaataaaa      7320
cctgcgcaggcttccctgggagttttggatactacgacattgatgcccagacctttgctg      7380
actggggagtagatctgctaaaatttgatggttgttactgtgacagtttggaaaatttgg      7440
cagatggtaatgtttcattccagagatttagccacaaaggaaagaactttgaggccatgg      7500
tagctgagccaaagaaccaatcttcagaattttaaatacccctgtcacaatactggaaata      7560
attattctccatgtgccagagctcccatctcttctctttcagttcattaattaattaatt      7620
aattcatgtaaaatccatgcatacctaaccatagctaatattgtgcacttataattcaag      7680
agggctctaagagttaattagtaattgtaactctctataacatcatttaggggagtccag      7740
gttgtcaatcggtcacagagaaagaagcatcttcattcctgcctttcctcaatatacaca      7800
ccatctctgcactacttcctcagaacaatcccagcagtctgggaggtactttacacaatt      7860
taagcacagagcaactgcctgtccctgctgctagtttaaacatgaaccttccaggtagcc      7920
tcttcttaaaatatacagccccagctgggcatgatggctcatgcctgtaatcctagcact      7980
ttgggaggctgaggcgggtggattacttgaggtcaggagttcgagaccaccctggccaac      8040
atggtgaaaccccatctctagtaaaaatacaaaaattagctgactttggtggcacatgcc      8100
tgtaatcccagctacttgggaagctgagacagaagagtcacttgaacctgggaaacagag      8160
gttgcagtgagccaagatcgcaccactgcactccaccctggatgacagactgaaccccat      8220
ctcaaaaaattaaaataaaataaaataaaataactatatatatagccccagctggaaatt      8280
catttctttcccttattttacccattgttttctcatacaggttataagcacatgtccttg      8340
gccctgaataggactggcagaagcattgtgtactcctgtgagtggcctctttatatgtgg      8400
ccctttcaaaaggtgagatagtgagcccagaatccaatagaactgtactgatagatagaa      8460
cttgacaacaaaggaaaccaaggtctccttcaaagtccaacgttacttactatcatccta      8520
ccatctctcccaggttccaaccacttctcaccatccccactgctgtaattatagcctaag      8580
ctaccatcacctggaaagtcatccttgtgtcttcccctttatttcaccattcatgtcctg      8640
```

FIG. 14C

tctatcaacagtccttccaccagtatctctaaaatatctcctgaatcagcccacttcctt 8700
ccatcttcactacatgcaccctggccttccaagctactatcggctctcaaccagactgct 8760
gggaccacctgatctctctgcttccactctgtctcaacccccatctattttccaagcagc 8820
actagagttatcatattaaaatgtaaatatcagtttttttttaaagaaaaaaaccctga 8880
gacttaacagagttataaaaaatataaatgtcatcatcagttccctgcttaaaaccctta 8940
actcgcttccaattgcacttggaatgaaaccaaactgcactgatccagcccttgcctgcc 9000
tccccaaagtccaaggggtcatggctctttccctggctacactggttttctttctgtccc 9060
tcaacactgcaagcctattgctgccccagggcctttacacttgcttttttttctgcctaga 9120
acagttcttccccaaagatttttaaagggccgggctccttaacattgaagtcgcagacca 9180
aacgccacatatgcagacagttcttctctaactactttaaaatagccctctgtccattca 9240
ttcttcatcacattaacctgtttaatttttcttctcagagctccacactatttggaagtat 9300
ttgttgacttgttaccatgtctccccactagagtgtaagtttcatgagggcagggacctt 9360
gtctgactttgactgtatctctcgcatatggttaagtgttaaatagttatttatggaatg 9420
aatccctattattccctcattatctctgcaaaatagtctttttttctcaacatcttaaacc 9480
tgatatcccacctgcctatctacaaacttttttttttgcgacagagtctcactgtcaccca 9540
ggctagagtgcagtggcgccatctcggctcactgcaacctccgcctcccgggtttaagcg 9600
attctcttgcctcagcctcccagtagctgggattataggcgtgcgctaccacatctggct 9660
aatttttgtatttttagtagagatggtttcaccatgttggccaggcttgtctcgaactcc 9720
tgacctcagatgatccacctgcctcggcctcccaaagtgctgggattacaggcatgagcc 9780
accgtgcccagcctctacaaacttttttattccattaacaaactatatgctgggatttaag 9840
ttttcttaatacttgatggagtcctatgtaatttttcgagcttttaattttactaagacca 9900
ttttagttctgattatagaagtaaattaactttaagggatttcaagttatatggcctact 9960
tctgaagcaaacttcttacagtgaaaattcattataagggtttagacctccttatggaga 10020
cgttcaatctgtaaactcaagagaaggctacaagtgcctcctttaaactgttttcatctc 10080
