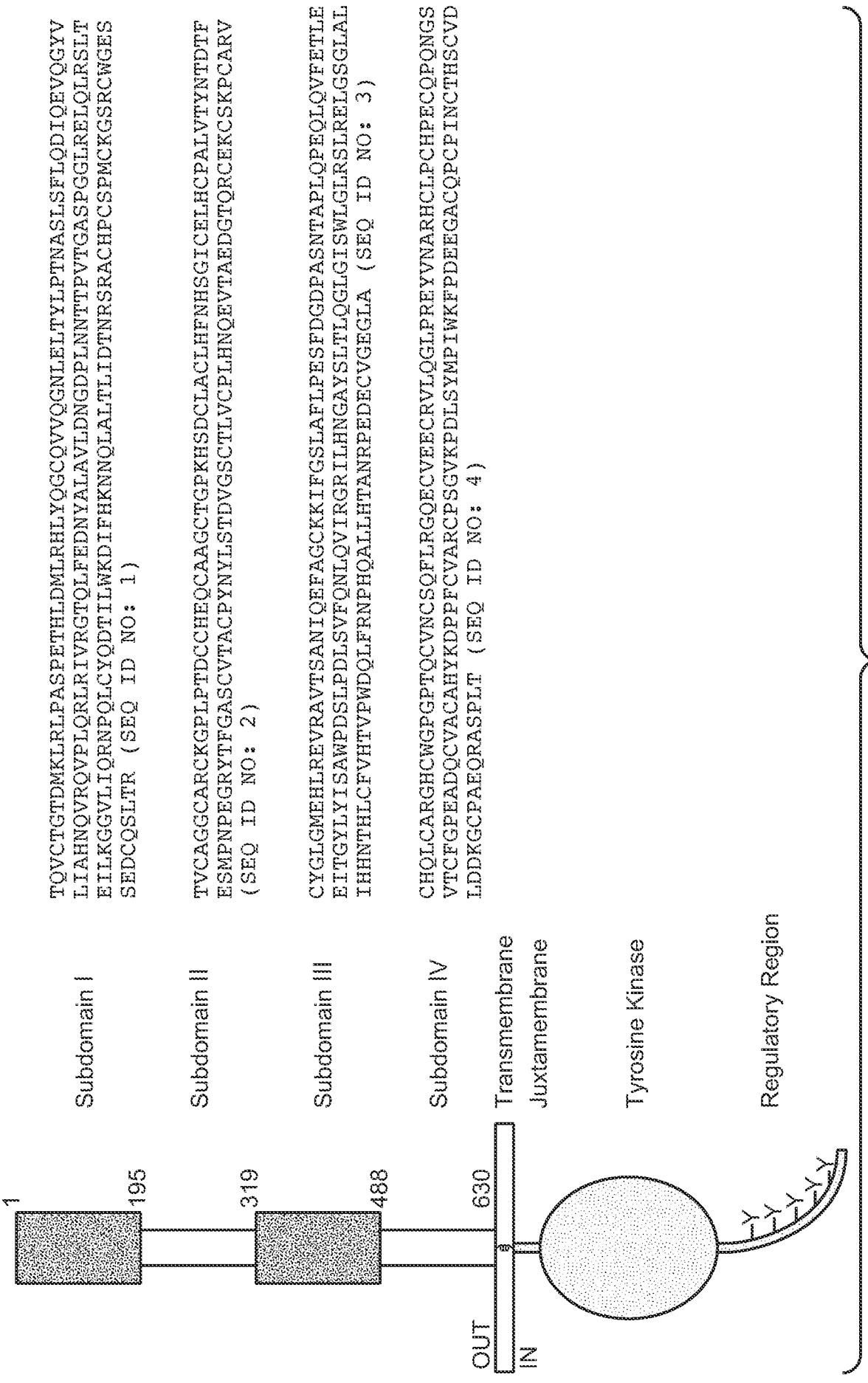

1
195
319
488
630
OUT
IN
Subdomain I
Subdomain II
Subdomain III
Subdomain IV
Transmembrane
Juxtamembrane
Tyrosine Kinase
Regulatory Region
Y
Y
Y
Y
Y
TQVCTGTDMKLRLPASPETHLDMLRHLYQGCQVVQGNLELTYLPTNASLSFLQDIQEVQGYV
LIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLRSLT
EILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDTNRSRACHPCSPMCKGSRCWGES
SEDCQSLTR (SEQ ID NO: 1)
TVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGICELHCPALVTYNTDTF
ESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVCPLHNQEVTAEDGTQRCEKCSKPCARV
(SEQ ID NO: 2)
CYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQLQVFETLE
EITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRSLRELGSGLAL
IHHNTHLCFVHTVPWDQLFRNPHQALLHTANRPEDECVGEGLA (SEQ ID NO: 3)
CHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYVNARHCLPCHPECQPQNGS
VTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWKFPDEEGACQPCPINCTHSCVD
LDDKGCPAEQRASPLT (SEQ ID NO: 4)

FIG. 1

Variable Light

```
                10        20          30          40
2C4     DTVMTQSHKIMSTSVGDRVSITC [KASQDVSIGVA] WYQQRP
         **    **** *      *                    *
574     DIQMTQSPSSLSASVGDRVTITC [KASQDVSIGVA] WYQQKP
                                  *   ** ***
hum κI  DIQMTQSPSSLSASVGDRVTITC [RASQSISNYLA] WYQQKP

                50          60         0         80
2C4     GQSPKLLIY [SASYRYT] GVPDRFTGSGSGTDFTFTISSVQA
          **                * *          *    * *
574     GKAPKLLIY [SASYRYT] GVPSRFSGSGSGTDFTLTISSLQP
                   * *****
hum κI  GKAPKLLIY [AASSLES] GVPSRFSGSGSGTDFTLTISSLQP

                90         100
2C4     EDLAVYYC [QQYYIYPYT] FGGGTKLEIK (SEQ ID NO:5)
           * *                * *
574     EDFATYYC [QQYYIYPYT] FGQGTKVEIK (SEQ ID NO:7)
                    *** *
hum κI  EDFATYYC [QQYNSLPWT] FGQGTKVEIK (SEQ ID NO:9)
```

FIG. 2A

Variable Heavy

```
                10        20          30          40
2C4     EVQLQQSGPELVKPGTSVKISCKAS [GFTFTDYTMD] WVKQS
            **  **  *  * ***  *                  * *
574     EVQLVESGGGLVQPGGSLRLSCAAS [GFTFTDYTMD] WVRQA
                                      ** * *
hum III EVQLVESGGGLVQPGGSLRLSCAAS [GFTFSSYAMS] WVRQA

                50  a      60          70         80
2C4     HGKSLEWIG [DVNPNSGGSIYNQRFKG] KASLTVDRSSRIVYM
        *  *   **                     *** *    **** *
574     PGKGLEWVA [DVNPNSGGSIYNQRFKG] RFTLSVDRSKNTLYL
                   ****** *** ****       * * *
hum III PGKGLEWVA [VISGDGGSTYYADSVKG] RFTISRDNSKNTLYL

          abc      90         100ab         110
2C4     ELRSLTFEDTAVYYCAR [NLGPSFYFDY] WGQGTTLTVSS (SEQ ID NO:6)
        ***  **                              **
574     QMNSLRAEDTAVYYCAR [NLGPSFYFDY] WGQGTLVTVSS (SEQ ID NO:8)
                           ********
hum III QMNSLRAEDTAVYYCAR [GRVGYSLYDY] WGQGTLVTVSS (SEQ ID NO:10)
```

FIG. 2B

Amino Acid Sequence for Pertuzumab Light Chain

```
1       10        20        30        40        50        60
|       |         |         |         |         |         |
DIQMTQSPSSLSASVGDRVTITC**KASQDVSIGVA**WYQQKPGKAPKLLIYS**ASYRYT**GVPS

        70        80        90        100       110       120
        |         |         |         |         |         |
RFSGSGSGTDFTLTISSLQPEDFATYYC**QQYYIYPYT**FGQGTKVEIKRTVAAPSVFIFPP

        130       140       150       160       170       180
        |         |         |         |         |         |
SDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLT

        190       200       210
        |         |         |
LSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC (SEQ ID NO: 11)
```

FIG. 3A

Amino Acid Sequence for Pertuzumab Heavy Chain

```
1       10        20        30        40        50        60
|       |         |         |         |         |         |
EVQLVESGGGLVQPGGSLRLSCAAS**GFTFTDYTMD**WVRQAPGKGLEWVA**DVNPNSGGSIY**

        70        80        90        100       110       120
        |         |         |         |         |         |
**NQRFK**GRFTLSVDRSKNTLYLQMNSLRAEDTAVYYCARN**LGPSFYFDY**WGQGTLVTVSSA

        130       140       150       160       170       180
        |         |         |         |         |         |
STKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSG

        190       200       210       220       230       240
        |         |         |         |         |         |
LYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGGP

        250       260       270       280       290       300
        |         |         |         |         |         *|
SVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNS

        310       320       330       340       350       360
        |         |         |         |         |         |
TYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSREEM

        370       380       390       400       410       420
        |         |         |         |         |         |
TKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQ

        430       440       448
        |         |         |
QGNVFSCSVMHEALHNHYTQKSLSLSPG  (SEQ ID NO: 12)
```

FIG. 3B

Trastuzmab Light Chain

```
1                                                  45
D I Q M T Q S P S S L S A S V G D R V T I T C R A S Q D V N T A V A W Y Q Q K P G K A P K
46                                                 90
L L I Y S A S F L Y S G V P S R F S G S R S G T D F T L T I S S L Q P E D F A T Y Y C Q Q
91                                                135
H Y T T P P T F G Q G T K V E I K R T V A A P S V F I F P P S D E Q L K S G T A S V V C L
136                                               180
L N N F Y P R E A K V Q W K V D N A L Q S G N S Q E S V T E Q D S K D S T Y S L S S T L T
181                                               214
L S K A D Y E K H K V Y A C E V T H Q G L S S P V T K S F N R G E C   (SEQ ID NO: 13)
```

FIG. 4A

Trastuzmab Heavy Chain

```
1                                 15                                30                                45
E V Q L V E S G G G L V Q P G G S L R L S C A A S G F N I K D T Y I H W V R Q A P G K G L

46                                60                                75                                90
E W V A R I Y P T N G Y T R Y A D S V K G R F T I S A D T S K N T A Y L Q M N S L R A E D

91                                105                               120                               135
T A V Y Y C S R W G G D G F Y A M D Y W G Q G T L V T V S S A S T K G P S V F P L A P S S

136                               150                               165                               180
K S T S G G T A A L G C L V K D Y F P E P V T V S W N S G A L T S G V H T F P A V L Q S S

181                               195                               210                               225
G L Y S L S S V V T V P S S S L G T Q T Y I C N V N H K P S N T K V D K K V E P K S C D K

226                               240                               255                               270
T H T C P P C P A P E L L G G P S V F L F P P K P K D T L M I S R T P E V T C V V V D V S

271                               285                               300                               315
H E D P E V K F N W Y V D G V E V H N A K T K P R E E Q Y N S T Y R V V S V L T V L H Q D

316                               330                               345                               360
W L N G K E Y K C K V S N K A L P A P I E K T I S K A K G Q P R E P Q V Y T L P P S R E E

361                               375                               390                               405
M T K N Q V S L T C L V K G F Y P S D I A V E W E S N G Q P E N N Y K T T P P V L D S D G

406                               420                               435                               449
S F F L Y S K L T V D K S R W Q Q G N V F S C S V M H E A L H N H Y T Q K S L S L S P G
```

(SEQ ID NO: 14)

FIG. 4B

Pertuzumab Variant Light Chain

```
1                                                                  15
V H S D I Q M T Q S P S S L S A S V G D R V T I T C K A S Q D V S I G V A W Y Q Q K P G K
                                                                   30                  45
46                                                                 60
A P K L L I Y S A S Y R Y T G V P S R F S G S G S G T D F T L T I S S L Q P E D F A T Y Y
                                                                   75                  90
91                                                                105
C Q Q Y Y I Y P Y T F G Q G T K V E I K R T V A A P S V F I F P P S D E Q L K S G T A S V
                                                                  120                 135
136                                                               150
V C L L N N F Y P R E A K V Q W K V D N A L Q S G N S Q E S V T E Q D S K D S T Y S L S S
                                                                  165                 180
181                                                               195
T L T L S K A D Y E K H K V Y A C E V T H Q G L S S P V T K S F N R G E C
                                                                  210                 217
```

(SEQ ID NO: 15)

FIG. 5A

Pertuzumab Variant Heavy Chain

```
1                                 15                                30                                45
E V Q L V E S G G G L V Q P G G S L R L S C A A S G F T F T D Y T M D W V R Q A P G K G L

46                                60                                75                                90
E W V A D V N P N S G G S I Y N Q R F K G R F T L S V D R S K N T L Y L Q M N S L R A E D

91                                105                               120                               135
T A V Y Y C A R N L G P S F Y F D Y W G Q G T L V T V S S A S T K G P S V F P L A P S S K

136                               150                               165                               180
S T S G G T A A L G C L V K D Y F P E P V T V S W N S G A L T S G V H T F P A V L Q S S G

181                               195                               210                               225
L Y S L S S V V T V P S S S L G T Q T Y I C N V N H K P S N T K V D K K V E P K S C D K T

226                               240                               255                               270
H T C P P C P A P E L L G G P S V F L F P P K P K D T L M I S R T P E V T C V V V D V S H

271                               285                               300                               315
E D P E V K F N W Y V D G V E V H N A K T K P R E E Q Y N S T Y R V V S V L T V L H Q D W

316                               330                               345                               360
L N G K E Y K C K V S N K A L P A P I E K T I S K A K G Q P R E P Q V Y T L P P S R E E M

361                               375                               390                               405
T K N Q V S L T C L V K G F Y P S D I A V E W E S N G Q P E N N Y K T T P P V L D S D G S

406                               420                               435                               449
F F L Y S K L T V D K S R W Q Q G N V F S C S V M H E A L H N H Y T Q K S L S L S P G K
```

(SEQ ID NO: 16)

FIG. 5B

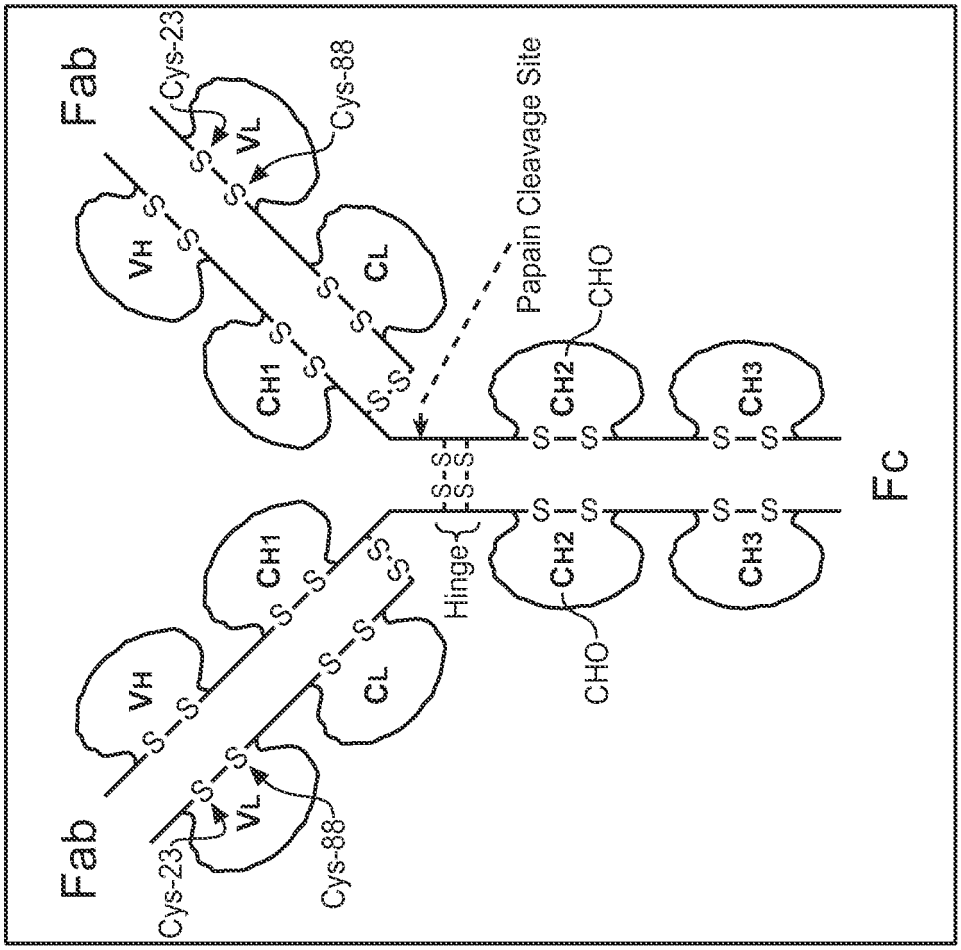

Fab
Cys-23
Cys-88
VH
VL
CH1
CL
Papain Cleavage Site
CHO
CH2
CH3
Hinge
Fc
Fab
Cys-23
Cys-88
VH
VL
CH1
CL
CHO
CH2
CH3

