FIG. 1

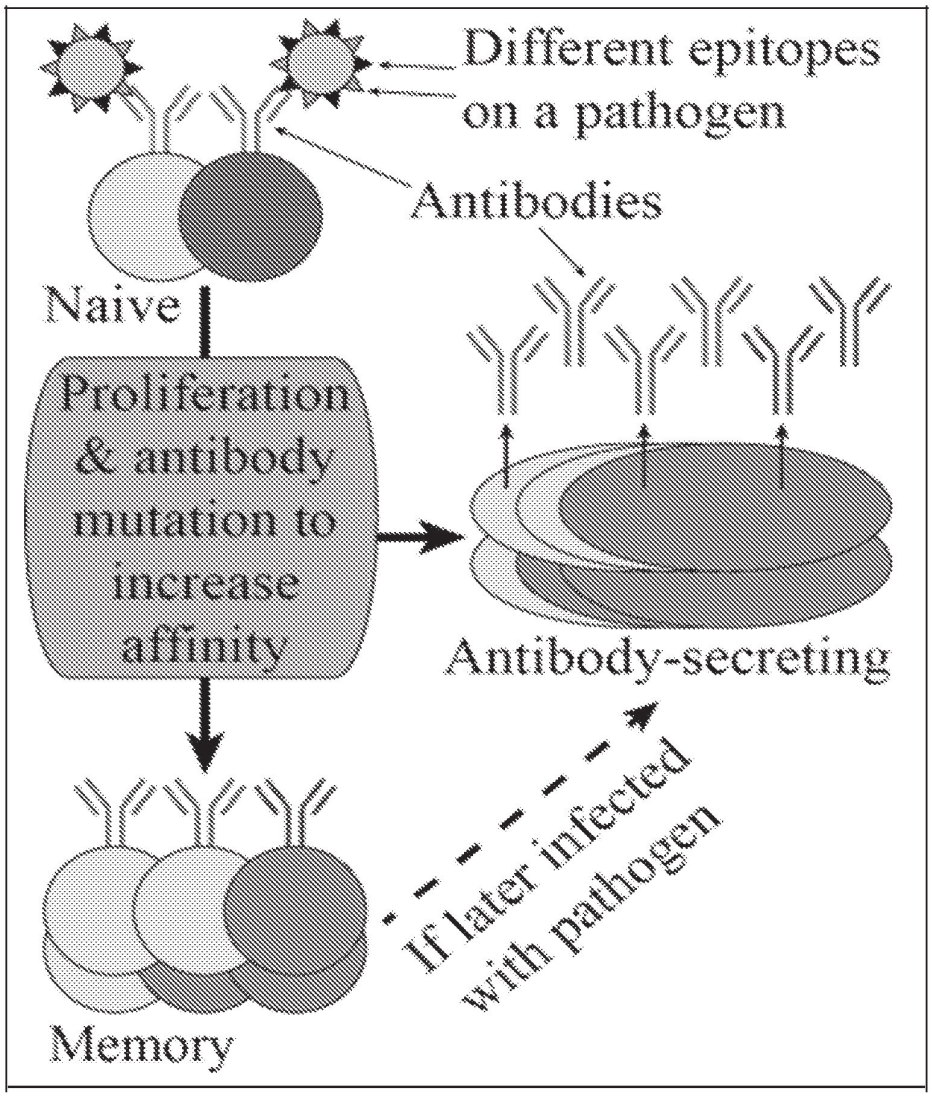

Different epitopes
on a pathogen
Antibodies
Naive
Proliferation
& antibody
mutation to
increase
affinity
Antibody-secreting
If later infected
with pathogen
Memory