acaaggatgttagtagaaagtaaacagaagagtcatatctgttttcacagcccaattata 10140
cagaaatccgacagtactgcaatcactggcgaaattttgctgacattgatgattcctgga 10200
aaagtataaagagtatcttggactggacatcttttaaccaggagagaattgttgatgttg 10260
ctggaccaggggggttggaatgacccagatatggtaaaaacttgagccctccttgttcaag 10320
accctgcggtaggcttgtttcctattttgacattcaaggtaaatacaggtaaagttcctg 10380
ggaggaggctttatgtgagagtacttagagcaggatgctgtggaaagtggtttctccata 10440
tgggtcatctaggtaactttaagaatgtttcctcctctcttgtttgaattatttcattct 10500
ttttctcagttagtgattggcaactttggcctcagctggaatcagcaagtaactcagatg 10560
gccctctgggctatcatggctgctcctttattcatgtctaatgacctccgacacatcagc 10620
cctcaagccaaagctctccttcaggataaggacgtaattgccatcaatcaggacccctg 10680
ggcaagcaagggtaccagcttagacaggtaaataagagtatatattttaagatggcttta 10740
tatacccaataccaactttgtcttgggcctaaatctatttttttcccttgctcttgatgt 10800
tactatcagtaataaagcttcttgctagaaacattactttatttccaaaataatgctaca 10860
ggatcattttaatttttcctacaagtgcttgatagttctgacattaagaatgaatgccaa 10920
actaacagggccacttatcactagttgctaagcaaccacactttcttggtttttcaggga 10980
gacaactttgaagtgtgggaacgacctctctcaggcttagcctgggctgtagctatgata 11040
aaccggcaggagattggtggacctcgctcttataccatcgcagttgcttccctgggtaaa 11100
ggagtggcctgtaatcctgcctgcttcatcacacagctcctccctgtgaaaaggaagcta 11160
gggttctatgaatggacttcaaggttaagaagtcacataaatcccacaggcactgttttg 11220
cttcagctagaaaatacaatgcagatgtcattaaaagacttactttaaaatgtttatttt 11280
attgccaactactacttcctgtccacctttttctccattcactttaaaagctcaaggcta 11340
ggtggctcatgcctgtaatcccagcactttgggaggctgaggcgggcagatcacctgagg 11400
tcgggactttgagacccgcctggacaacatggtgaaaccccatttctaataaaaatataa 11460
aaattagccaggtgtggtggcgcacctgtggtcccagctactctgggggctgaggcatga 11520

FIG. 14D

gaatcgcttgaacccgggagtggaggttgcattgagctgagatcatgccacctcactcca 11580
gcctgggcaacaaagattccatctcaaaaaaaaaaaaaaagccaggcacagtggctcatg 11640
cctggaatcccagcacttttggaagctgaggcaggcagatcacttgaggttaggatttca 11700
agaccagcctggctaacatagtaaagccctgtctctactaaaaatacaaaaattagccag 11760
gtatggtggcgagcttctgtagccccagctactcaggagactgaggcaggagaatcactt 11820
gaacccgggaagtgggggggtgcagtgacccaagatcacgccactgcattccagcctggg 11880
caacagagcaagactccatctcaaaaaaaaaagttctatttccttgaataaaatttttccg 11940
aagtttaaactttaggaataaaactattaaacccgtatttactcatccagatacccaccc 12000
cccttgttgagattctctcccaattatcaaaatgtgtagcatatttaactaccaagagct 12060
aaacatcattaagactgaaatgtattaagaaggatgtataggccaggcacggtgtctcac 12120
gcctgtaatcccaacactttgggaggccaagtcgggcggatcacgaggtcaggagatgga 12180
gaccatcctggccaacatggtgaaaccccctctctactaaaaatacaaaaattagccagg 12240
caggtggcaggcacctgtaatcccagctactccagaggctgaggcaggacaatcacttga 12300
acctgggaggcagaggctgcagtgagctgaggttgtaccaattgcactccagcctaggta 12360
acgagcaacactccatctcaaaaaaagaaaaaaaaaaagatgtataatttggaactgtta 12420
agaggcattttaaaga 12436

FIG. 14E

```
MQLRNPELHL GCALALRFLA LVSWDIPGAR ALDNGLARTP TMGWLHWERF MCNLDCQEEP   60
DSCISEKLFM EMAELMVSEG WKDAGYEYLC IDDCWMAPQR DSEGRLQADP QRFPHGIRQL  120
ANYVHSKGLK LGIYADVGNK TCAGFPGSFG YYDIDAQTFA DWGVDLLKFD GCYCDSLENL  180
ADGYKHMSLA LNRTGRSIVY SCEWPLYMWP FQKPNYTEIR QYCNHWRNFA DIDDSWKSIK  240
SILDWTSFNQ ERIVDVAGPG GWNDPDMLVI GNFGLSWNQQ VTQMALWAIM AAPLFMSNDL  300
RHISPQAKAL LQDKDVIAIN QDPLGKQGYQ LRQGDNFEVW ERPLSGLAWA VAMINRQEIG  360
GPRSYTIAVA SLGKGVACNP ACFITQLLPV KRKLGFYEWT SRLRSHINPT GTVLLQLENT  420
MQMSLKDLL                                                          429
```

FIG. 15