FIG. 6

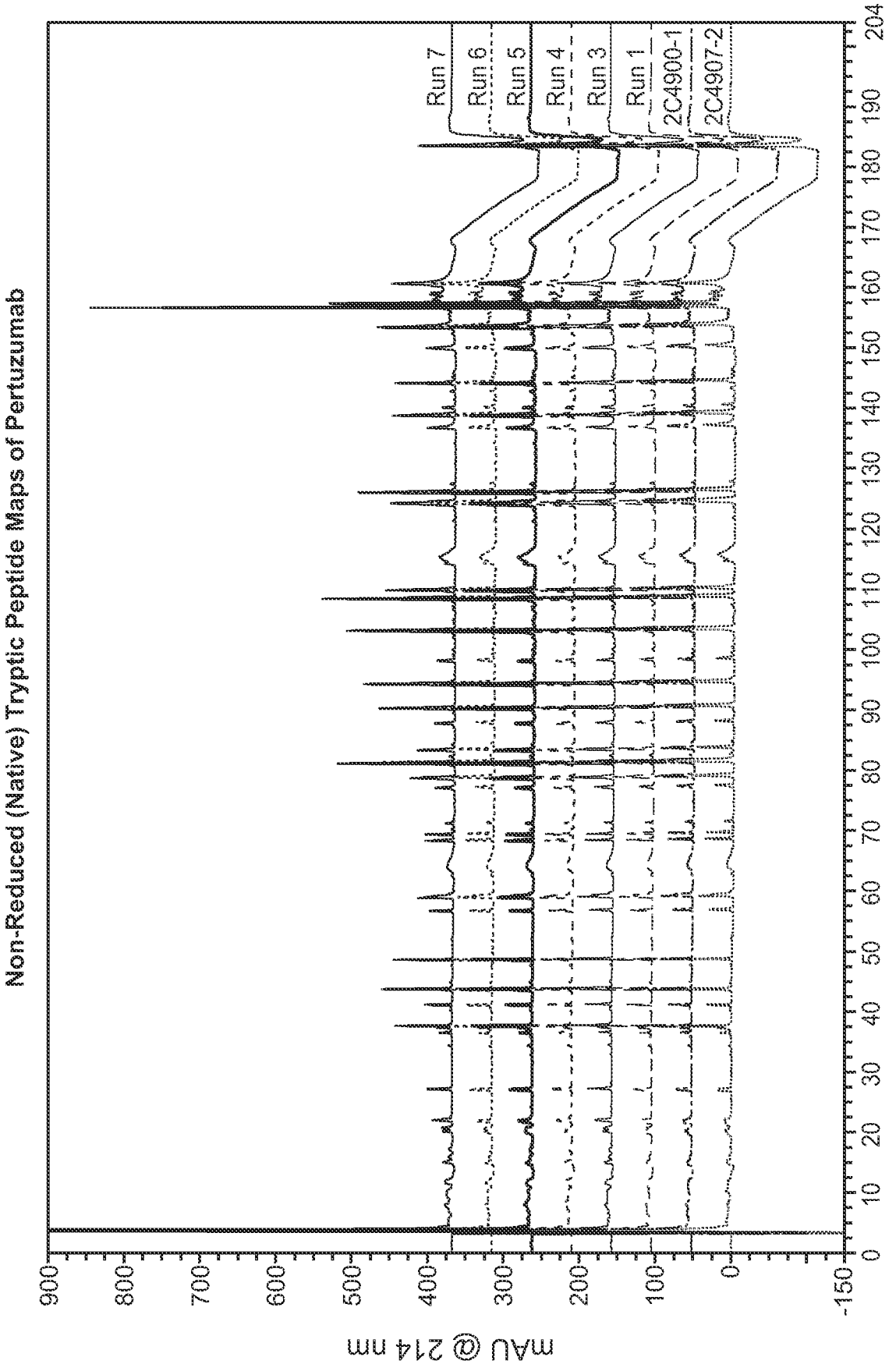

Non-Reduced (Native) Tryptic Peptide Maps of Pertuzumab
mAU @ 214 nm
Minutes
Run 7
Run 6
Run 5
Run 4
Run 3
Run 1
2C4900-1
2C4907-2
900
800
700
600
500
400
300
200
100
0
-150
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
204

FIG. 7

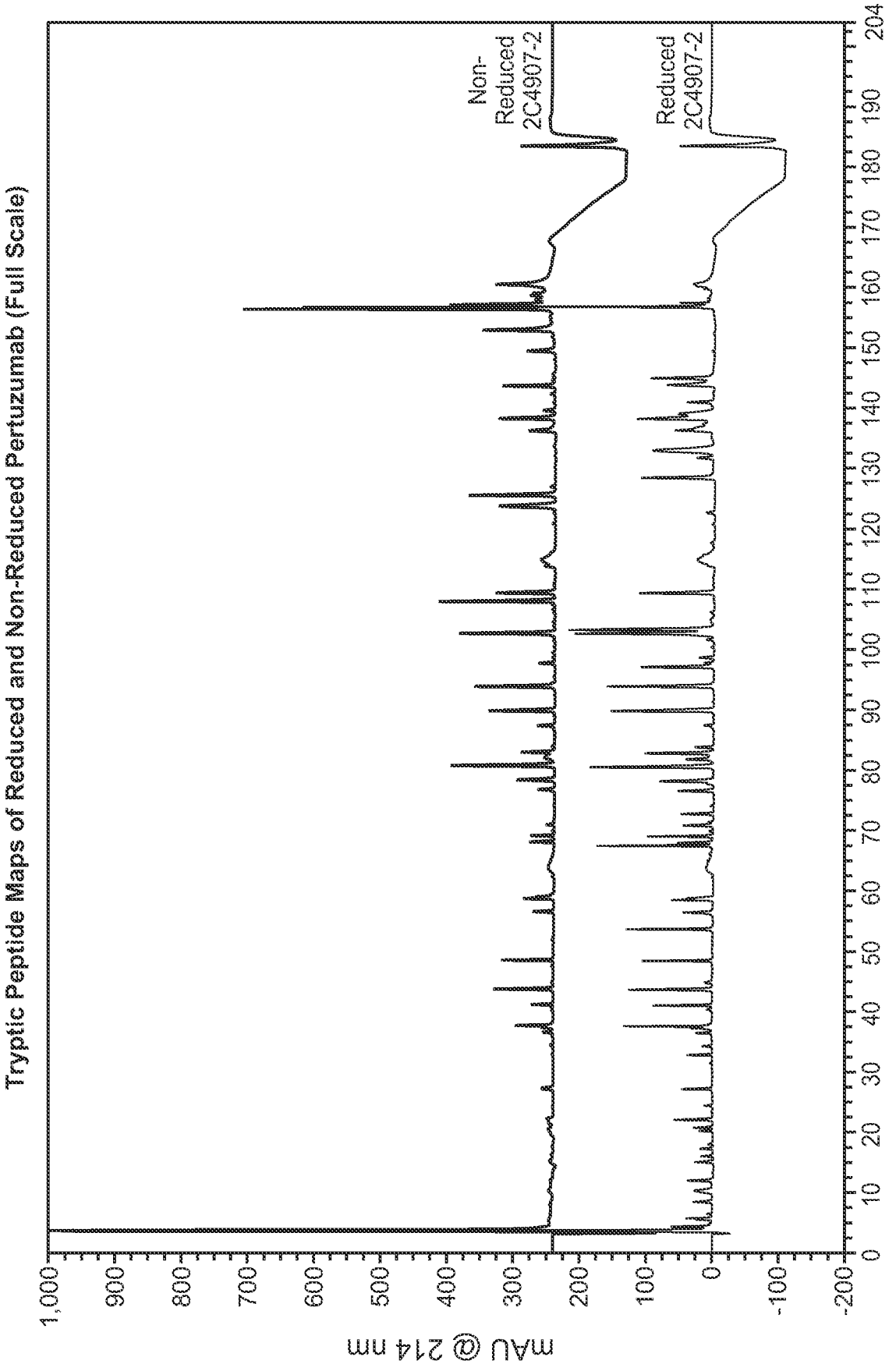

Tryptic Peptide Maps of Reduced and Non-Reduced Pertuzumab (Full Scale)
Non-Reduced 2C4907-2
Reduced 2C4907-2
mAU @ 214 nm
Minutes
1,000
900
800
700
600
500
400
300
200
100
0
-100
-200
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
204

FIG. 8

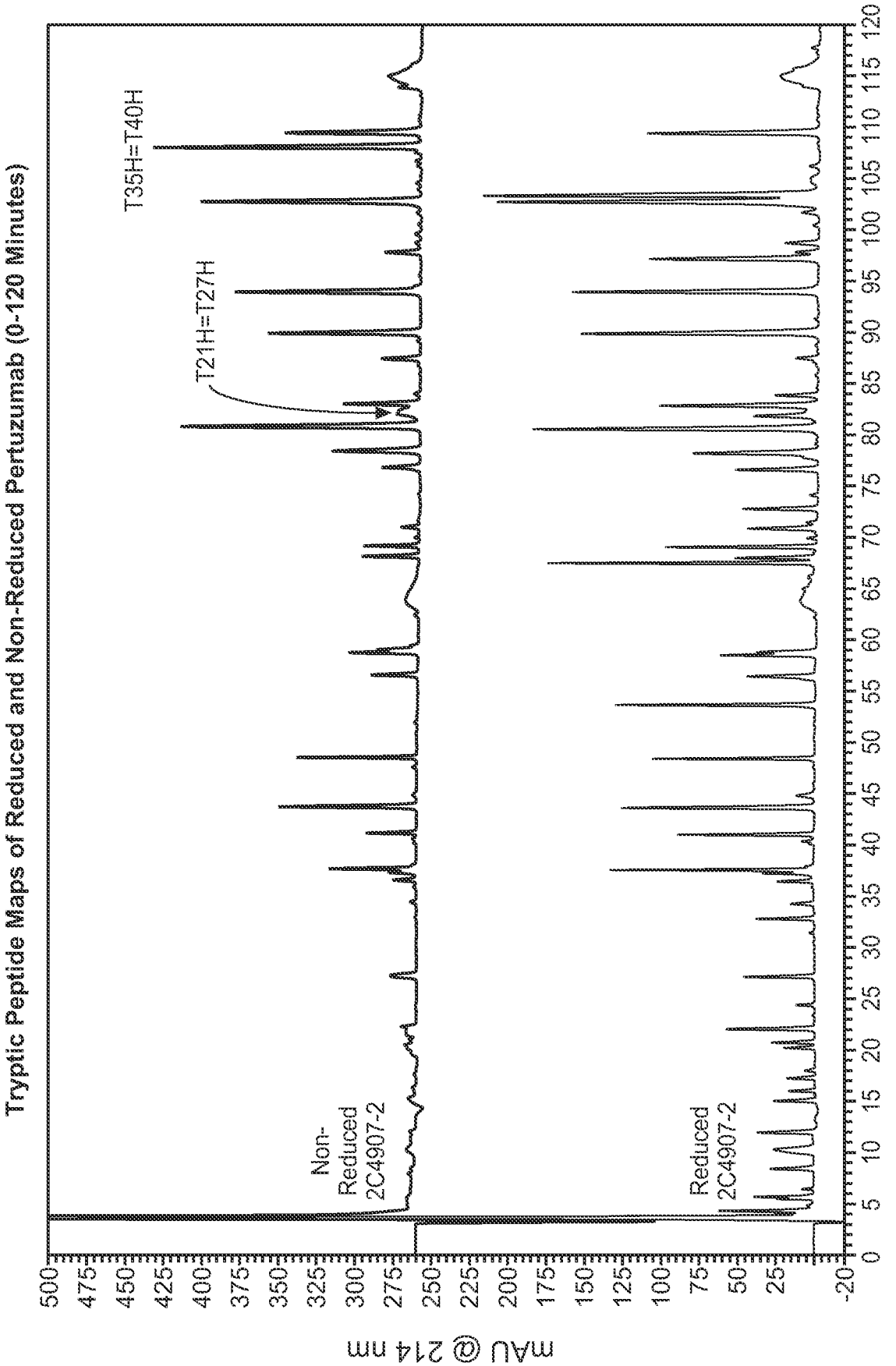

Tryptic Peptide Maps of Reduced and Non-Reduced Pertuzumab (0-120 Minutes)
T35H=T40H
T21H=T27H
Non-Reduced 2C4907-2
Reduced 2C4907-2
mAU @ 214 nm
Minutes

FIG. 9

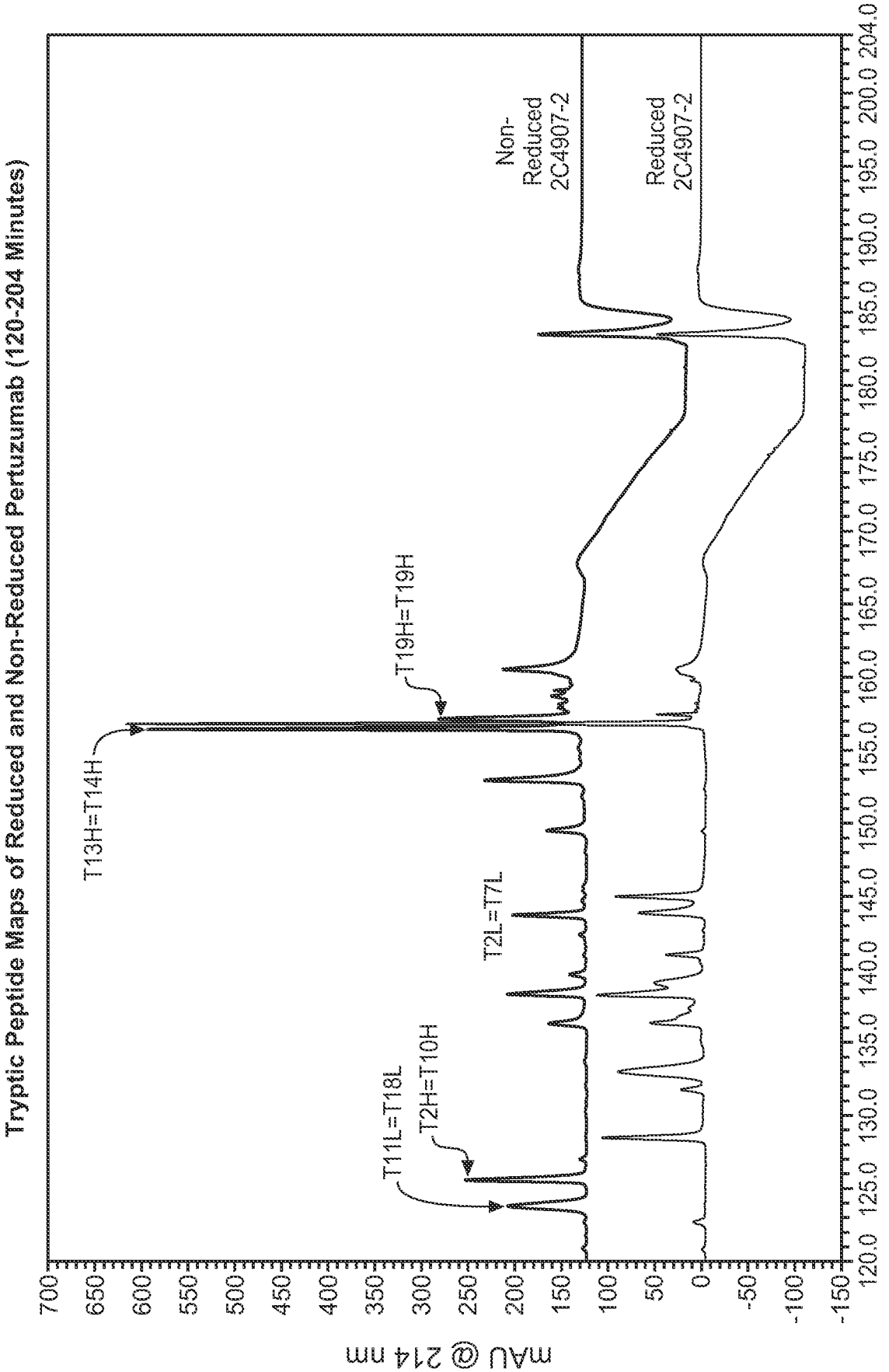

Tryptic Peptide Maps of Reduced and Non-Reduced Pertuzumab (120-204 Minutes)
mAU @ 214 nm
Minutes
Non-Reduced 2C4907-2
Reduced 2C4907-2
T13H=T14H
T19H=T19H
T2L=T7L
T2H=T10H
T11L=T18L

FIG. 10

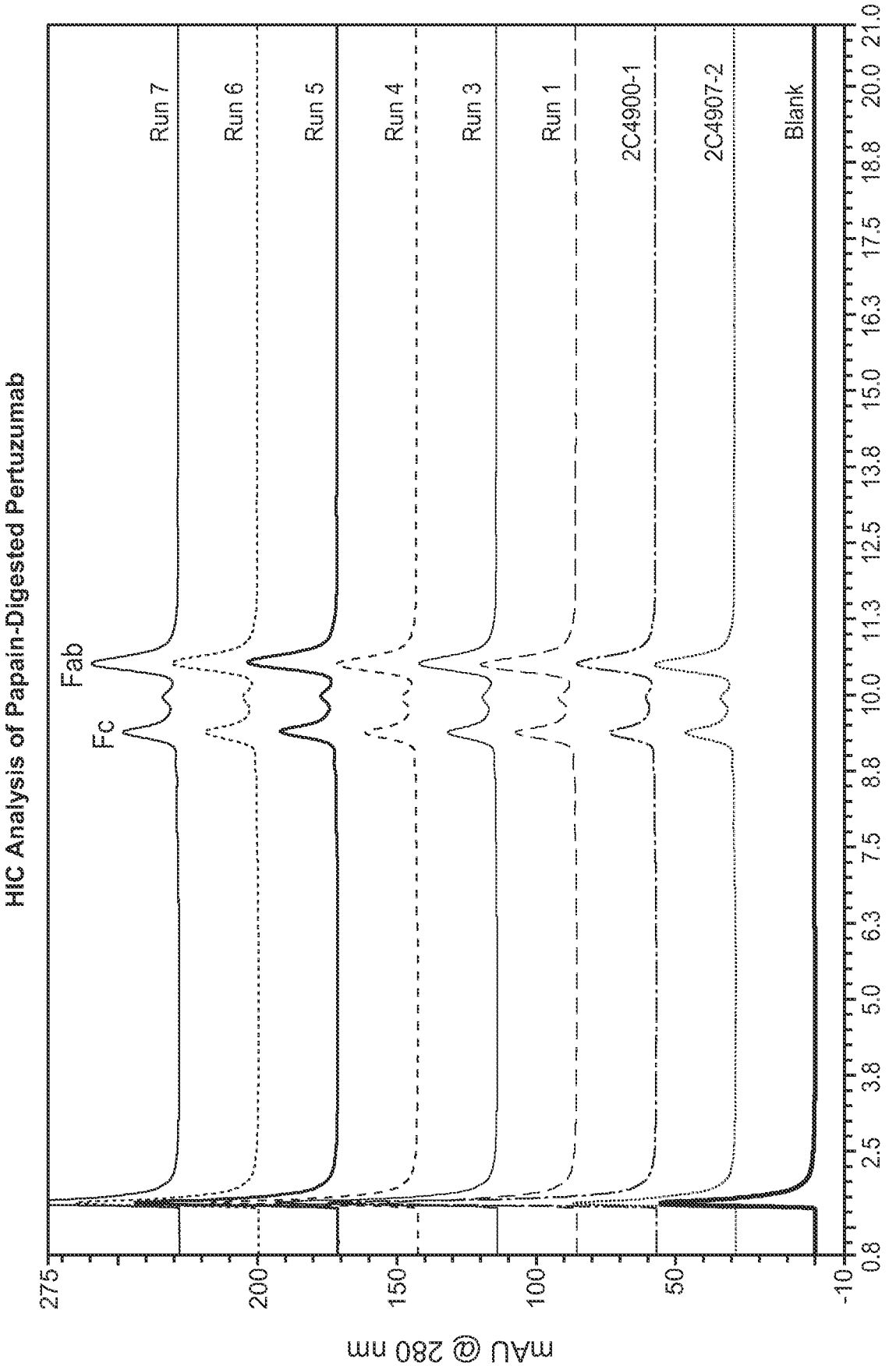

HIC Analysis of Papain-Digested Pertuzumab
Fab
Fc
Run 7
Run 6
Run 5
Run 4
Run 3
Run 1
2C4900-1
2C4907-2
Blank
mAU @ 280 nm
Minutes
275
200
150
100
50
-10
0.8
2.5
3.8
5.0
6.3
7.5
8.8
10.0
11.3
12.5
13.8
15.0
16.3
17.5
18.8
20.0
21.0