FIG. 2A

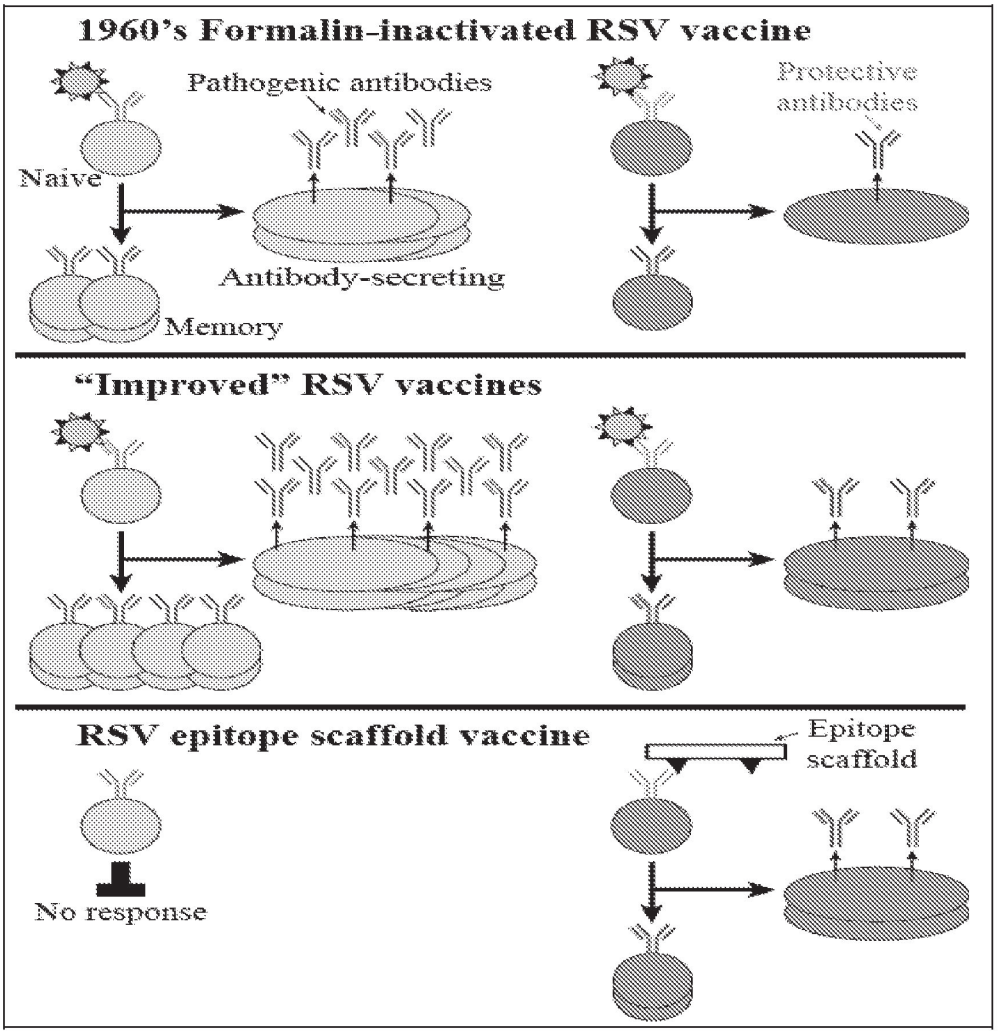


FIG. 2B

FIG. 2C

FIG. 3A

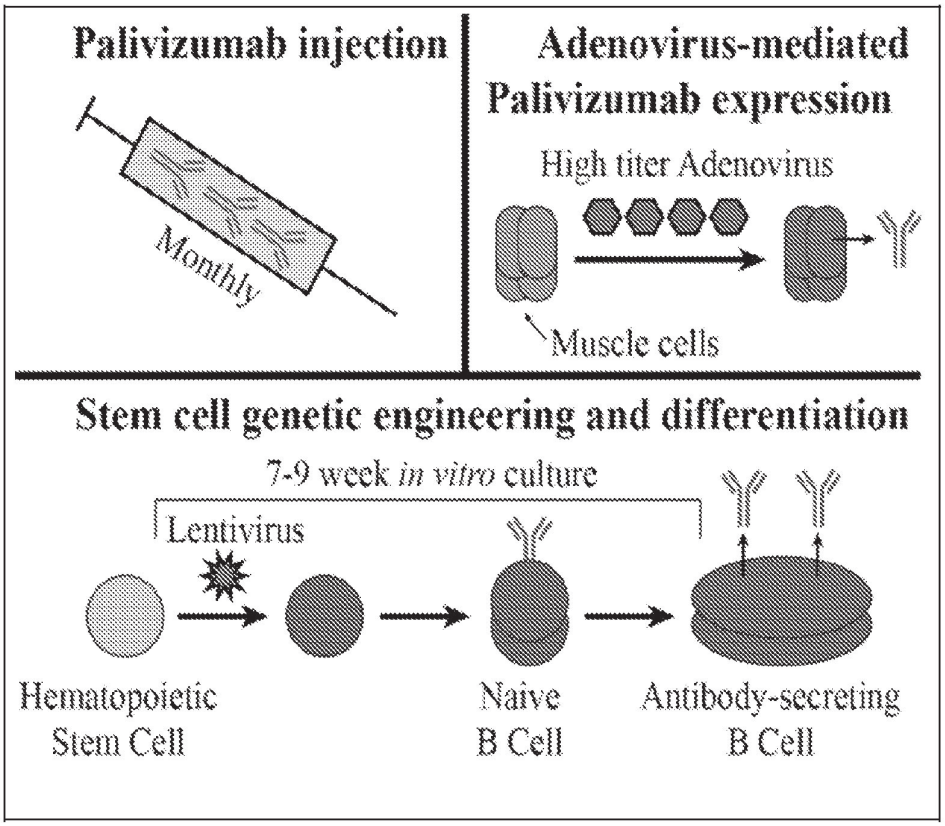


FIG. 3B

FIG. 3C

FIG. 4A

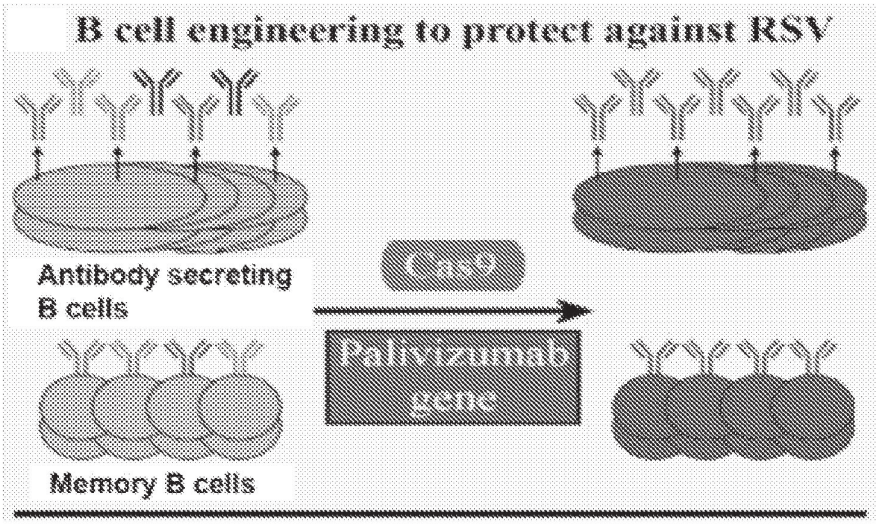

B cell engineering to protect against RSV
Antibody secreting B cells
Cas9
Palivizumab gene
Memory B cells

FIG. 4B

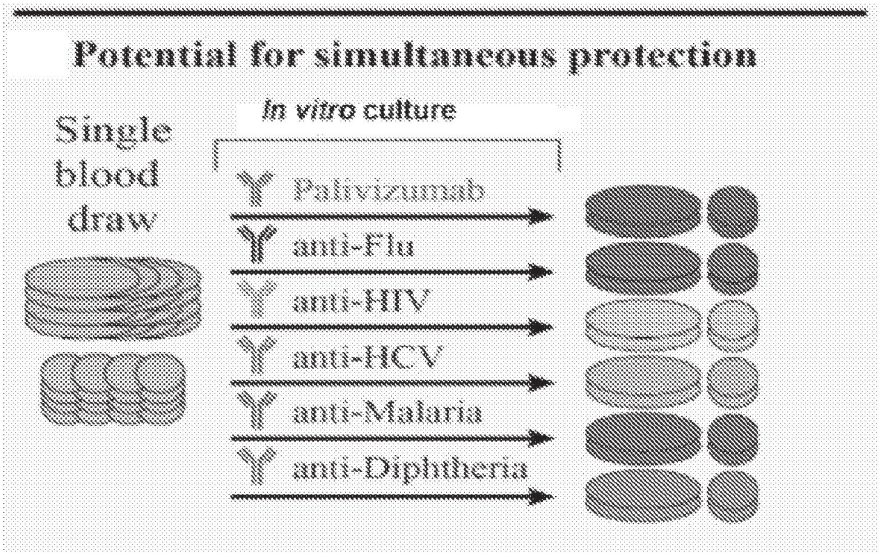

Potential for simultaneous protection
Single blood draw
In vitro culture
Palivizumab
anti-Flu
anti-HIV
anti-HCV
anti-Malaria
anti-Diphtheria

FIG. 5

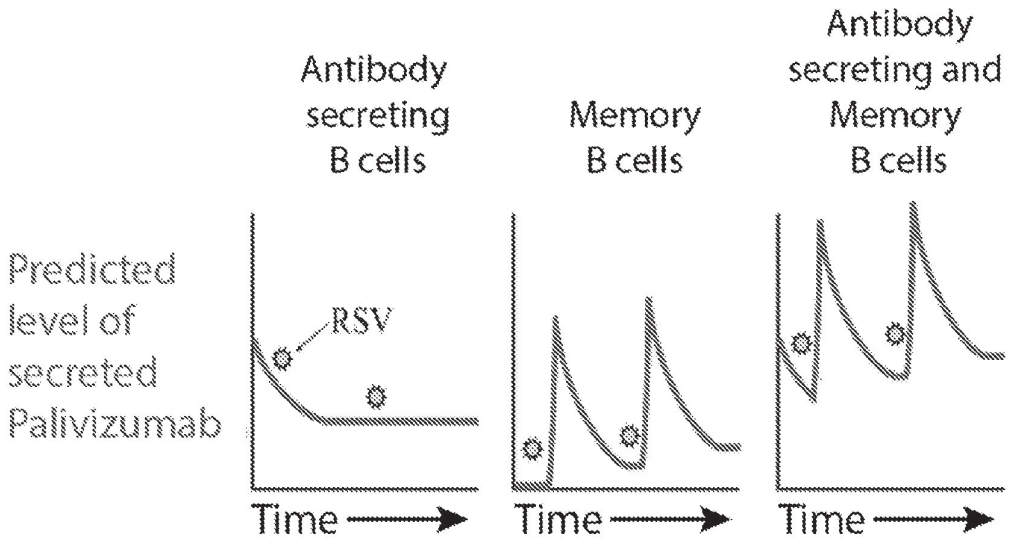

Antibody secreting B cells
Memory B cells
Antibody secreting and Memory B cells
Predicted level of secreted Palivizumab
RSV
Time
Time
Time

FIG. 6A

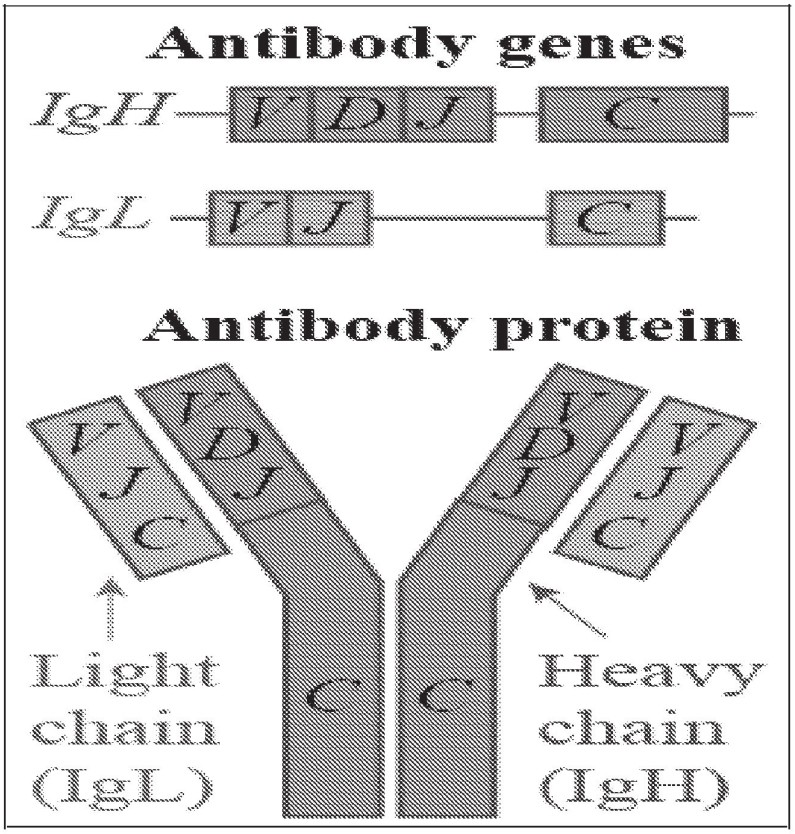

Antibody genes
IgH
V
D
J
C
IgL
V
J
C

FIG. 6B

Antibody protein
V
J
C
V
D
J
C
C
V
D
J
V
J
C
Light chain (IgL)
Heavy chain (IgH)