FIG. 11

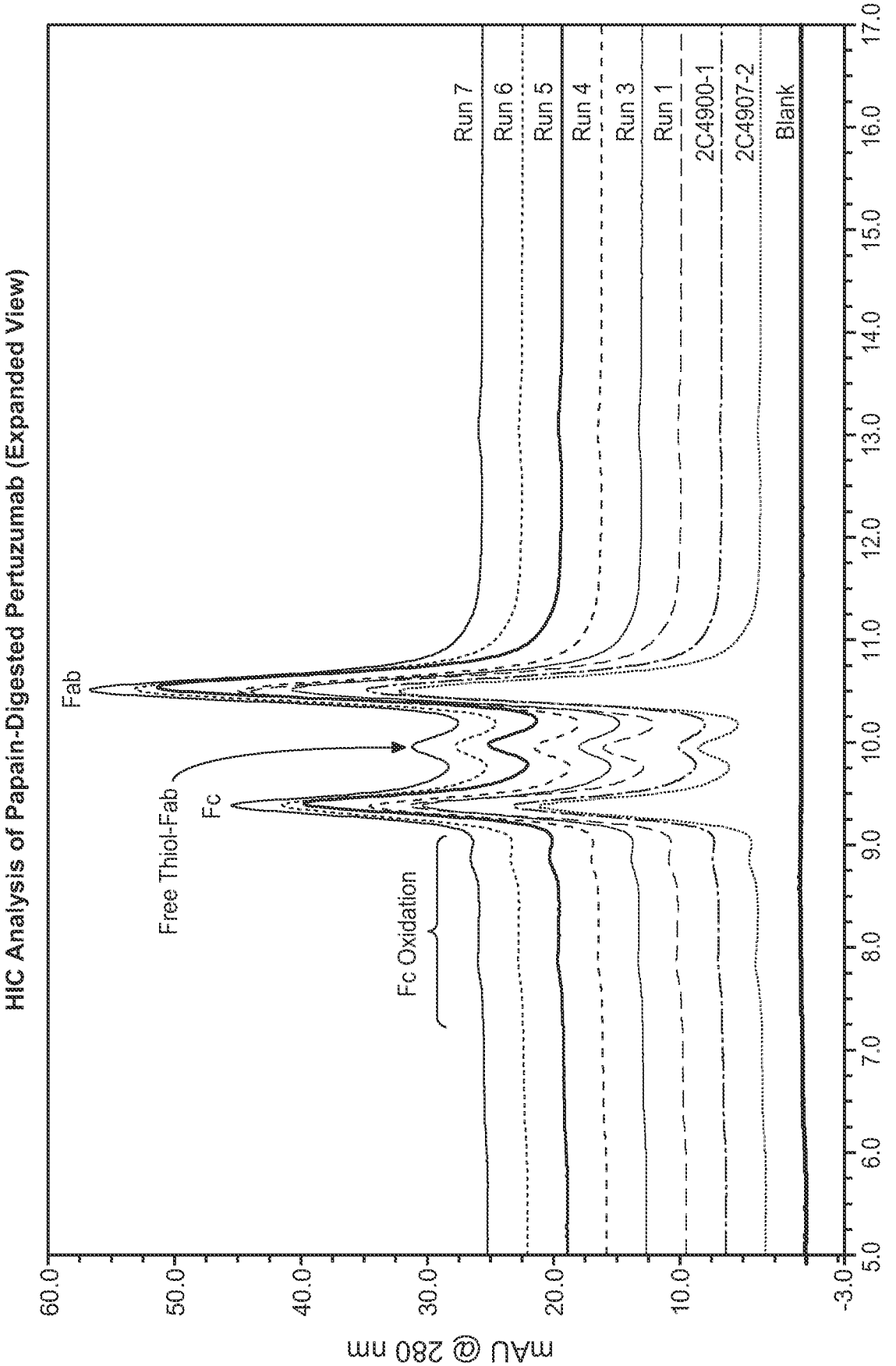

HIC Analysis of Papain-Digested Pertuzumab (Expanded View)
mAU @ 280 nm
Minutes
Fab
Free Thiol-Fab
Fc
Fc Oxidation
Run 7
Run 6
Run 5
Run 4
Run 3
Run 1
2C4900-1
2C4907-2
Blank
60.0
50.0
40.0
30.0
20.0
10.0
-3.0
5.0
6.0
7.0
8.0
9.0
10.0
11.0
12.0
13.0
14.0
15.0
16.0
17.0

FIG. 12

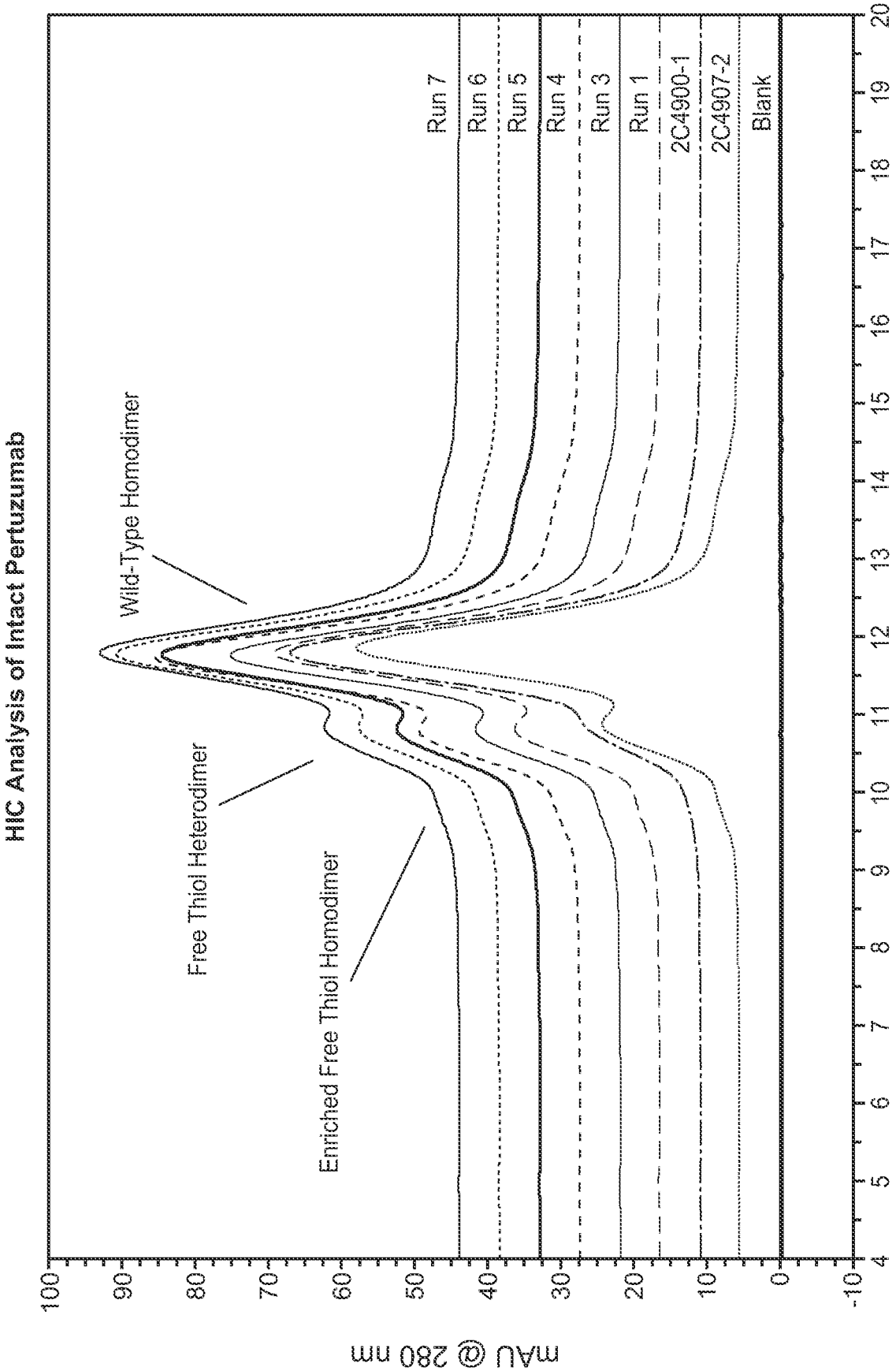

HIC Analysis of Intact Pertuzumab
mAU @ 280 nm
Minutes
Wild-Type Homodimer
Free Thiol Heterodimer
Enriched Free Thiol Homodimer
Run 7
Run 6
Run 5
Run 4
Run 3
Run 1
2C4900-1
2C4907-2
Blank

FIG. 13

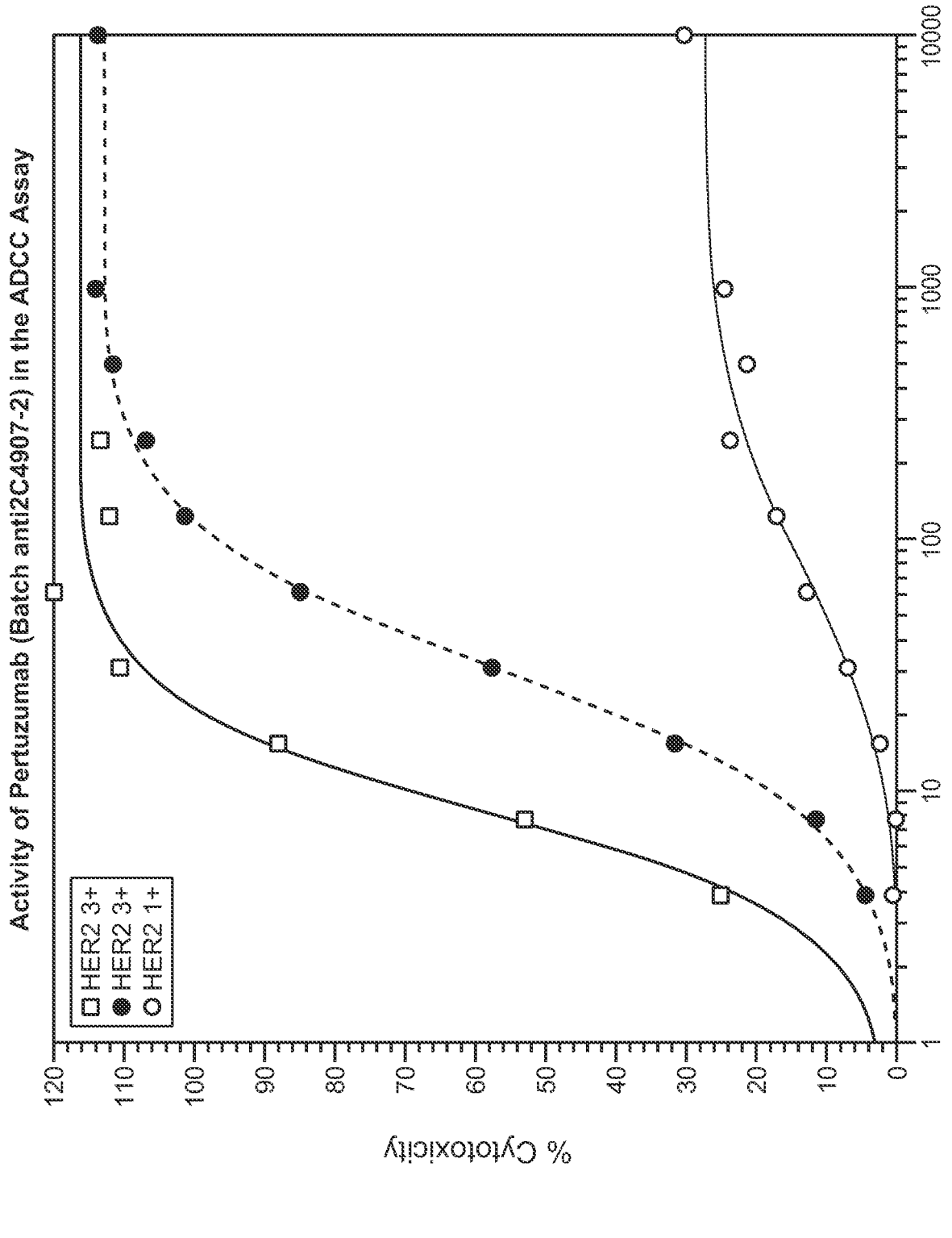

Activity of Pertuzumab (Batch anti2C4907-2) in the ADCC Assay
HER2 3+
HER2 3+
HER2 1+
% Cytotoxicity
Concentration (ng/mL)
120
110
100
90
80
70
60
50
40
30
20
10
0
1
10
100
1000
10000

FIG. 14

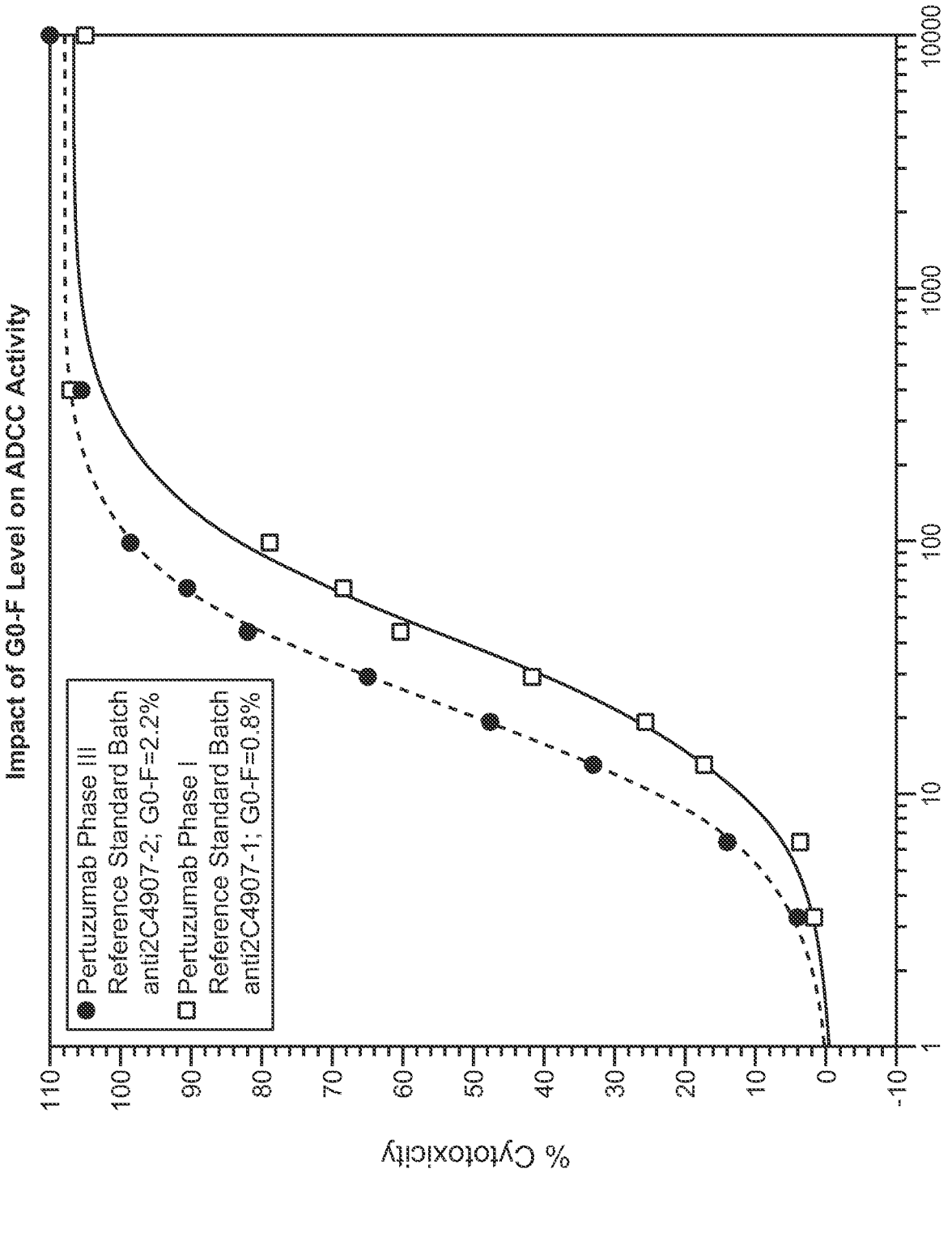

Impact of G0-F Level on ADCC Activity
Pertuzumab Phase III Reference Standard Batch anti2C4907-2; G0-F=2.2%
Pertuzumab Phase I Reference Standard Batch anti2C4907-1; G0-F=0.8%
% Cytotoxicity
110
100
90
80
70
60
50
40
30
20
10
0
-10
1
10
100
1000
10000
Concentration (ng/mL)

FIG. 15

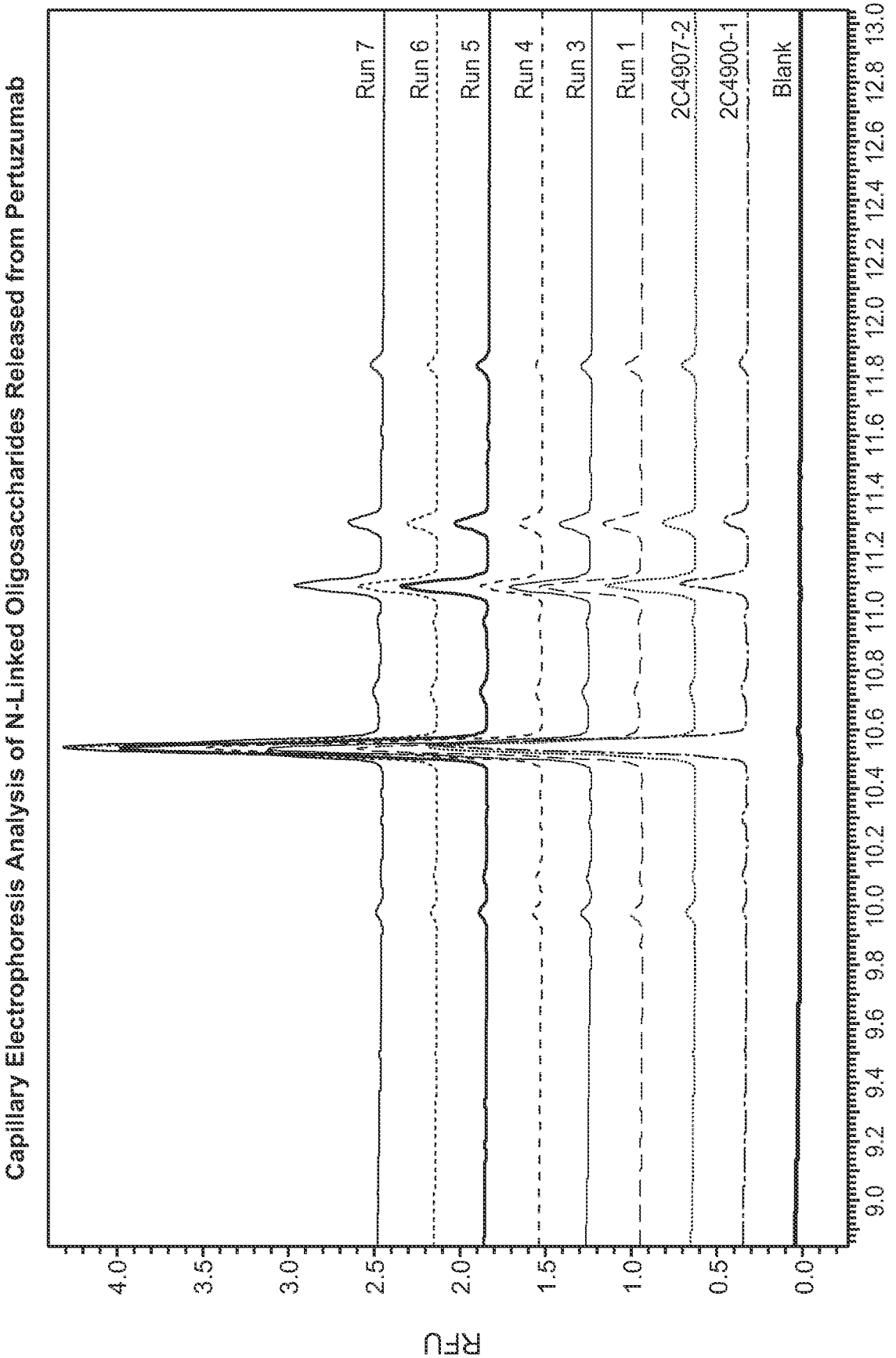

Capillary Electrophoresis Analysis of N-Linked Oligosaccharides Released from Pertuzumab
RFU
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Minutes
9.0 9.2 9.4 9.6 9.8 10.0 10.2 10.4 10.6 10.8 11.0 11.2 11.4 11.6 11.8 12.0 12.2 12.4 12.6 12.8 13.0
Run 7
Run 6
Run 5
Run 4
Run 3
Run 1
2C4907-2
2C4900-1
Blank

FIG. 16

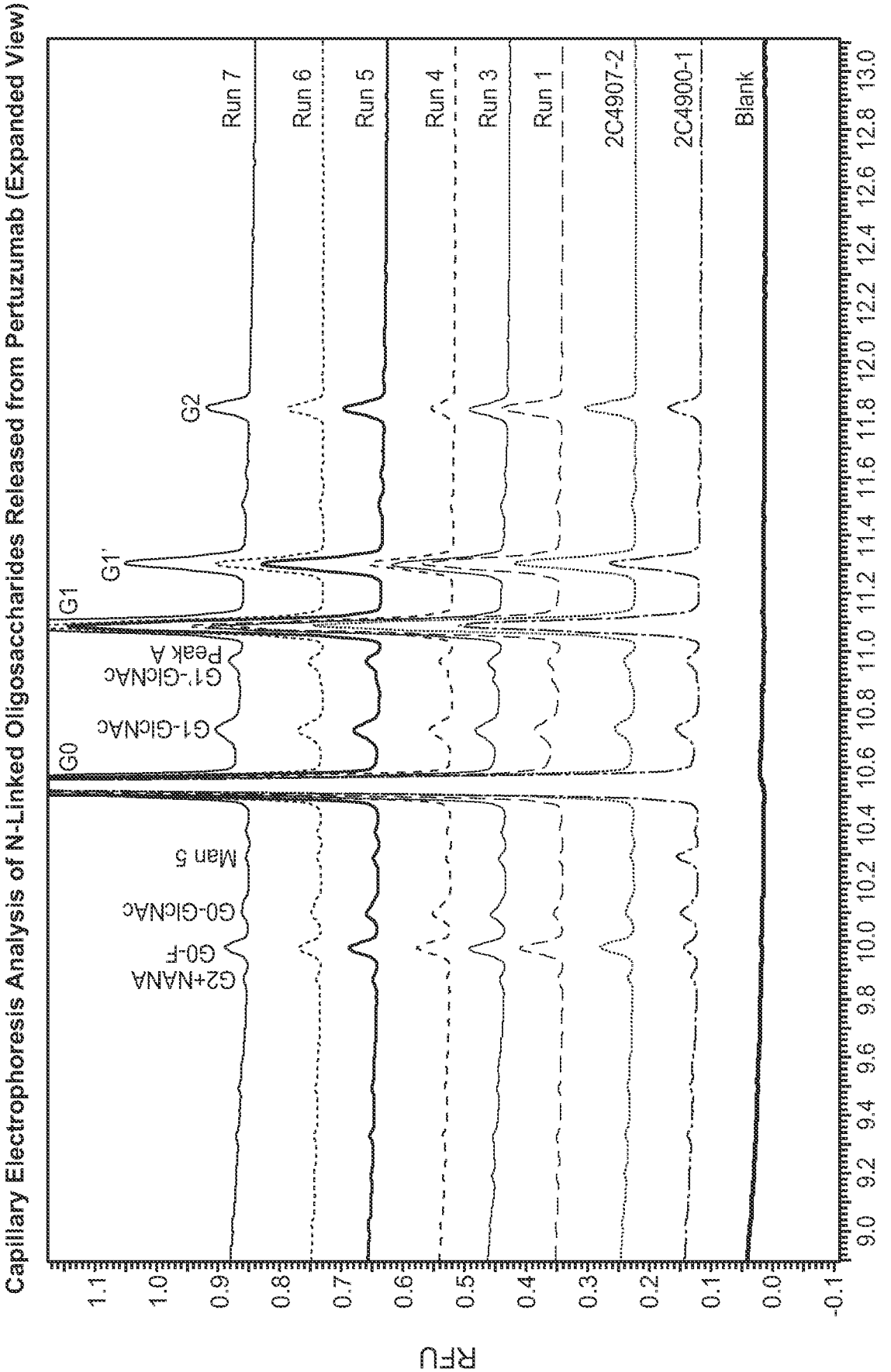

Capillary Electrophoresis Analysis of N-Linked Oligosaccharides Released from Pertuzumab (Expanded View)
RFU
Minutes
G2+NANA
G0-F
G0-GlcNAc
Man 5
G0
G1-GlcNAc
G1'-GlcNAc
Peak A
G1
G1'
G2
Run 7
Run 6
Run 5
Run 4
Run 3
Run 1
2C4907-2
2C4900-1
Blank

FIG. 17

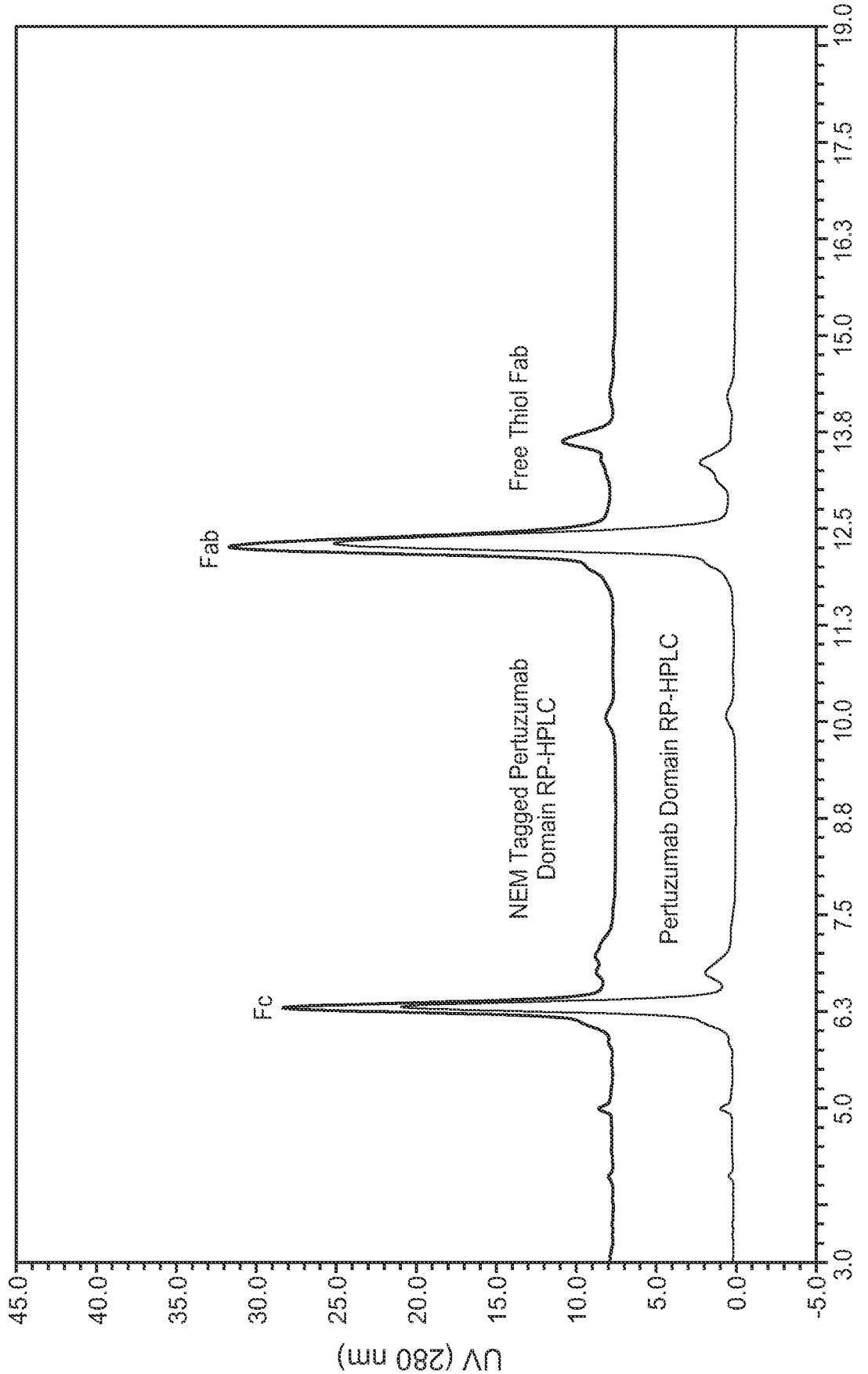

UV (280 nm)
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
-5.0
3.0
5.0
6.3
7.5
8.8
10.0
11.3
12.5
13.8
15.0
16.3
17.5
19.0
Time (Min)
Fc
Fab
NEM Tagged Pertuzumab Domain RP-HPLC
Pertuzumab Domain RP-HPLC
Free Thiol Fab

FIG. 18

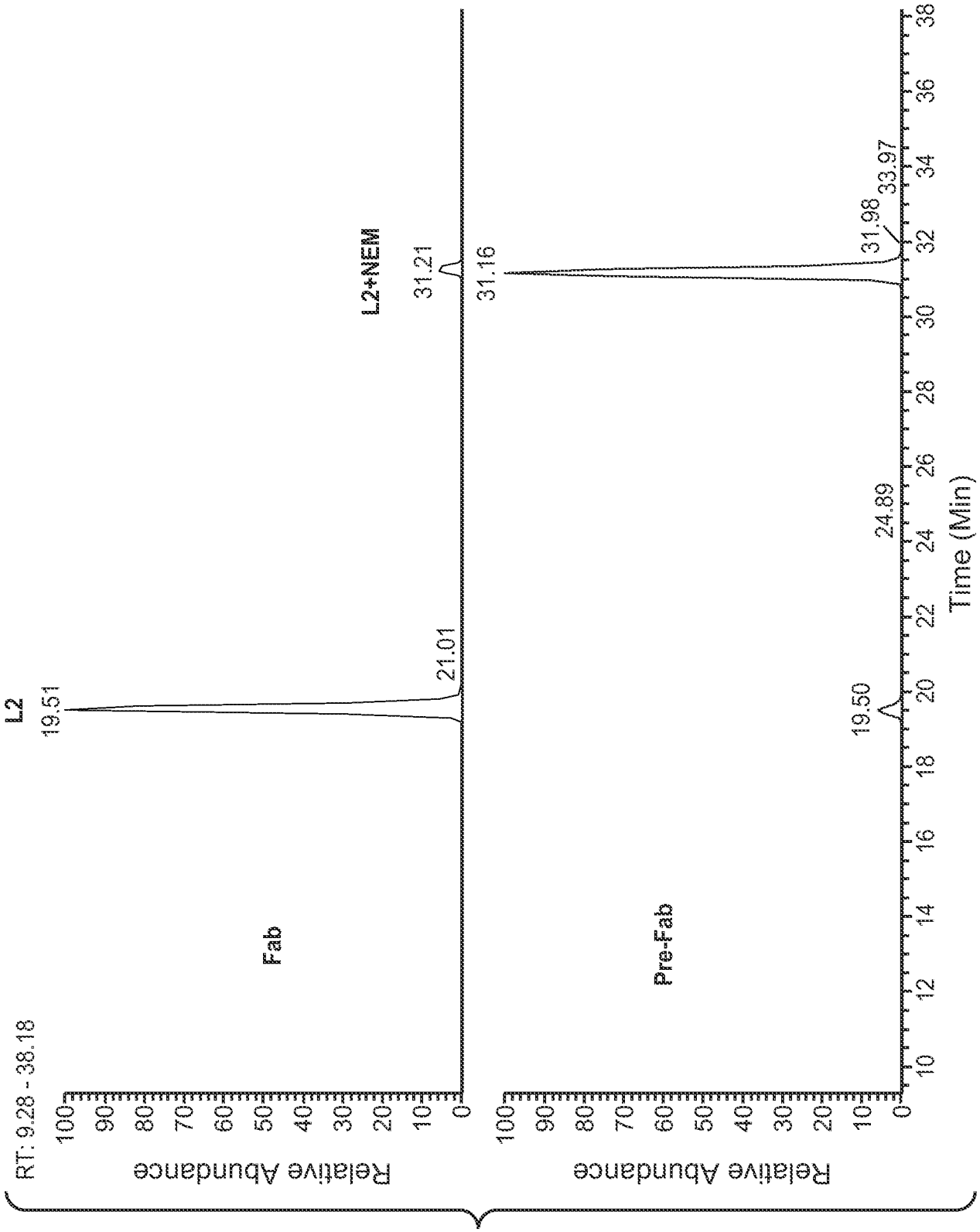

RT: 9.28 - 38.18
Relative Abundance
Fab
L2
19.51
21.01
L2+NEM
31.21
31.16
Relative Abundance
Pre-Fab
19.50
24.89
31.98
33.97
Time (Min)