FIG. 7

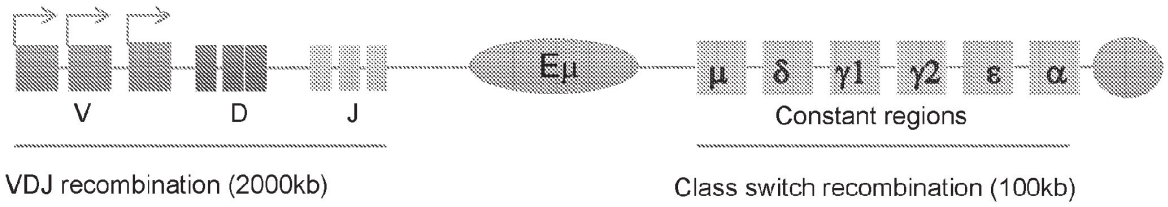


FIG. 8A

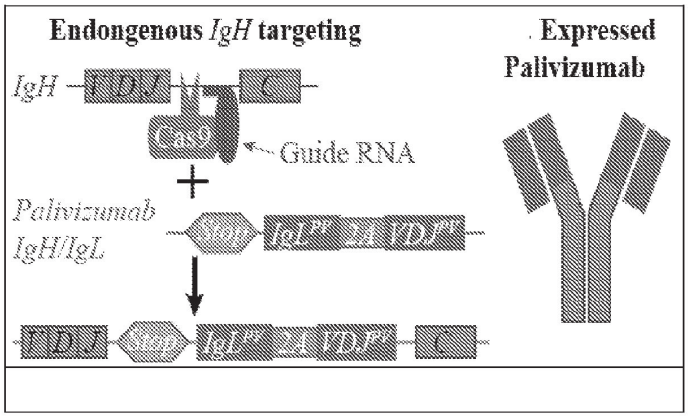


FIG. 8B

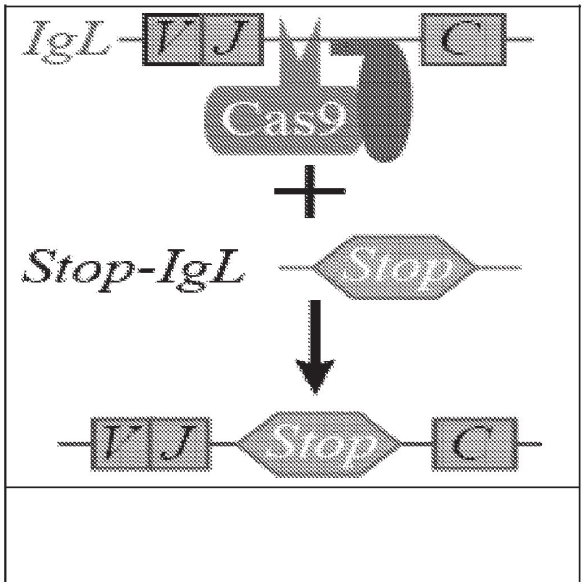


FIG. 9

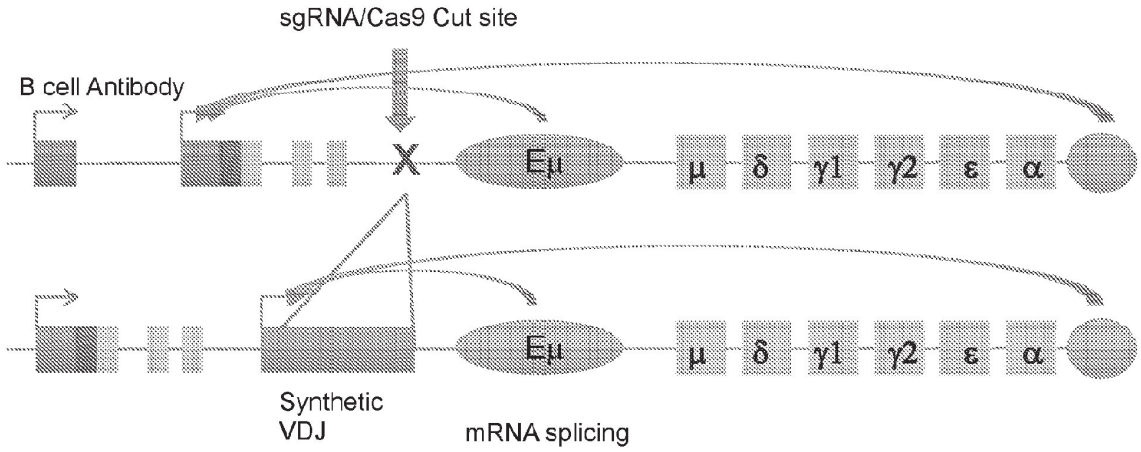

sgRNA/Cas9 Cut site
B cell Antibody
Eμ
μ
δ
γ1
γ2
ε
α
Synthetic
VDJ
mRNA splicing

FIG. 10

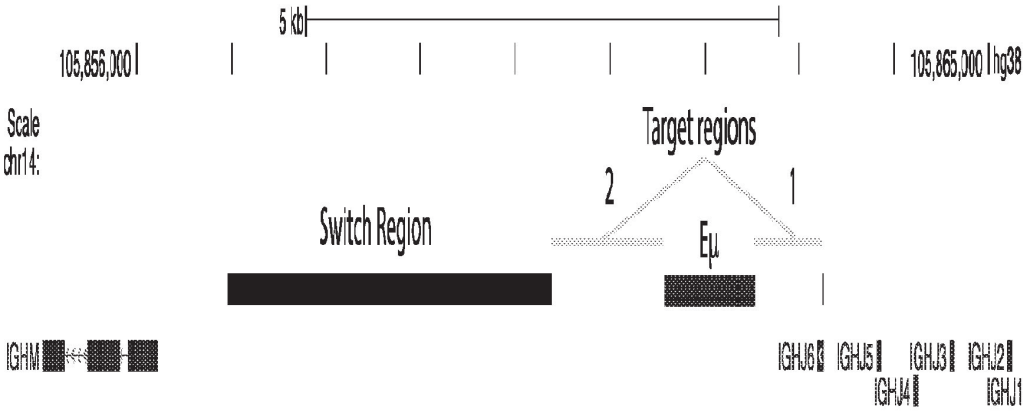

5 kb
105,856,000
105,865,000 hg38
Scale
chr14:
Target regions
2
1
Switch Region
Eμ
IGHM
IGHJ6
IGHJ5
IGHJ4
IGHJ3
IGHJ2
IGHJ1

FIG. 11A

Human Eμ intronic enhancer sequence:

GTAGTTGAAAAGTGGTCTTGAAAAATACTAAAATGAAGGCCACTCTATCAGAATATCAAAGT
GTTTCTCCTTAATCACAAAGAGAAAACGAGTTAACCTAAAAAGATTGTGAACACAGTCATTA
TGAAAATAATGCTCTGAGGTATCGAAAAAGTATTTGAGATTAATTATCACATGAAGGGATAA
CAAGCTAATTTAAAAAACTTTTTGAATACAGTCATAAACTCTCCCTAAGACTGTTTAATTTCT
TAAACATCTTACTTTAAAAATGAATGCAGTTTAGAAGTTGATATGCTGTTTGCACAAACTAGC
AGTTGATAAGCTAAGATTGGAAATGAAATTCAGATAGTTAAAAAAAGCCTTTTCAGTTTCGG
TCAGCCTCGCCTTATTTTAGAAACGCAAATTGTCCAGGTGTTGTTTTGCTCAGTAGAGCACT
TTCAGATCTGGGCCTGGGCAAAACCACCTCTTCACAACCAGAAGTGATAAATTTACCAATT
GTGTTTTTTTGCTTCCTAAAATAGACTCTCGCGGTGACCTGCTTCCTGCCACCTGCTGTGG
GTGCCGGAGACCCCCATGCAGCCATCTTGACTCTAATTCATCATCTGCTTCCAGCTTCGCT
CAATTAATTAAAAAAATAAACTTGATTTATGATGGTCAAAACGCAGTCCCGCATCGGGGCCG
ACAGCACTGTGCTAGTATTTCTTAGCTGAGCTTGCTTTGGCCTCAATTCCAGACACATATCA
CTCATGGGTGTTAATCAAATGATAAGAATTTCAAATACTTGGACAGTTAAAAAAATTAATATA
CTTGAAAATCTCTCACATTTTTAAGTCA (SEQ ID NO: 85)

Human Intronic Region 1 to Target for Genetic Construct Insertion:

CTACATGGACGTCTGGGGCAAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGCCA
CTCTAGGGCCTTTGTTTTCTGCTACTGCCTGTGGGGTTTCCTGAGCATTGCAGGTTGGTCC
TCGGGGCATGTTCCGAGGGGACCTGGGCGGACTGGCCAGGAGGGGATGGGCACTGGGG
TGCCTTGAGGATCTGGGAGCCTCTGTGGATTTTCCGATGCCTTTGGAAAATGGGACTCAG
GTTGGGTGCGTCTGATGGAGTAACTGAGCCTGGGGGCTTGGGGAGCCACATTTGGACGA
GATGCCTGAACAAACCAGGGGTCTTAGTGATGGCTGAGGAATGTGTCTCAGGAGCGGTGT
CTGTAGGACTGCAAGATCGCTGCACAGCAGCGAATCGTGAAATATTTTCTTTAGAATTATGA
GGTGCGCTGTGTGTCAACCTGCATCTTAAATTCTTTATTGGCTGGAAAGAGAACTGTCGGA
GTGGGTGAATCCAGCCAGGAGGGACGCGTAGCCCCGGTCTTGATGAGAGCAGGGTTGGG
GGCAGGGGTAGCCCAGAAACGGTGGCTGCCGTCCTGACAGGGGCTTAGGGAGGCTCCAG
GACCTCAGTGCCTTGAAGCTGGTTTCCATGAGAAAAGGATTGTTTATCTTAGGAGGCATGC
TTACTGTTAAAAGACAGGATATGTTTGAAGTGGCTTCTGA GAAAAATGGTTAAGAAAATTAT
(SEQ ID NO: 1)