FIG. 19

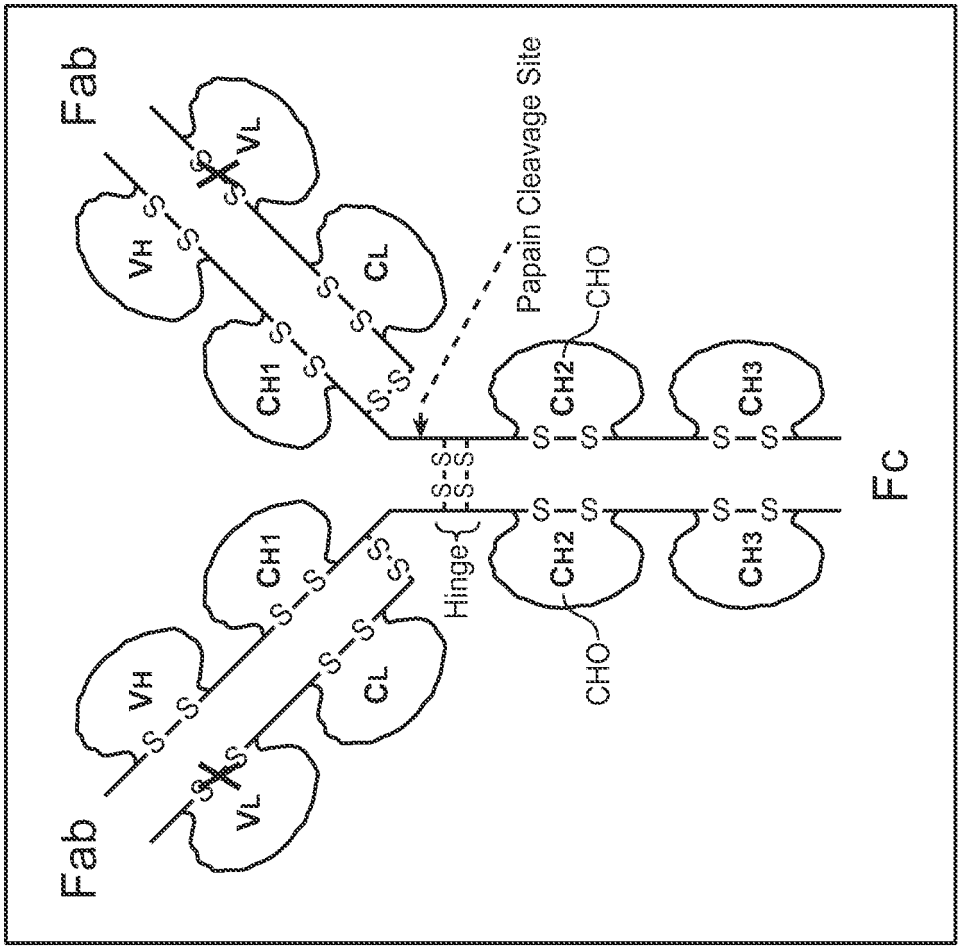


FIG. 20C

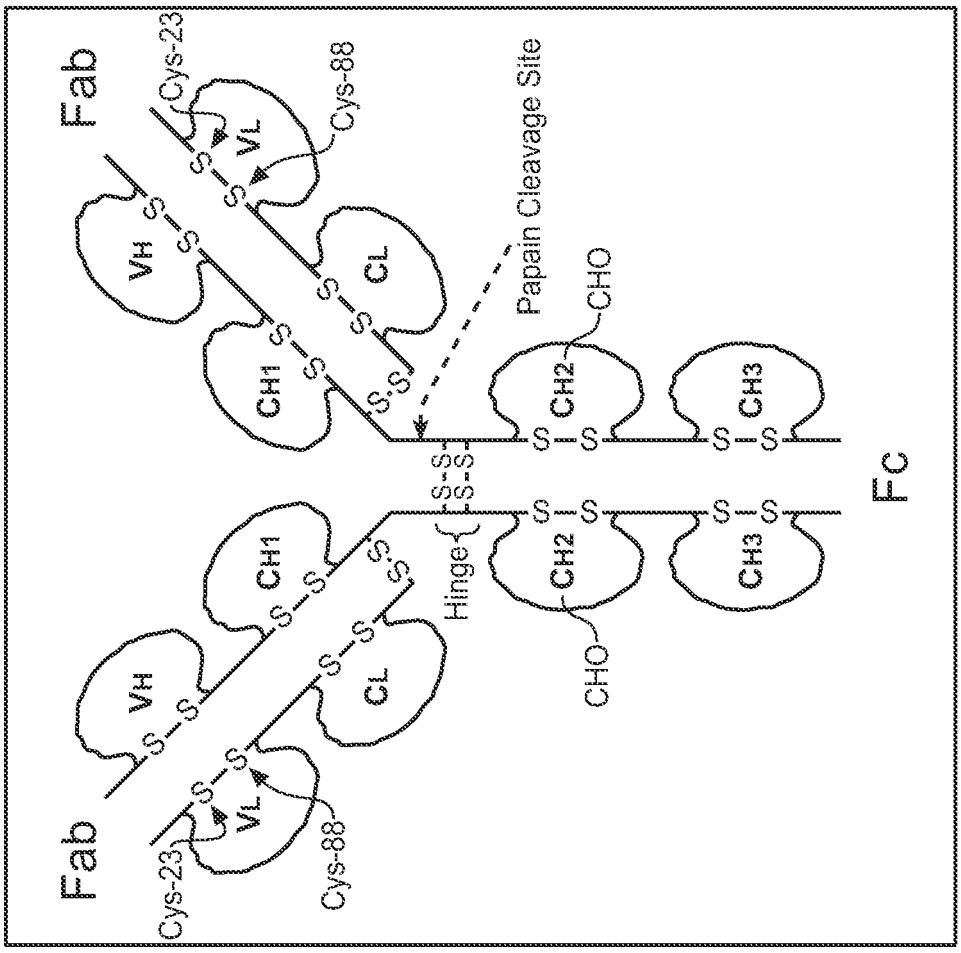


FIG. 20A

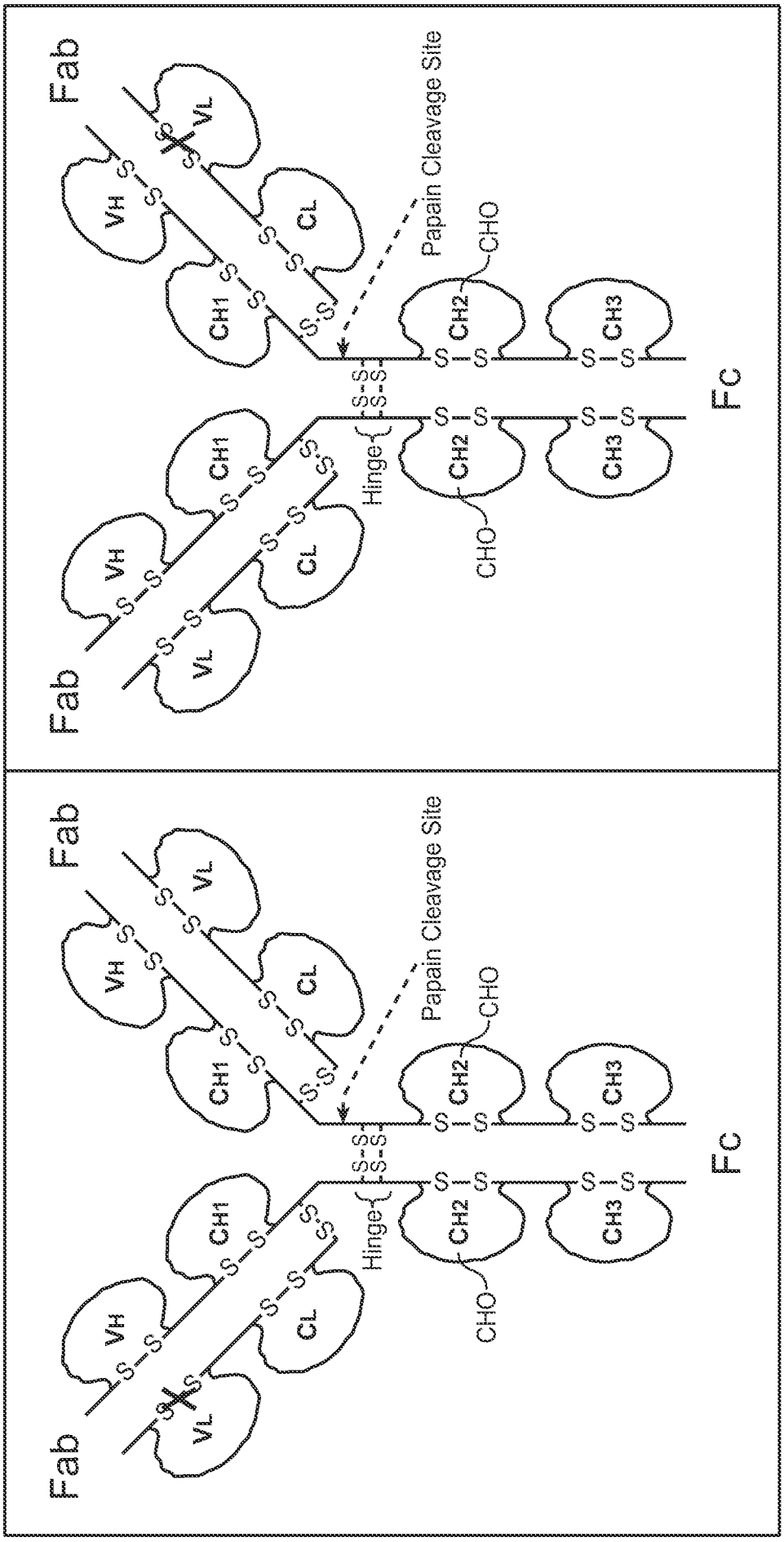

Fab
Fab
Fab
Fab
VH
VL
CH1
CL
Papain Cleavage Site
CHO
CH2
CH3
Hinge
Fc
S-S

FIG. 20B

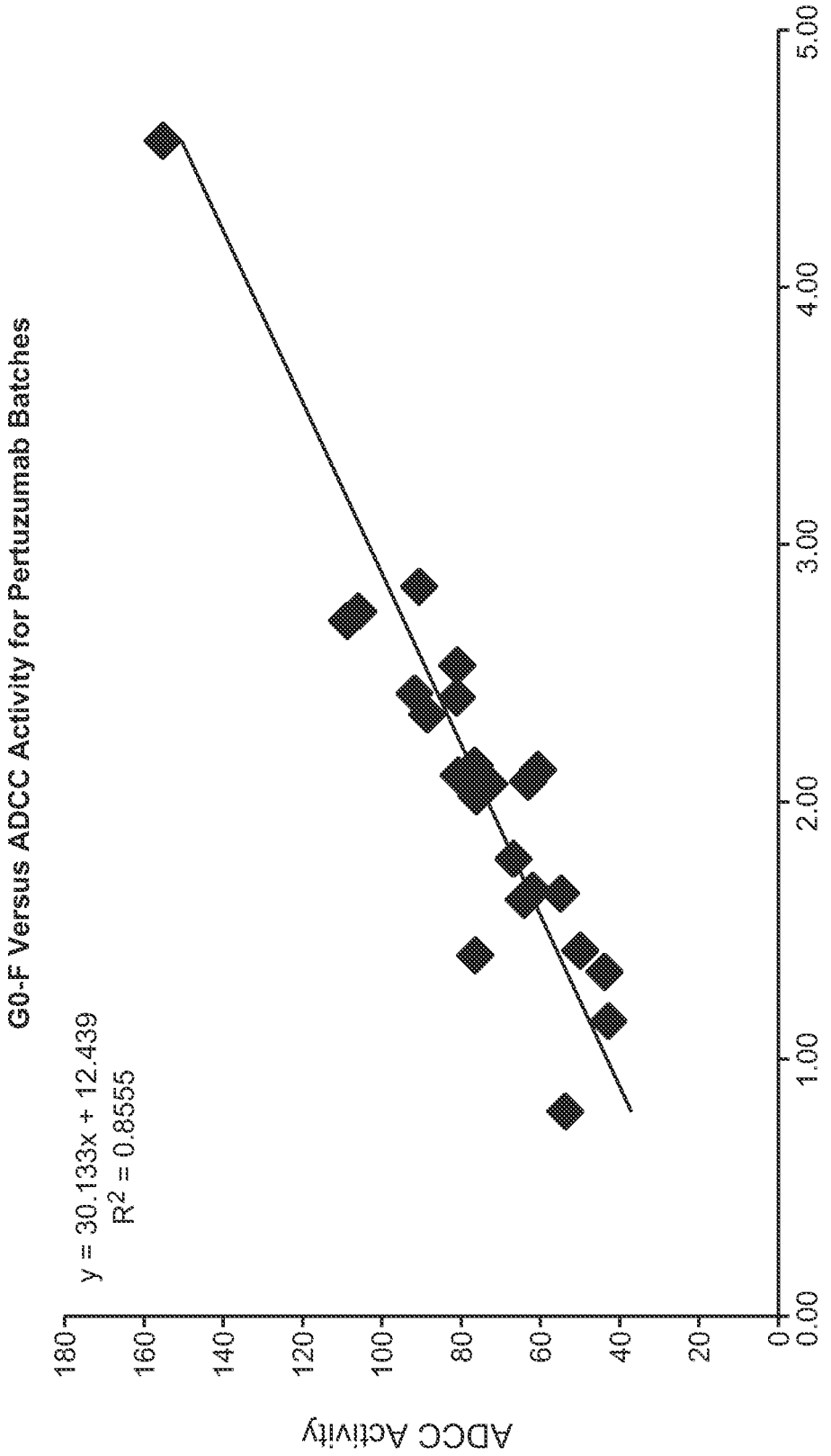

G0-F Versus ADCC Activity for Pertuzumab Batches
y = 30.133x + 12.439
R2 = 0.8555
ADCC Activity
G0-F (% CPA)
0
20
40
60
80
100
120
140
160
180
0.00
1.00
2.00
3.00
4.00
5.00

FIG. 21

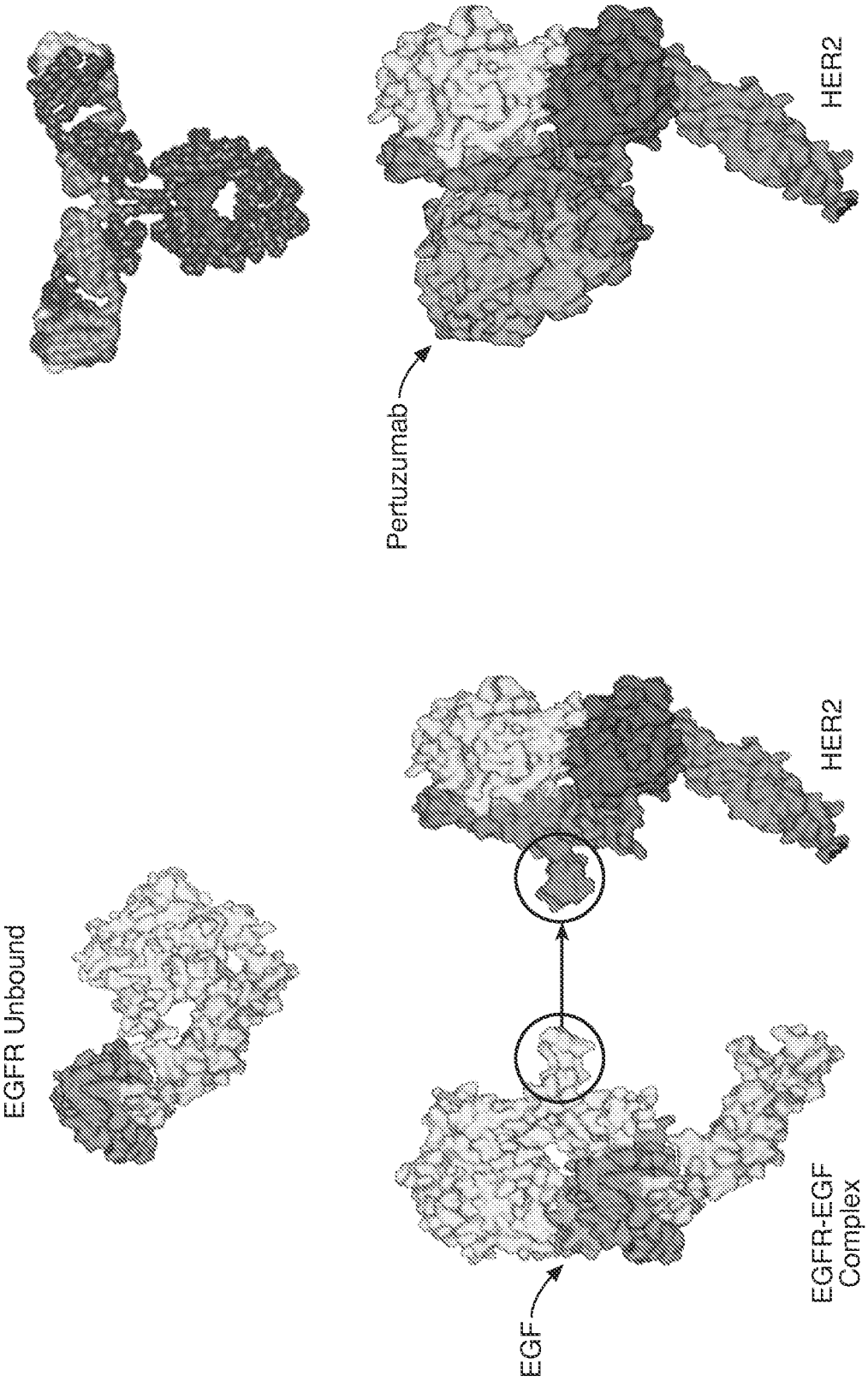


FIG. 22

Trastuzumab
HERCEPTIN
Pertuzumab
PERJETA
• Binds in Subdomain IV.
• Protects against receptor shedding
• Moderately affects receptor down-modulation
• Slight effect on HER2's role as a coreceptor
• Binds in Subdomain II at dimerization interface
• Does not prevent receptor shedding
• Moderately affects receptor down-modulation
• Major effect on HER2's role as a coreceptor

FIG. 23

FIG. 24A

Oligosaccharide Structures attached to IgG1

Structures	Abbreviation	Mass
Manα(1–>6) Manα(1–>3) > Manα(1–>6) > Manβ(1–>4)GlcNAcβ(1–>4)GlcNAc- Manα(1–>3)	Man5	1235
Fucα(1–>6) I GlcNAcβ(1–>2) { Manα(1–>6) > Manβ(1–>4)GlcNAcβ(1–>4)GlcNAc- Manα(1–>3)	G-1	1260
GlcNAcβ(1–>2)Manα(1–>6) > Manβ(1–>4)GlcNAcβ(1–>4)GlcNAc- GlcNAcβ(1–>2)Manα(1–>3)	G0-F	1317
Manα(1–>6) Manα(1–>3) > Manα(1–>6) > Manβ(1–>4)GlcNAcβ(1–>4)GlcNAc- Manα(1–>2)Manα(1–>3)	Man6	1398

Oligosaccharide Structures attached to IgG1

Structures	Abbreviation	Mass
Galβ(1–>4)GlcNAcβ(1–>2){Manα(1–>6), Manα(1–>3)} > Manβ(1–>4)GlcNAcβ(1–>4)GlcNAc- (Fucα(1–>6) on GlcNAc)	G1-1	1423
GlcNAcβ(1–>2)Manα(1–>6), GlcNAcβ(1–>2)Manα(1–>3) > Manβ(1–>4)GlcNAcβ(1–>4)GlcNAc- (Fucα(1–>6) on GlcNAc)	G0	1463
Galβ(1–>4)GlcNAcβ(1–>2)Manα(1–>6), GlcNAcβ(1–>2)Manα(1–>3) > Manβ(1–>4)GlcNAcβ(1–>4)GlcNAc- (Fucα(1–>6) on GlcNAc)	G1 (1-6)	1626
GlcNAcβ(1–>2)Manα(1–>6), Galβ(1–>4)GlcNAcβ(1–>2)Manα(1–>3) > Manβ(1–>4)GlcNAcβ(1–>4)GlcNAc- (Fucα(1–>6) on GlcNAc)	G1 (1-3)	1626
Galβ(1–>4)GlcNAcβ(1–>2)Manα(1–>6), Galβ(1–>4)GlcNAcβ(1–>2)Manα(1–>3) > Manβ(1–>4)GlcNAcβ(1–>4)GlcNAc- (Fucα(1–>6) on GlcNAc)	G2	1788

Masses shown in this figure correspond to the $(M+Na)^+$ values.

FIG. 24B

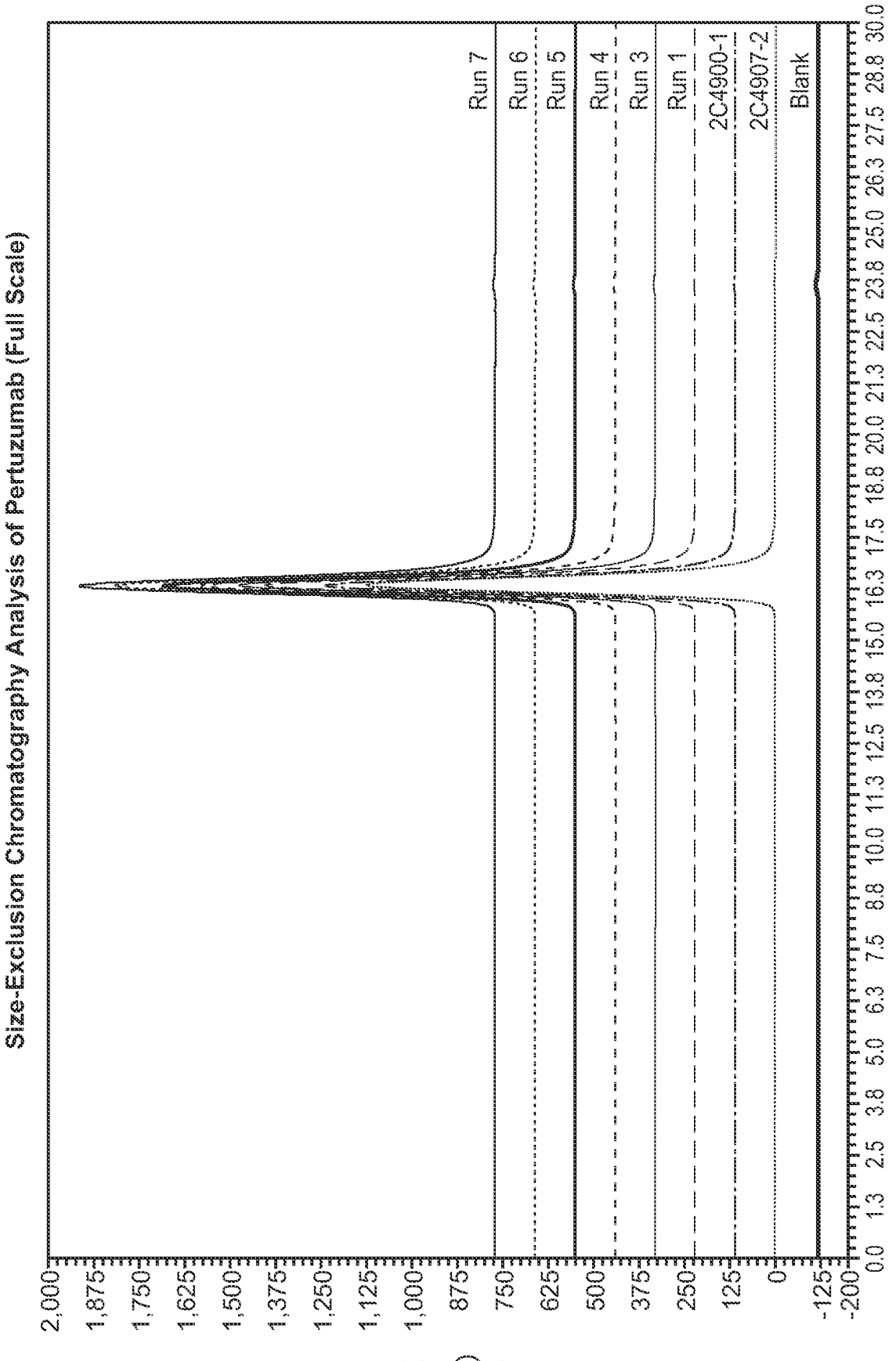

Size-Exclusion Chromatography Analysis of Pertuzumab (Full Scale)
mAU @ 280 nm
Minutes
Run 7
Run 6
Run 5
Run 4
Run 3
Run 1
2C4900-1
2C4907-2
Blank
2,000
1,875
1,750
1,625
1,500
1,375
1,250
1,125
1,000
875
750
625
500
375
250
125
0
-125
-200
0.0 1.3 2.5 3.8 5.0 6.3 7.5 8.8 10.0 11.3 12.5 13.8 15.0 16.3 17.5 18.8 20.0 21.3 22.5 23.8 25.0 26.3 27.5 28.8 30.0

FIG. 25

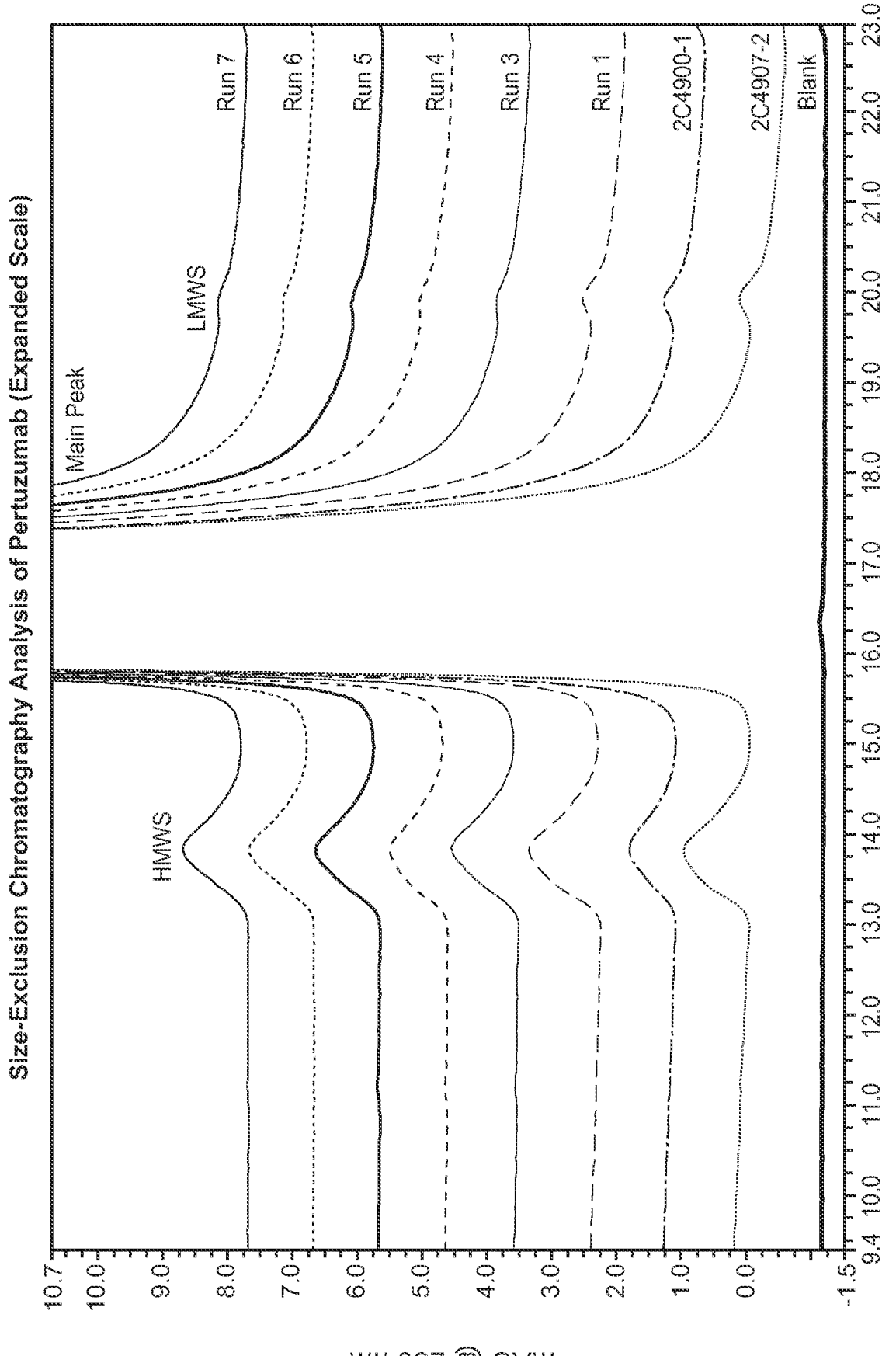

Size-Exclusion Chromatography Analysis of Pertuzumab (Expanded Scale)
HMWS
Main Peak
LMWS
Run 7
Run 6
Run 5
Run 4
Run 3
Run 1
2C4900-1
2C4907-2
Blank
mAU @ 280 nm
Minutes
10.7
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
-1.5
9.4
10.0
11.0
12.0
13.0
14.0
15.0
16.0
17.0
18.0
19.0
20.0
21.0
22.0
23.0

FIG. 26

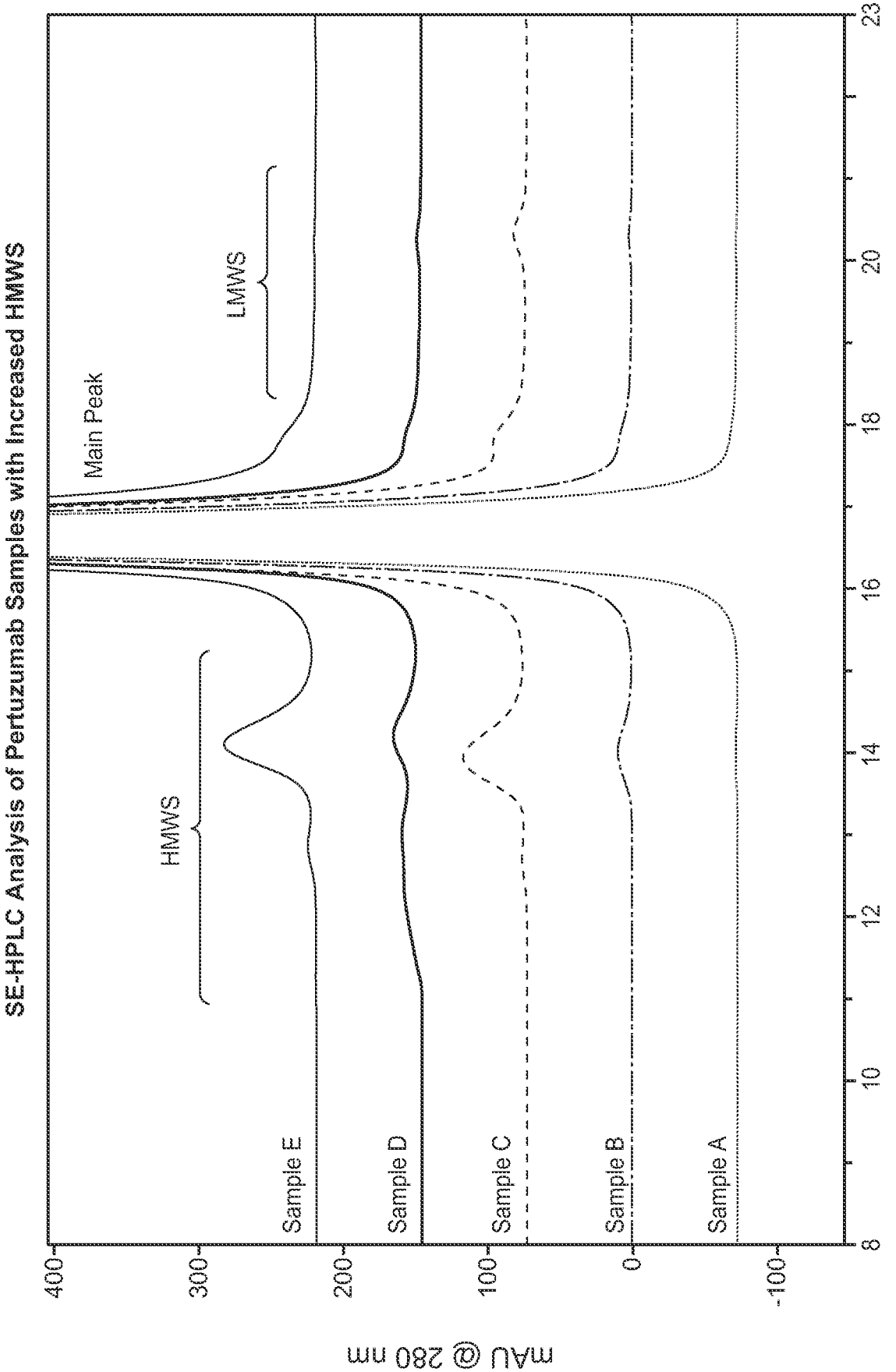

SE-HPLC Analysis of Pertuzumab Samples with Increased HMWS
HMWS
Main Peak
LMWS
Sample E
Sample D
Sample C
Sample B
Sample A
mAU @ 280 nm
400
300
200
100
0
-100
8
10
12
14
16
18
20
23
Minutes

FIG. 27

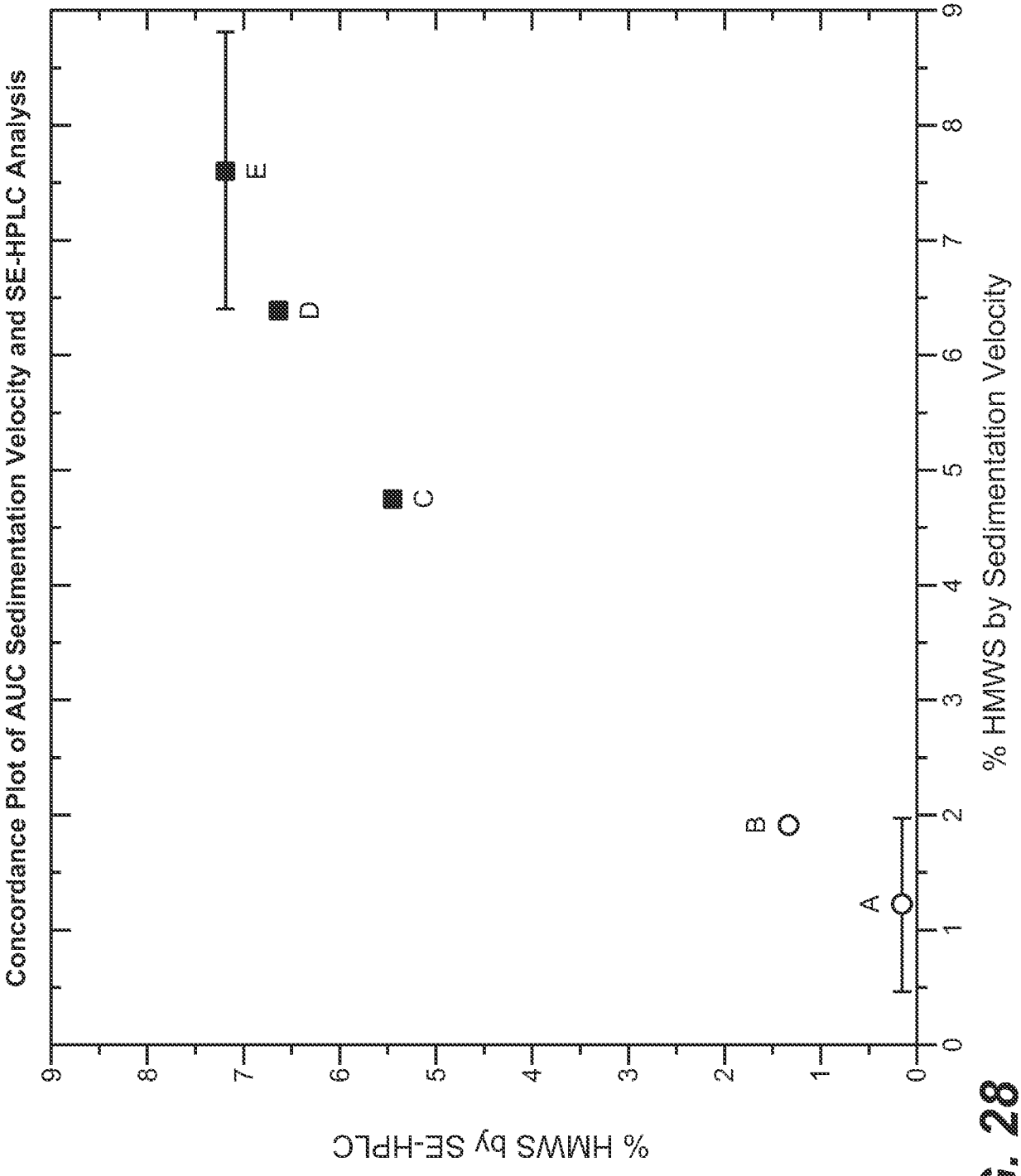

Concordance Plot of AUC Sedimentation Velocity and SE-HPLC Analysis
% HMWS by SE-HPLC
% HMWS by Sedimentation Velocity
A
B
C
D
E
0
1
2
3
4
5
6
7
8
9

FIG. 28

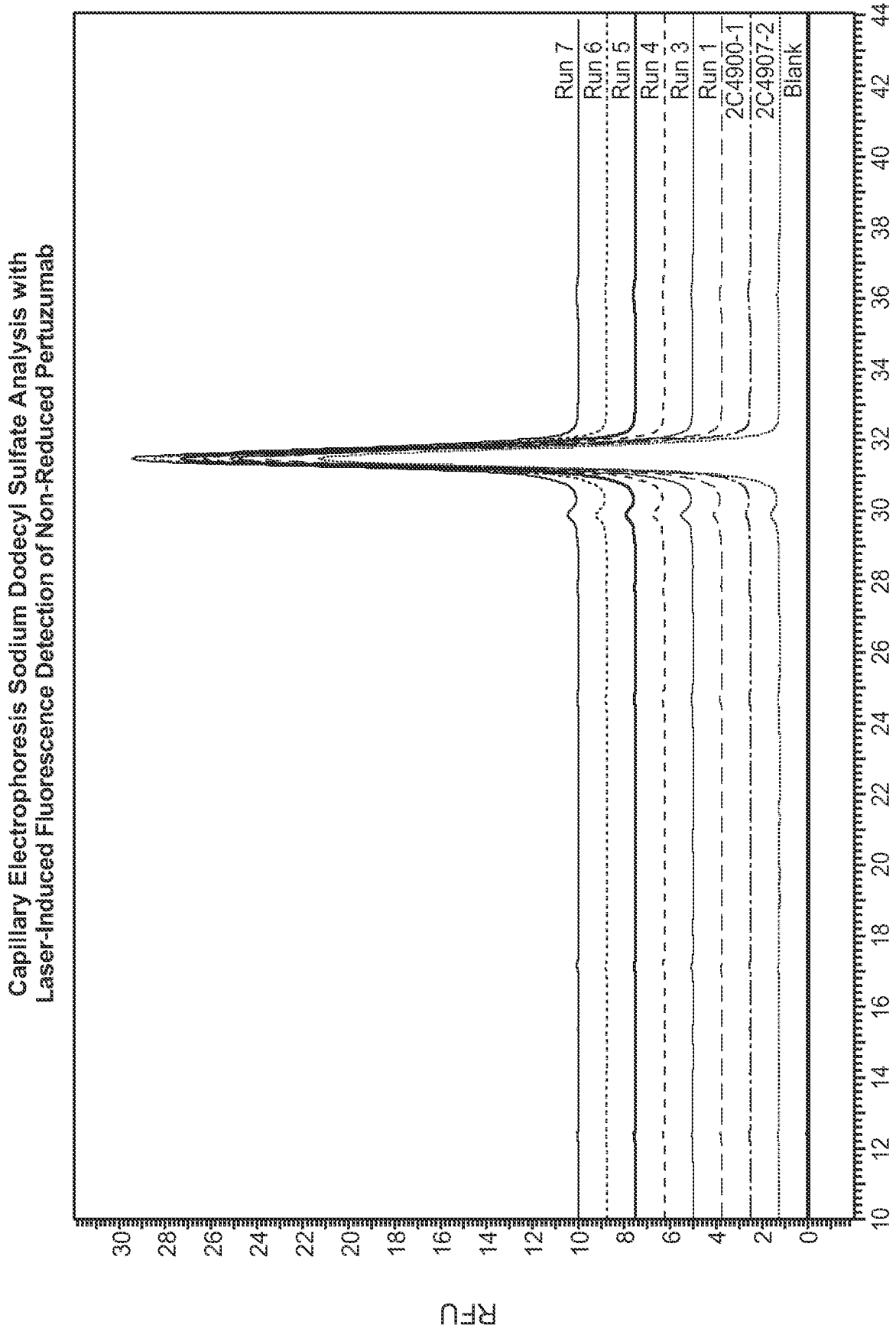

Capillary Electrophoresis Sodium Dodecyl Sulfate Analysis with
Laser-Induced Fluorescence Detection of Non-Reduced Pertuzumab
RFU
Minutes
Run 7
Run 6
Run 5
Run 4
Run 3
Run 1
2C4900-1
2C4907-2
Blank