FIG. 11B

Human_Region_1_gRNA_1	GGTCCTCGGGGCATGTTCCGAGG (SEQ ID NO: 5)
Human_Region_1_gRNA_2	GGGCATGTTCCGAGGGGACCTGG (SEQ ID NO: 6)
Human_Region_1_gRNA_3	GCATTGCAGGTTGGTCCTCGGGG (SEQ ID NO: 7)
Human_Region_1_gRNA_4	TCCTCGGGGCATGTTCCGAGGGG (SEQ ID NO: 8)
Human_Region_1_gRNA_5	GGCATGTTCCGAGGGGACCTGGG (SEQ ID NO: 9)
Human_Region_1_gRNA_6	GTCTCAGGAGCGGTGTCTGTAGG (SEQ ID NO: 10)
Human_Region_1_gRNA_7	AGCATTGCAGGTTGGTCCTCGGG (SEQ ID NO: 11)
Human_Region_1_gRNA_8	CCTGGGCGGACTGGCCAGGAGGG (SEQ ID NO: 12)
Human_Region_1_gRNA_9	ACTGGGGTGCCTTGAGGATCTGG (SEQ ID NO: 13)
Human_Region_1_gRNA_10	CCCCAGTGCCCATCCCCTCCTGG (SEQ ID NO: 14)
Human_Region_1_gRNA_11	CTAAGACCCCTGGTTTGTTCAGG (SEQ ID NO: 15)
Human_Region_1_gRNA_12	TGTGGATTTTCCGATGCCTTTGG (SEQ ID NO: 16)
Human_Region_1_gRNA_13	AGGACCAACCTGCAATGCTCAGG (SEQ ID NO: 17)
Human_Region_1_gRNA_14	CTCAGGTTGGGTGCGTCTGATGG (SEQ ID NO: 18)
Human_Region_1_gRNA_15	CCCTCCTGGCCAGTCCGCCCAGG (SEQ ID NO: 19)
Human_Region_1_gRNA_16	GGCCAGGAGGGGATGGGCACTGG (SEQ ID NO: 20)
Human_Region_1_gRNA_17	GAGATGCCTGAACAAACCAGGGG (SEQ ID NO: 21)
Human_Region_1_gRNA_18	AGGGGTCTTAGTGATGGCTGAGG (SEQ ID NO: 22)
Human_Region_1_gRNA_19	ATGGGCACTGGGGTGCCTTGAGG (SEQ ID NO: 23)
Human_Region_1_gRNA_20	TTCCGATGCCTTTGGAAAATGGG (SEQ ID NO: 24)

FIG. 11B (cont'd)

Human _1_gRNA_1	GGUCCUCGGGGCAUGUUCCG (SEQ ID NO: 290)
Human _1_gRNA_2	GGGCAUGUUCCGAGGGGACC (SEQ ID NO: 291)
Human _1_gRNA_3	GCAUUGCAGGUUGGUCCUCG (SEQ ID NO: 88)
Human _1_gRNA_4	UCCUCGGGGCAUGUUCCGAG (SEQ ID NO: 292)
Human _1_gRNA_5	GGCAUGUUCCGAGGGGACCU (SEQ ID NO: 293)
Human _1_gRNA_6	GUCUCAGGAGCGGUGUCUGU (SEQ ID NO: 89)
Human _1_gRNA_7	AGCAUUGCAGGUUGGUCCUC (SEQ ID NO: 294)
Human _1_gRNA_8	CCUGGGCGGACUGGCCAGGA (SEQ ID NO: 295)
Human _1_gRNA_9	ACUGGGGUGCCUUGAGGAUC (SEQ ID NO: 296)
Human _1_gRNA_10	CCCCAGUGCCCAUCCCCUCC (SEQ ID NO: 297)
Human _1_gRNA_11	CUAAGACCCCUGGUUUGUUC (SEQ ID NO: 298)
Human _1_gRNA_12	UGUGGAUUUUCCGAUGCCUU (SEQ ID NO: 299)
Human _1_gRNA_13	AGGACCAACCUGCAAUGCUC (SEQ ID NO: 300)
Human _1_gRNA_14	CUCAGGUUGGGUGCGUCUGA (SEQ ID NO: 301)
Human _1_gRNA_15	CCCUCCUGGCCAGUCCGCCC (SEQ ID NO: 302)
Human _1_gRNA_16	GGCCAGGAGGGGAUGGGCAC (SEQ ID NO: 303)
Human _1_gRNA_17	GAGAUGCCUGAACAAACCAG (SEQ ID NO: 304)
Human _1_gRNA_18	AGGGGUCUUAGUGAUGGCUG (SEQ ID NO: 305)
Human _1_gRNA_19	AUGGGCACUGGGGUGCCUUG (SEQ ID NO: 306)
Human _1_gRNA_20	UUCCGAUGCCUUUGGAAAAU (SEQ ID NO: 307)

FIG. 12A

Human Intronic Region 2 to Target for Genetic Construct Insertion

CTCACTTTAGGATAAGTTTTAGGTAAAATGTGCATCATTATCCTGAATTATTTCAGTTAAGCA
TGTTAGTTGGTGGCATAAGAGAAAACTCAATCAGATAGTGCTGAAGACAGGACTGTGGAGA
CACCTTAGAAGGACAGATTCTGTTCCGAATCACCGATGCGGCGTCAGCAGGACTGGCCTA
GCGGAGGCTCTGGGAGGGTGGCTGCCAGGCCCGGCCTGGGCTTTGGGTCTCCCCGGAC
TACCCAGA GCTGGGATGCGTGGCTTCTGCTGCCGGGCCGACTGGCTGCTCAGGCCCCA
GCCCTTGTTAATGGACTTGGAGGAATGATTCCATGCCAAAGCTTTGCAAGGCTCGCAGTGA
CCAGGCGCCCGACATGGTAAGAGACAGGCAGCCGCCGCTGCTGCATTTGCTTCTCTTAAA
ACTTTGTATTTGACGTCTTATTTCCACTAGAAGGGGAACTGGTCTTAATTGCTTGATGAAGA
GCAGGAGACTCATTTATGTGAGTCTTTTGAGTGACCATTGTCTGGGTCACTCCCATTTAACT
TTCCCTAAAGCCCATTTGAAGGAGAGGTCGCACGAGCTGCTCCACAACCTCTGAATGGGG
ATGGCATGGGTAATGATGCTTGAGAACATACCAAGCCCCACTGGCATCGCCCTTGTCTAAG
TCATTGACTGTAGGTCATCATCGCACCCTTGAAAGTAGCCCATGCCTTCCAAAGCGATTTAT
GGTAAATGGCAGAATTTTAAGTGGCAAATTCAGATAAAATGCATTTCTTGGTTGTTTCCAAT
GATGACTGTT ATCTAGAGGGAATTTAAAGGCAGGGGTTTACTGCAGACTCAGAAGGGAGG
GGATGCTCCGGGAAGGTGGAGGCTCTGAGCATCTCAATACCCTCCTCTTGGTGCAGAAGA
TATGCTGCCACTTCTAGAGCAAGGGGACCTGCTCATTTTTATCACAGCACAGGCTCCTAAA
TTCTTGGTCTCATTCTCAAGATGTTTTAATGACTTTAAAGCAGCAAAGAAATATTCCACCCA
GGTAGTGGAGGGTGGTAATGATTGGTAATGCTTTGGAACCAAAACCCAGGTGGCGCTGGG
GCAGGAC TGCAGGGAACTGGGGTATCAAGTAGAGGGAGACAAAAGATGGAAGCCAGC
CTGGCTGTGCAGGAACCCGGCAATGAGATGGCTTTAGCTGAGACAAGCAGGTCTGGTGG
GCTGACCATTTCTGGCCATGACAACTCCATCCAGCTTTCAGAAATGGACTCAGATGGGCAA
AACTGACCTAAGCTGACCTAGACTAAACAAGGCTGAAC (SEQ ID NO: 2)