FIG. 29

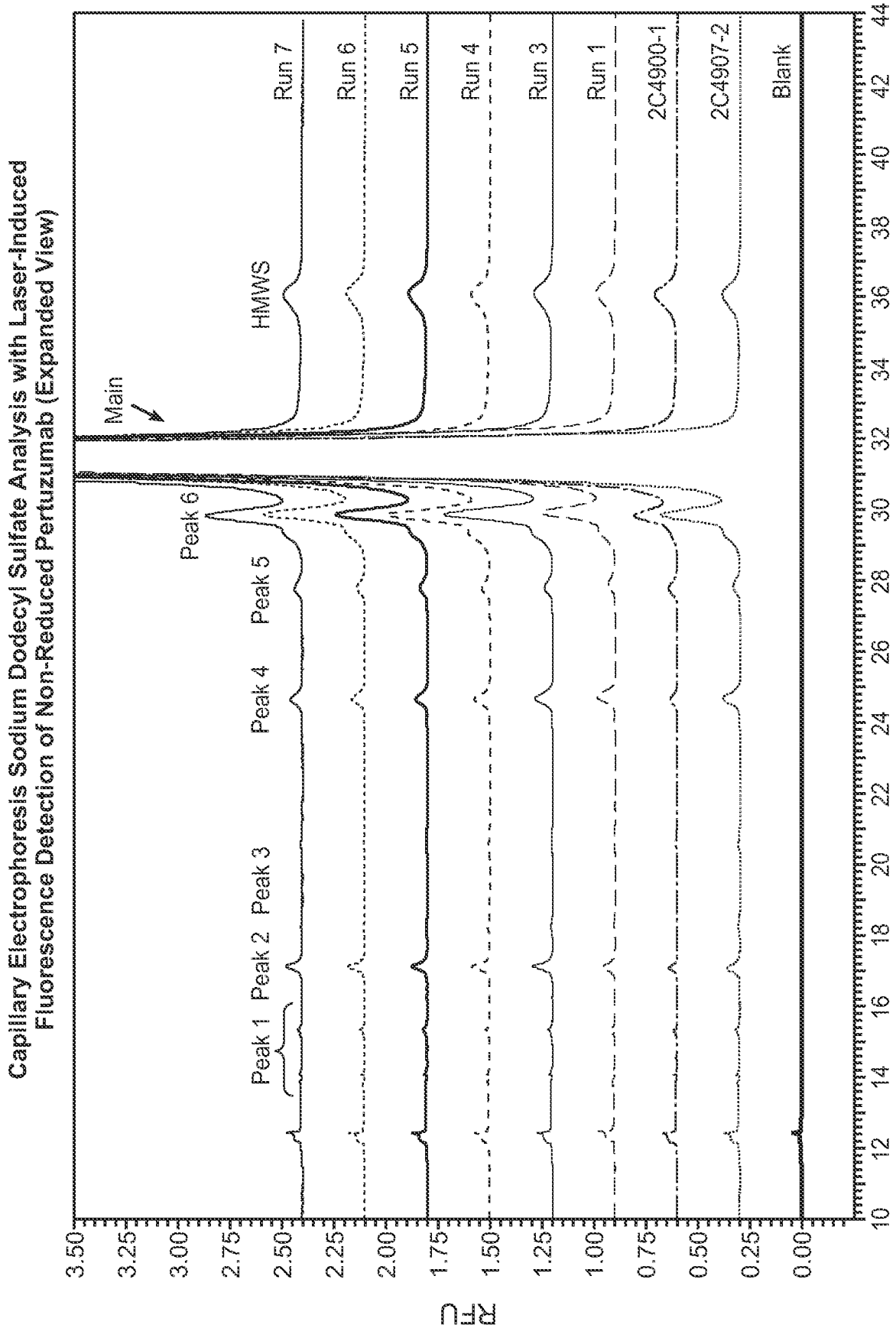

Capillary Electrophoresis Sodium Dodecyl Sulfate Analysis with Laser-Induced Fluorescence Detection of Non-Reduced Pertuzumab (Expanded View)
Main
HMWS
Peak 1
Peak 2
Peak 3
Peak 4
Peak 5
Peak 6
Run 7
Run 6
Run 5
Run 4
Run 3
Run 1
2C4900-1
2C4907-2
Blank
RFU
Minutes

FIG. 30

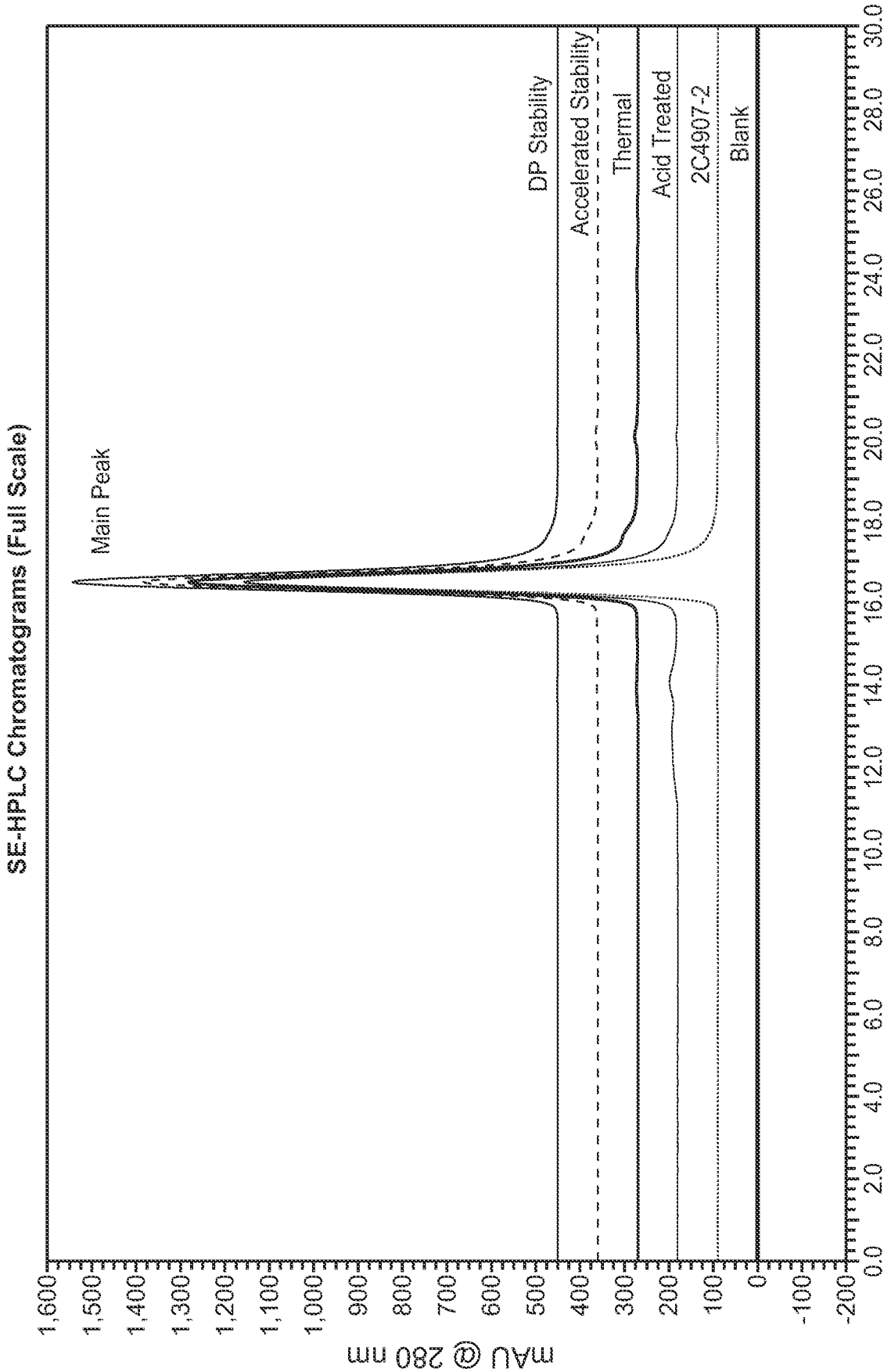

SE-HPLC Chromatograms (Full Scale)
Main Peak
DP Stability
Accelerated Stability
Thermal
Acid Treated
2C4907-2
Blank
mAU @ 280 nm
Minutes
1,600
1,500
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
-100
-200
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
18.0
20.0
22.0
24.0
26.0
28.0
30.0

FIG. 31A

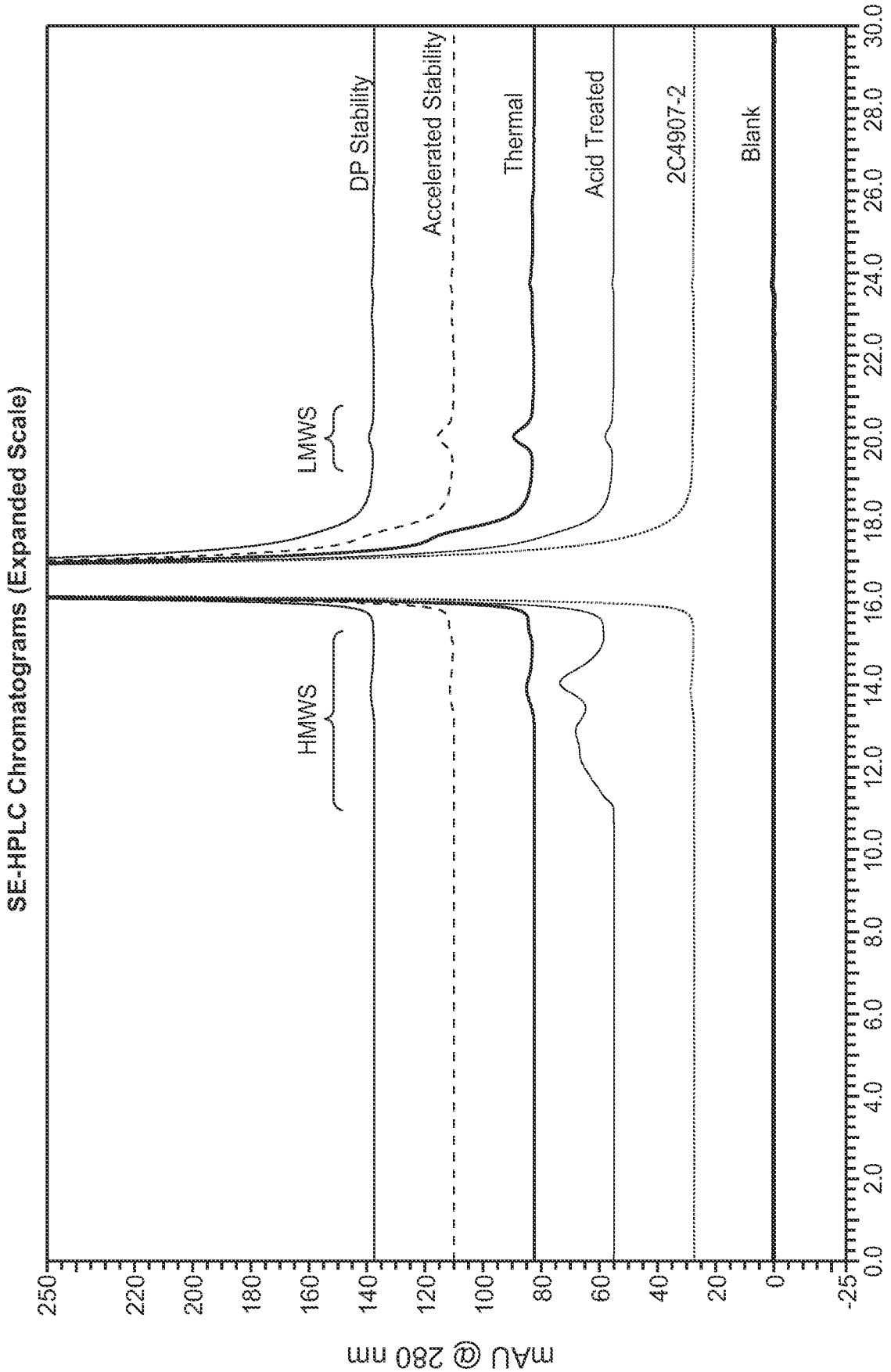

SE-HPLC Chromatograms (Expanded Scale)
mAU @ 280 nm
Minutes
HMWS
LMWS
DP Stability
Accelerated Stability
Thermal
Acid Treated
2C4907-2
Blank
250
220
200
180
160
140
120
100
80
60
40
20
0
-25
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
18.0
20.0
22.0
24.0
26.0
28.0
30.0

FIG. 31B

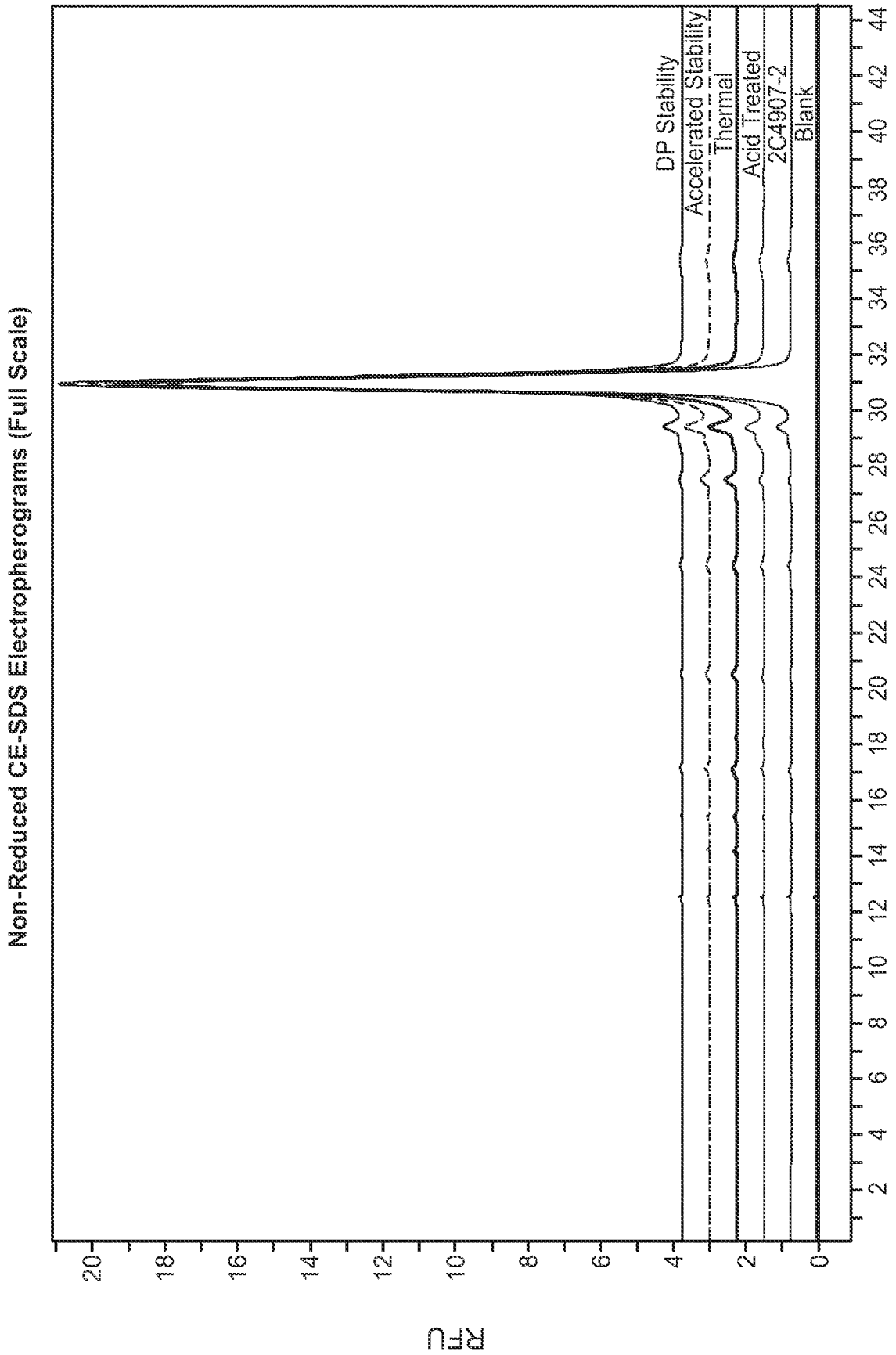

Non-Reduced CE-SDS Electropherograms (Full Scale)
DP Stability
Accelerated Stability
Thermal
Acid Treated
2C4907-2
Blank
RFU
Minutes
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44

FIG. 32A

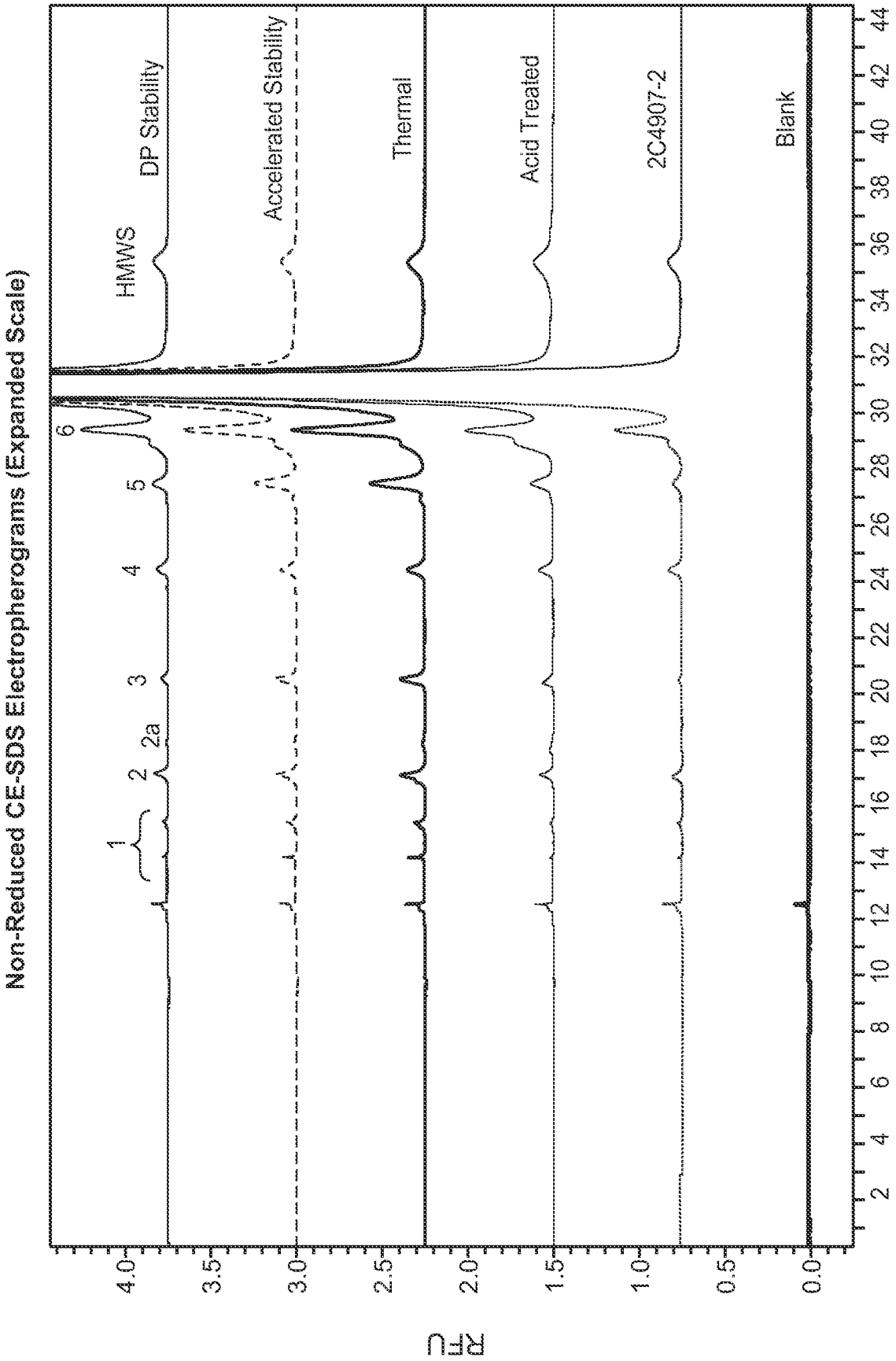

Non-Reduced CE-SDS Electropherograms (Expanded Scale)
HMWS
DP Stability
Accelerated Stability
Thermal
Acid Treated
2C4907-2
Blank
1
2
2a
3
4
5
6
RFU
Minutes
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44

FIG. 32B

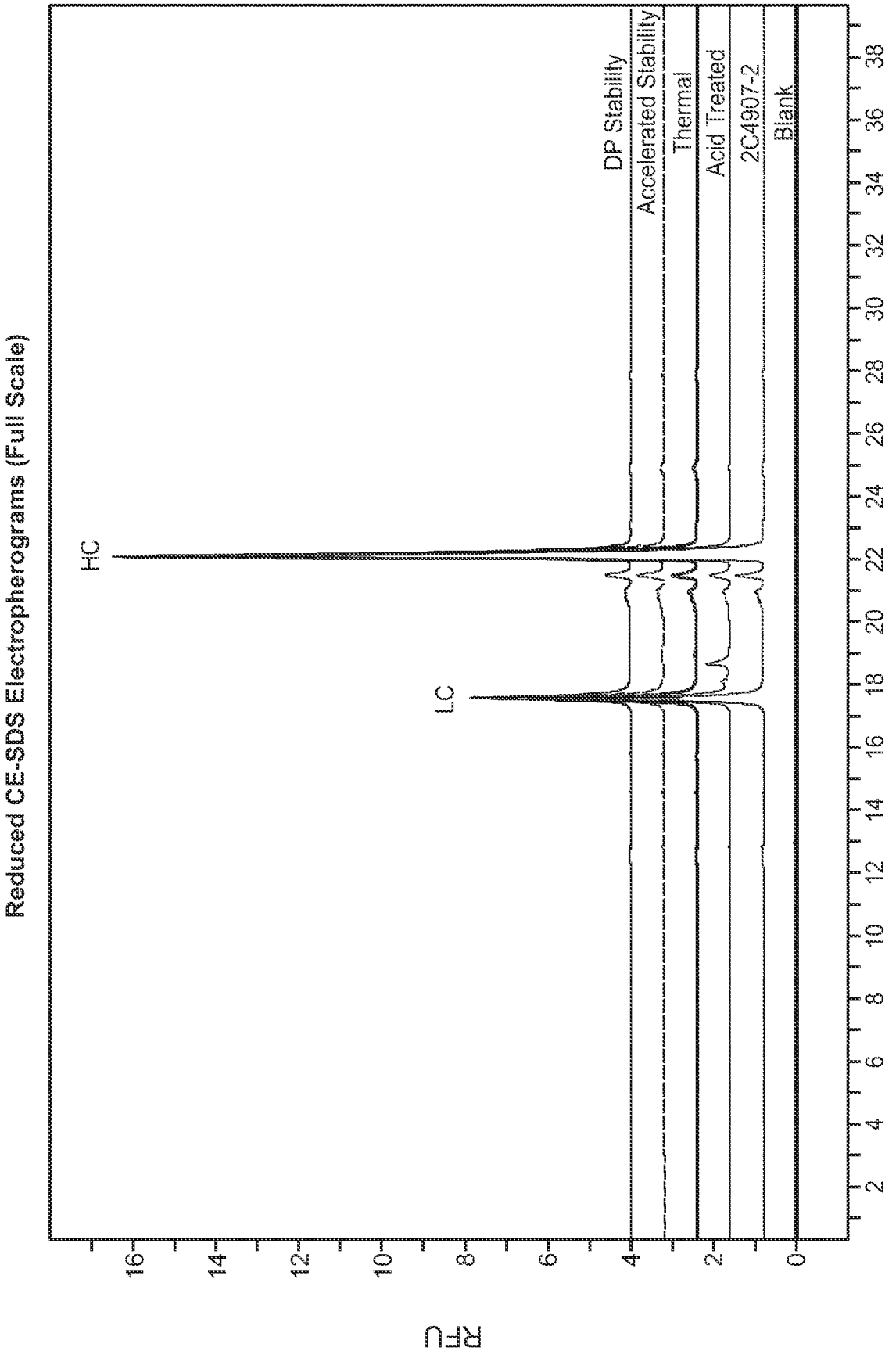

Reduced CE-SDS Electropherograms (Full Scale)
HC
LC
DP Stability
Accelerated Stability
Thermal
Acid Treated
2C4907-2
Blank
RFU
Minutes
0
2
4
6
8
10
12
14
16
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38

FIG. 33A

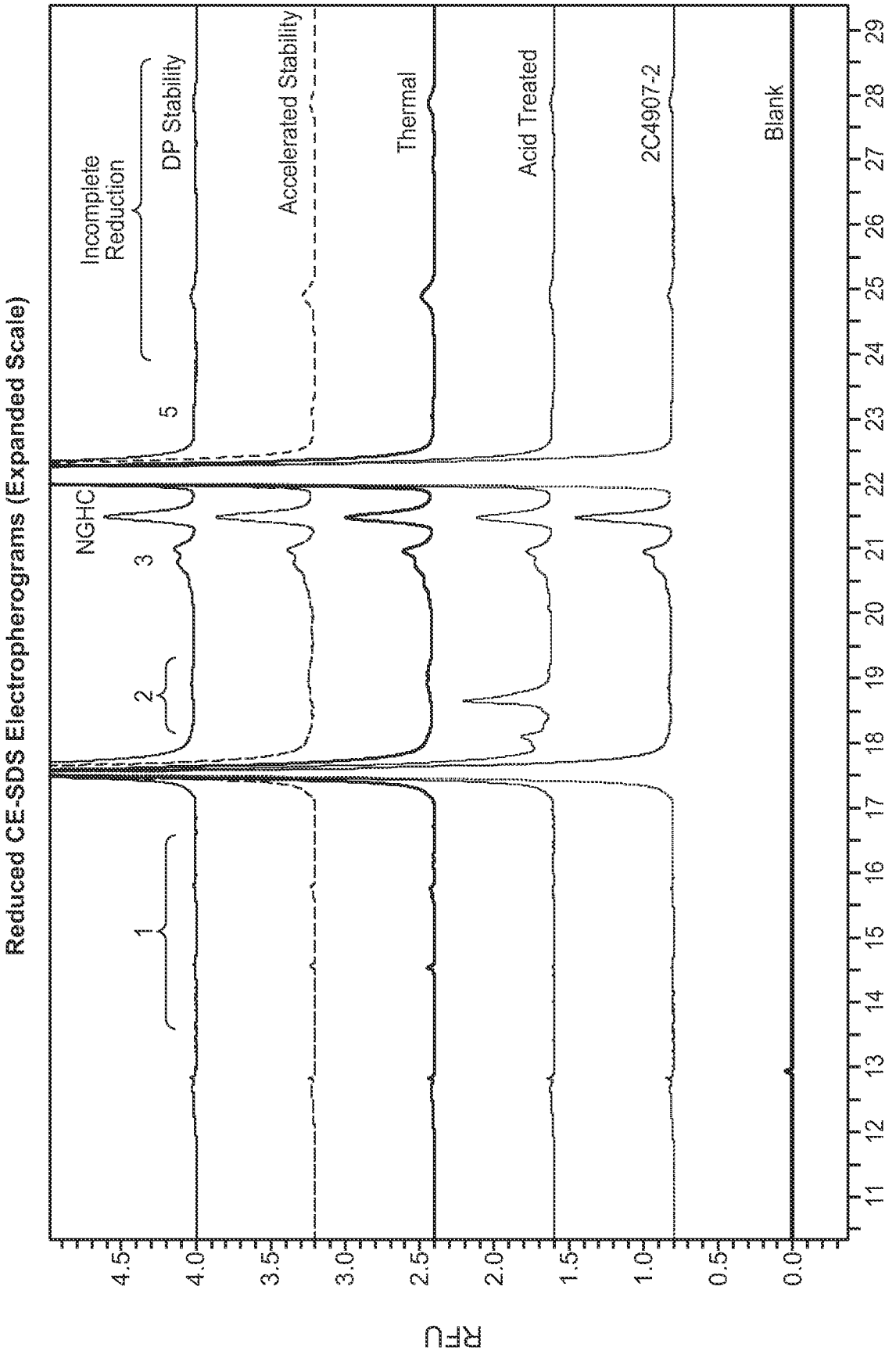

Reduced CE-SDS Electropherograms (Expanded Scale)
Incomplete Reduction
DP Stability
Accelerated Stability
Thermal
Acid Treated
2C4907-2
Blank
NGHC
1
2
3
5
RFU
Minutes

FIG. 33B

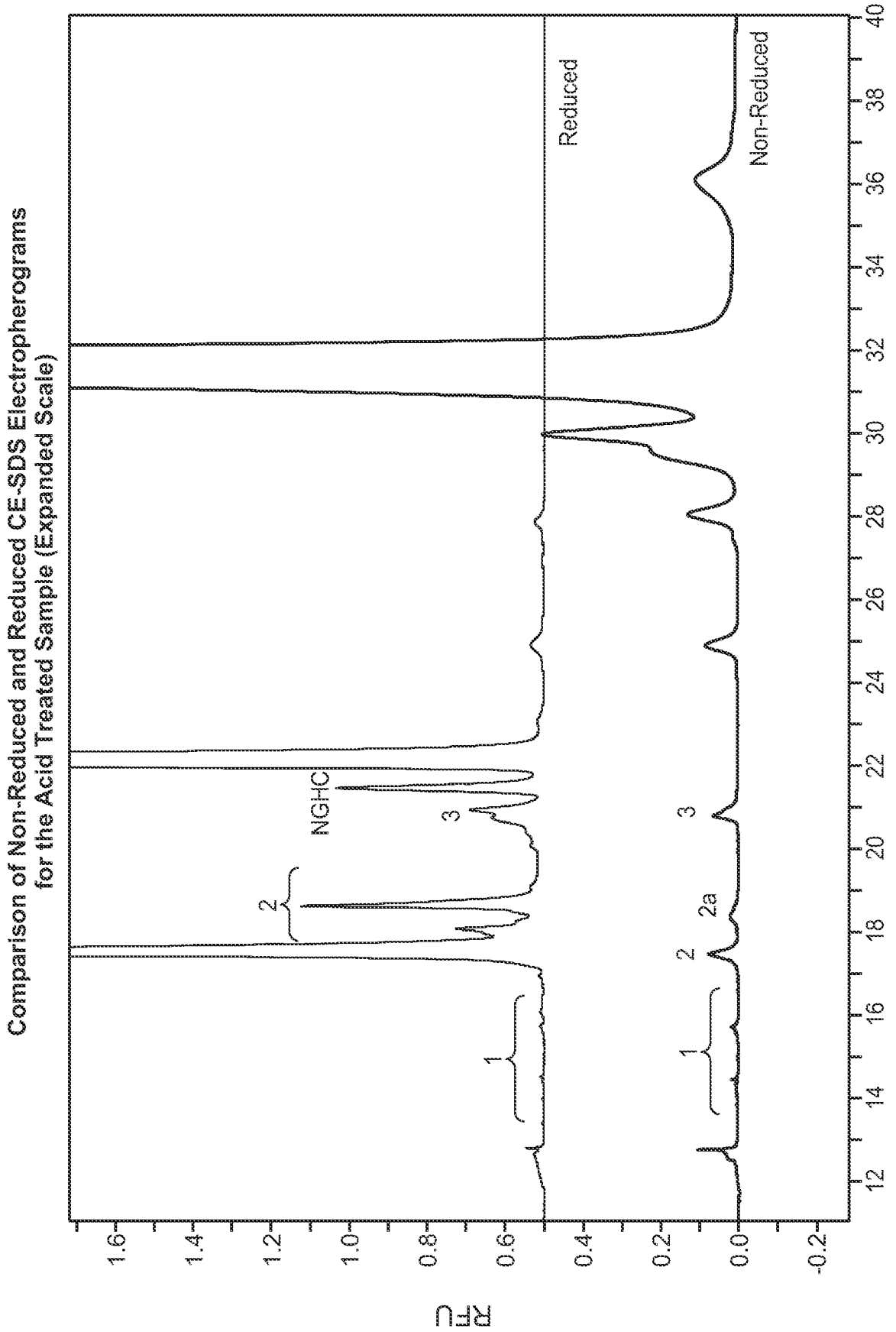

Comparison of Non-Reduced and Reduced CE-SDS Electropherograms
for the Acid Treated Sample (Expanded Scale)
Reduced
Non-Reduced
NGHC
1
2
3
2a
RFU
Minutes
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40

FIG. 34

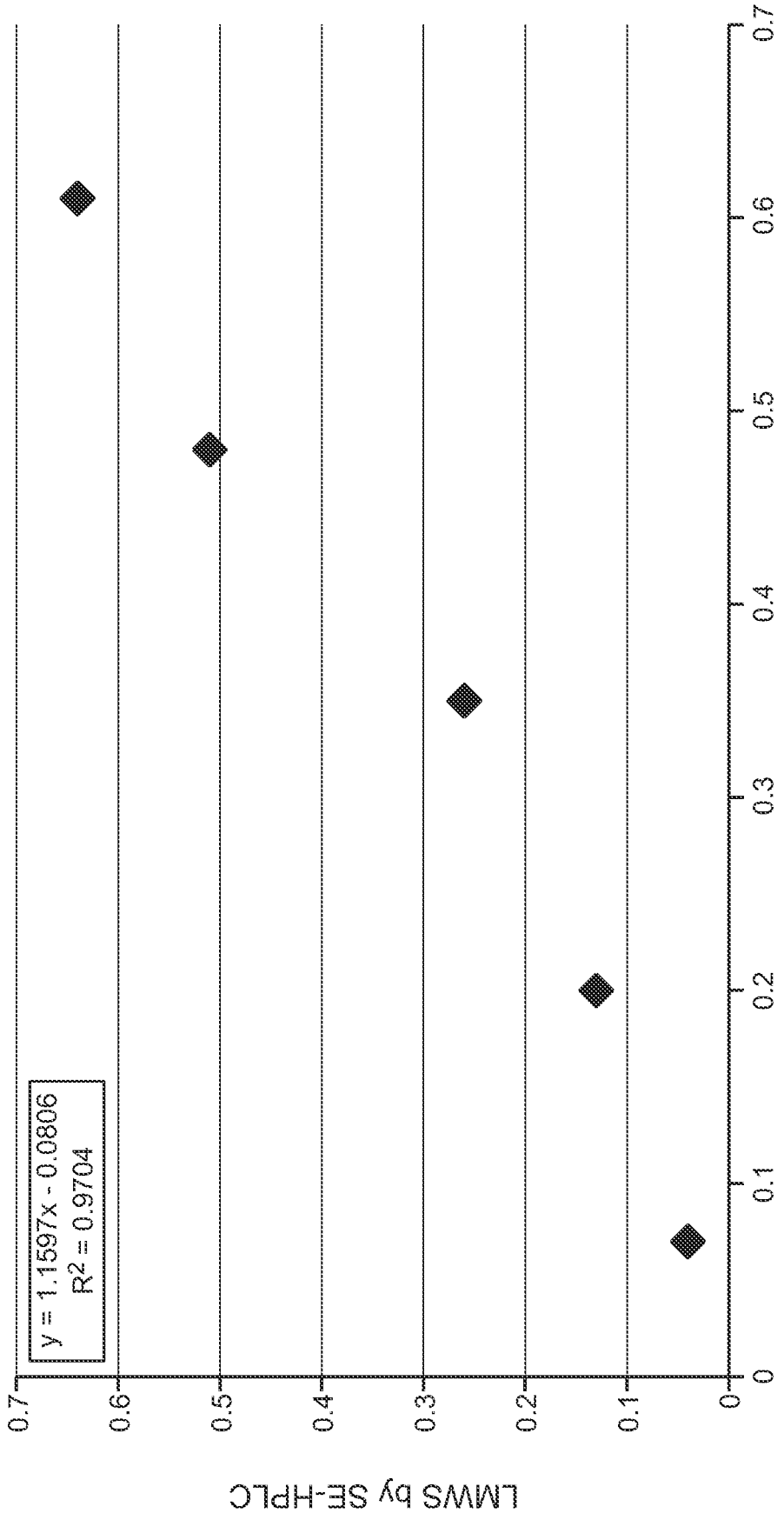

Correlation of Fab Quantitation between Non-Reduced CE-SDS and SE-HPLC
y = 1.1597x - 0.0806
R2 = 0.9704
LMWS by SE-HPLC
Peak 3 (Fab) by NR CE-SDS
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7

FIG. 35