FIG. 12B

Human_region2_gRNA_1	CTGACGCCGCATCGGTGATTCGG (SEQ ID NO: 25)
Human_region2_gRNA_2	TTAGACAAGGGCGATGCCAGTGG (SEQ ID NO: 26)
Human_region2_gRNA_3	CGTGCGACCTCTCCTTCAAATGG (SEQ ID NO: 27)
Human_region2_gRNA_4	AGCATATCTTCTGCACCAAGAGG (SEQ ID NO: 28)
Human_region2_gRNA_5	ATATTCCACCCAGGTAGTGGAGG (SEQ ID NO: 29)
Human_region2_gRNA_6	GTGCGACCTCTCCTTCAAATGGG (SEQ ID NO: 30)
Human_region2_gRNA_7	AGGTCCCCTTGCTCTAGAAGTGG (SEQ ID NO: 31)
Human_region2_gRNA_8	CTCTAGATAACAGTCATCATTGG (SEQ ID NO: 32)
Human_region2_gRNA_9	TTGTCTAAGTCATTGACTGTAGG (SEQ ID NO: 33)
Human_region2_gRNA_10	CCAAAGCGATTTATGGTAAATGG (SEQ ID NO: 34)
Human_region2_gRNA_11	TCTTTTGAGTGACCATTGTCTGG (SEQ ID NO: 35)
Human_region2_gRNA_12	CCATTTACCATAAATCGCTTTGG (SEQ ID NO: 36)
Human_region2_gRNA_13	AGGGCGATGCCAGTGGGGCTTGG (SEQ ID NO: 37)
Human_region2_gRNA_14	AGCTAAAGCCATCTCATTGCCGG (SEQ ID NO: 38)
Human_region2_gRNA_15	CCACAACCTCTGAATGGGGATGG (SEQ ID NO: 39)
Human_region2_gRNA_16	TTAATTGCTTGATGAAGAGCAGG (SEQ ID NO: 40)
Human_region2_gRNA_17	TAGACAAGGGCGATGCCAGTGGG (SEQ ID NO: 41)
Human_region2_gRNA_18	AAGCTGACCTAGACTAAACAAGG (SEQ ID NO: 42)
Human_region2_gRNA_19	GCAGGAACCCGGCAATGAGATGG (SEQ ID NO: 43)
Human_region2_gRNA_20	TCTGTTCCGAATCACCGATGCGG (SEQ ID NO: 44)

FIG. 12B (cont'd)

Human_2_gRNA_1	CUGACGCCGCAUCGGUGAUU (SEQ ID NO: 308)
Human_2_gRNA_2	UUAGACAAGGGCGAUGCCAG (SEQ ID NO: 309)
Human_2_gRNA_3	CGUGCGACCUCUCCUUCAAA (SEQ ID NO: 310)
Human_2_gRNA_4	AGCAUAUCUUCUGCACCAAG (SEQ ID NO: 311)
Human_2_gRNA_5	AUAUUCCACCCAGGUAGUGG (SEQ ID NO: 312)
Human_2_gRNA_6	GUGCGACCUCUCCUUCAAAU (SEQ ID NO: 313)
Human_2_gRNA_7	AGGUCCCCUUGCUCUAGAAG (SEQ ID NO: 314)
Human_2_gRNA_8	CUCUAGAUAACAGUCAUCAU (SEQ ID NO: 315)
Human_2_gRNA_9	UUGUCUAAGUCAUUGACUGU (SEQ ID NO: 316)
Human_2_gRNA_10	CCAAAGCGAUUUAUGGUAAA (SEQ ID NO: 317)
Human_2_gRNA_11	UCUUUUGAGUGACCAUUGUC (SEQ ID NO: 318)
Human_2_gRNA_12	CCAUUUACCAUAAAUCGCUU (SEQ ID NO: 319)
Human_2_gRNA_13	AGGGCGAUGCCAGUGGGGCU (SEQ ID NO: 320)
Human_2_gRNA_14	AGCUAAAGCCAUCUCAUUGC (SEQ ID NO: 321)
Human_2_gRNA_15	CCACAACCUCUGAAUGGGGA (SEQ ID NO: 322)
Human_2_gRNA_16	UUAAUUGCUUGAUGAAGAGC (SEQ ID NO: 323)
Human_2_gRNA_17	UAGACAAGGGCGAUGCCAGU (SEQ ID NO: 324)
Human_2_gRNA_18	AAGCUGACCUAGACUAAACA (SEQ ID NO: 325)
Human_2_gRNA_19	GCAGGAACCCGGCAAUGAGA (SEQ ID NO: 326)
Human_2_gRNA_20	UCUGUUCCGAAUCACCGAUG (SEQ ID NO: 327)

FIG. 13A

Mouse Eμ intronic enhancer sequence:

AGTCTAGATAATTGCATTCATTTAAAAAAAAAGTCTTTCTCCTAAAATGAATACTCAGAAAGT
GGTCTTGAAAAAGATTTGTGAAGCCGTTTTGACCAGAATGTCAAAGTCTTAATAGTAAGGCA
AAACAAACAACTAAAAAAGATCATGAACAAAGTCACTGTAAATGCTTCGGGTATTGGAAAAG
AATTGAATGGAGACCAATAATCAGAGGGAAGAATAATAGAGTAATTTTAAGAAGTTTTCTAA
ATATATTAGAAATTAAAGACACTAAAGTCCTTCAATTTCTTACATAACCTAATTTTGAAAATGA
ATTCTAAATACATTTTAGAAGTCGATAAACTTAAGTTTGGGGAAACTAGAACTACTCAAGCT
AAAATTAAAAGGTTGAACTCAATAAGTTAAAAGAGGACCTCTCCAGTTTCGGCTGAATCCTC
AACTTATTTTAGAAATGCAAATTACCCAGGTGGTGTTTTGCTCAGCCTGGACTTTCGGTTTG
GTGGGGCTGGACAGAGTGTTTCAAAACCACTTCTTCAAACCACAGCTACAAGTTTACCTAG
TGGTTTTATTTTCCCTTCCCCAAATAGCCTTGCCACATGACCTGCTTCCTGCCAGCTGCTGC
AGGTGTTCTGGTTCTGATCGGCCATCTTGACTCCAACTCAACATTGCTCAATTCATTTAAAA
ATATTTGAAACTTAATTTATTATTGTTAAAAGTCAGTTCTGAATAGGTTATGAGAGAGCCTCA
CTCCCATTCCTCGGTTAAACTTTAAGTAATATCAGTTCTACACAAACAAGACCTCAAACTGA
TTGACAAGAATTTTGGACATTTAAAAAAATGAGTACTTGAAAACCCTCTCACATTTTAAAGTC
ACAGTATTTAACTATTTTTCCTAGGAACCAACTTAAGAGTAAAAGCAACATCTTCTAATATTC
CATACACATACTTCTGTGTTCCTTTGAAAGCTGGACTTTTGCAGGCTCCACCAGACCTCTCT
AGACA (SEQ ID NO: 86)

Mouse Intronic Region 1 to Target for Genetic Construct Insertion:

GGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCAGGTAAGAATGGCCTCTCCAG
GTCTTTATTTTTAACCTTTGTTATGGAGTTTTCTGAGCATTGCAGACTAATCTTGGATATTTG
TCCCTGAGGGAGCCGGCTGAGAGAAGTTGGGAAATAAACTGTCTAGGGATCTCAGAGCCT
TTAGGACAGATTATCTCCACATCTTTGAAAAACTAAGAATCTGTGTGATGGTGTTGGTGGAG
TCCCTGGATGATGGGATAGGGACTTTGGAGGCTCATTTGAAGAAGATGCTAAAACAATCCT
ATGGCTGGAGGGATAGTTGGGGCTGTAGTTGGAGATTTTCAGTTTTTAGAATAAAAGTATTA
GTTGTGGAATATACTTCAGGACCACCTCTGTGACAGCATTTATACAGTATCCGATGCATAG
GGACAAAGAGTGGAGTGGGGCACTTTCTTTAGATTTGTGAGGAATGTTCCGCACTAGATTG
TTTAAAACTT CATTTGTTGGAAGGAGAGCTGTCTTAGTGATTGAGTCAAGGGAGAAAGGC
ATCTAGCCTCGGTCTCAAAAGGGTAGTTGCTG (SEQ ID NO: 3)

FIG. 13B

Mouse_Region_1_gRNA_1	CAACTACCCTTTTGAGACCGAGG (SEQ ID NO: 45)
Mouse_Region_1_gRNA_2	TTATACAGTATCCGATGCATAGG (SEQ ID NO: 46)
Mouse_Region_1_gRNA_3	TATACAGTATCCGATGCATAGGG (SEQ ID NO: 47)
Mouse_Region_1_gRNA_4	CATCTAGCCTCGGTCTCAAAAGG (SEQ ID NO: 48)
Mouse_Region_1_gRNA_5	CACTCTTTGTCCCTATGCATCGG (SEQ ID NO: 49)
Mouse_Region_1_gRNA_6	ATCTAGCCTCGGTCTCAAAAGGG (SEQ ID NO: 50)
Mouse_Region_1_gRNA_7	AAGTTTTAAACAATCTAGTGCGG (SEQ ID NO: 51)
Mouse_Region_1_gRNA_8	AAGATGCTAAAACAATCCTATGG (SEQ ID NO: 52)
Mouse_Region_1_gRNA_9	TGCTAAAACAATCCTATGGCTGG (SEQ ID NO: 53)
Mouse_Region_1_gRNA_10	AAGTCCCTATCCCATCATCCAGG (SEQ ID NO: 54)
Mouse_Region_1_gRNA_11	GGGAGAAAGGCATCTAGCCTCGG (SEQ ID NO: 55)
Mouse_Region_1_gRNA_12	TGAGCATTGCAGACTAATCTTGG (SEQ ID NO: 56)
Mouse_Region_1_gRNA_13	TTAGTTGTGGAATATACTTCAGG (SEQ ID NO: 57)
Mouse_Region_1_gRNA_14	TGGTGGAGTCCCTGGATGATGGG (SEQ ID NO: 58)
Mouse_Region_1_gRNA_15	GTGGAGATAATCTGTCCTAAAGG (SEQ ID NO: 59)
Mouse_Region_1_gRNA_16	AGTCCCTATCCCATCATCCAGGG (SEQ ID NO: 60)
Mouse_Region_1_gRNA_17	ATCTTGGATATTTGTCCCTGAGG (SEQ ID NO: 61)
Mouse_Region_1_gRNA_18	GGGATAGTTGGGGCTGTAGTTGG (SEQ ID NO: 62)
Mouse_Region_1_gRNA_19	CAGGTAAGAATGGCCTCTCCAGG (SEQ ID NO: 63)
Mouse_Region_1_gRNA_20	TCTCTCAGCCGGCTCCCTCAGGG (SEQ ID NO: 64)

FIG. 13B (cont'd)

Mouse_1_gRNA_1	CAACUACCCUUUUGAGACCG (SEQ ID NO: 328)
Mouse_1_gRNA_2	UUAUACAGUAUCCGAUGCAU (SEQ ID NO: 87)
Mouse_1_gRNA_3	UAUACAGUAUCCGAUGCAUA (SEQ ID NO: 329)
Mouse_1_gRNA_4	CAUCUAGCCUCGGUCUCAAA (SEQ ID NO: 330)
Mouse_1_gRNA_5	CACUCUUUGUCCCUAUGCAU (SEQ ID NO: 331)
Mouse_1_gRNA_6	AUCUAGCCUCGGUCUCAAAA (SEQ ID NO: 332)
Mouse_1_gRNA_7	AAGUUUUAAACAAUCUAGUG (SEQ ID NO: 333)
Mouse_1_gRNA_8	AAGAUGCUAAAACAAUCCUA (SEQ ID NO: 334)
Mouse_1_gRNA_9	UGCUAAAACAAUCCUAUGGC (SEQ ID NO: 335)
Mouse_1_gRNA_10	AAGUCCCUAUCCCAUCAUCC (SEQ ID NO: 336)
Mouse_1_gRNA_11	GGGAGAAAGGCAUCUAGCCU (SEQ ID NO: 337)
Mouse_1_gRNA_12	UGAGCAUUGCAGACUAAUCU (SEQ ID NO: 338)
Mouse_1_gRNA_13	UUAGUUGUGGAAUAUACUUC (SEQ ID NO: 339)
Mouse_1_gRNA_14	UGGUGGAGUCCCUGGAUGAU (SEQ ID NO: 340)
Mouse_1_gRNA_15	GUGGAGAUAAUCUGUCCUAA (SEQ ID NO: 341)
Mouse_1_gRNA_16	AGUCCCUAUCCCAUCAUCCA (SEQ ID NO: 342)
Mouse_1_gRNA_17	AUCUUGGAUAUUUGUCCCUG (SEQ ID NO: 343)
Mouse_1_gRNA_18	GGGAUAGUUGGGGCUGUAGU (SEQ ID NO: 344)
Mouse_1_gRNA_19	CAGGUAAGAAUGGCCUCUCC (SEQ ID NO: 345)
Mouse_1_gRNA_20	UCUCUCAGCCGGCUCCCUCA (SEQ ID NO: 346)

FIG. 14A

Mouse Intronic Region 2 to Target for Genetic Construct Insertion

TTATTTCAGTTGAACATGCTGGTTGGTGGTTGAGAGGACACTCAGTCAGTCAGTGACGTGA
AGGGCTTCTAAGCCAGTCCACATGCTCTGTGTGAACTCCCTCTGGCCCTGCTTATTGTTGA
ATGGGCCAAAGGTCTGAGACCAGGCTGCTGCTGGGTAGGCCTGGACTTTGGGTCTCCCAC
CCAGACCTGGGAATGTATGGTTGTGGCTTCTGCCACCCATCCACCTGGCTGCTCATGGAC
CAGCCAGCCTCGGTGGCTTTGAAGGAACAATTCCACACAAAGACTCTGGACCTCTCCGAA
ACCAGGCACCGCAAATGGTAAGCCAGAGGCAGCCACAGCTGTGGCTGCTGCTCTTAAAGC
TTGTAAACTGTTTCTGCTTAAGAGGGACTGAGTCTTCAGTCATTGCTTTAGGGGGAGAAAG
AGACATTTGTGTGTCTTTTGAGTACCGTTGTCTGGGTCACTCACATTTAACTTTCCTTGAAA
AACTAGTAAAAGAAAAATGTTGCCTGTTAACCAATAATCATAGAGCTCATGGTACTTTGAGG
AAATCTTAGAAAGCGTGTATACAATTGTCTGGAATTATTTCAGTTAAGTGTATTAGTTGAGGT
ACTGATGCTGTCTCTACTTCAGTTATACATGTGGGTTTGAATTTTGAATCTATTCTGGCTCTT
CTTAAGCAGAAAATTTAGATAAAATGGATACCTCAGTGGTTTTTAATGGTGGGTTTAATATA
GAAGGAATTTAAATTGGAAGCTAATTTAGAATCAGTAAGGAGGGACCCAGGCTAAGAAGGC
AATCCTGGGATTCTGGAAGAAAAGATGTTTTTAGTTTTTATAGAAAACACTACTACATTCTTG
ATCTACAACTCAATGTGGTTTAATGAATTTGAAGTTGCCAGTAAATGTACTTCCTGGTTGTTA
AAGAATGGTATCAAAGGACAGTGCTTAGATCCGAGGTGAGTGTGAGAGGACAGGGGCTGG
GGTATGGATACGCAGAAGGAAGGCCACAGCTGTACAGAATTGAGAAAGAATAGAGACCTG
CAGTTGAGGCCAGCAGGTCGGCTGGACTAACTCTCCAGCCACAGTAATGACCCAGACAGA
GAAAGCCAGACTCATAAAGCTTGCTGAGCAAAATTAAGGGAACAAGGTTGAGAGCCCTAGT
AAGCGAGGCTCTAAAAAGCACAGCTGAGCTGAGATGGGTGGGCTTCTCTGAGTGCTTCTA
AAATGCGCTAAACTGAGGTGATTACTCTGAGGTAAGCAAAGCTGGGCTTGAGCCAAAATGA
AGTAGACTGTAATGAACTGGAATGAGCTGGGCCGCTAAGCTAAACTAGGCTGGCTTAACC
GAGATGAGCCAAACTGGAATGAACTTCATTAATCTAGGTTGAATAGAGCTAAACTCTACTGC
CTACACTGGACTGTTCTGAGCTGAGATGAGCTGGGGTGAGCTCAGCTATGCTACGCTGTG
TTGGGGTGAGCTGATCTGAAATGAGATACTCTGGAGTAGCTGAGATGGGGTGAGATGGGG
TG (SEQ ID NO: 4)

FIG. 14B

MOUSE_REGION_2_gRNA__1	CCGAAACCAGGCACCGCAAATGG (SEQ ID NO: 65)
MOUSE_REGION_2_gRNA__2	CACCGCAAATGGTAAGCCAGAGG (SEQ ID NO: 66)
MOUSE_REGION_2_gRNA__3	GGCTTACCATTTGCGGTGCCTGG (SEQ ID NO: 67)
MOUSE_REGION_2_gRNA__4	TGCGGTGCCTGGTTTCGGAGAGG (SEQ ID NO: 68)
MOUSE_REGION_2_gRNA__5	CAGCTATGCTACGCTGTGTTGGG (SEQ ID NO: 69)
MOUSE_REGION_2_gRNA__6	AAGGACAGTGCTTAGATCCGAGG (SEQ ID NO: 70)
MOUSE_REGION_2_gRNA__7	TCAGTCAGTCAGTGACGTGAAGG (SEQ ID NO: 71)
MOUSE_REGION_2_gRNA__8	CATGCTGGTTGGTGGTTGAGAGG (SEQ ID NO: 72)
MOUSE_REGION_2_gRNA__9	TCTTTTGAGTACCGTTGTCTGGG (SEQ ID NO: 73)
MOUSE_REGION_2_gRNA__10	TGGCCCATTCAACAATAAGCAGG (SEQ ID NO: 74)
MOUSE_REGION_2_gRNA__11	CTGGGCCGCTAAGCTAAACTAGG (SEQ ID NO: 75)
MOUSE_REGION_2_gRNA__12	GCCAGCCTAGTTTAGCTTAGCGG (SEQ ID NO: 76)
MOUSE_REGION_2_gRNA__13	TGAAGTAGACTGTAATGAACTGG (SEQ ID NO: 77)
MOUSE_REGION_2_gRNA__14	GACCTGGGAATGTATGGTTGTGG (SEQ ID NO: 78)
MOUSE_REGION_2_gRNA__15	GGTATGGATACGCAGAAGGAAGG (SEQ ID NO: 79)
MOUSE_REGION_2_gRNA__16	GTTGAGAGCCCTAGTAAGCGAGG (SEQ ID NO: 80)
MOUSE_REGION_2_gRNA__17	GCCGCTAAGCTAAACTAGGCTGG (SEQ ID NO: 81)
MOUSE_REGION_2_gRNA__18	TCAGCTATGCTACGCTGTGTTGG (SEQ ID NO: 82)
MOUSE_REGION_2_gRNA__19	TTTTAGAGCCTCGCTTACTAGGG (SEQ ID NO: 83)
MOUSE_REGION_2_gRNA__20	CTCTATGATTATTGGTTAACAGG (SEQ ID NO: 84)

FIG. 14B (cont'd)

MOUSE_2_gRNA__1	CCGAAACCAGGCACCGCAAA (SEQ ID NO: 347)
MOUSE_2_gRNA__2	CACCGCAAAUGGUAAGCCAG (SEQ ID NO: 348)
MOUSE_2_gRNA__3	GGCUUACCAUUUGCGGUGCC (SEQ ID NO: 349)
MOUSE_2_gRNA__4	UGCGGUGCCUGGUUUCGGAG (SEQ ID NO: 350)
MOUSE_2_gRNA__5	CAGCUAUGCUACGCUGUGUU (SEQ ID NO: 351)
MOUSE_2_gRNA__6	AAGGACAGUGCUUAGAUCCG (SEQ ID NO: 352)
MOUSE_2_gRNA__7	UCAGUCAGUCAGUGACGUGA (SEQ ID NO: 353)
MOUSE_2_gRNA__8	CAUGCUGGUUGGUGGUUGAG (SEQ ID NO: 354)
MOUSE_2_gRNA__9	UCUUUUGAGUACCGUUGUCU (SEQ ID NO: 355)
MOUSE_2_gRNA__10	UGGCCCAUUCAACAAUAAGC (SEQ ID NO: 356)
MOUSE_2_gRNA__11	CUGGGCCGCUAAGCUAAACU (SEQ ID NO: 357)
MOUSE_2_gRNA__12	GCCAGCCUAGUUUAGCUUAG (SEQ ID NO: 358)
MOUSE_2_gRNA__13	UGAAGUAGACUGUAAUGAAC (SEQ ID NO: 359)
MOUSE_2_gRNA__14	GACCUGGGAAUGUAUGGUUG (SEQ ID NO: 360)
MOUSE_2_gRNA__15	GGUAUGGAUACGCAGAAGGA (SEQ ID NO: 361)
MOUSE_2_gRNA__16	GUUGAGAGCCCUAGUAAGCG (SEQ ID NO: 362)
MOUSE_2_gRNA__17	GCCGCUAAGCUAAACUAGGC (SEQ ID NO: 363)
MOUSE_2_gRNA__18	UCAGCUAUGCUACGCUGUGU (SEQ ID NO: 364)
MOUSE_2_gRNA__19	UUUUAGAGCCUCGCUUACUA (SEQ ID NO: 365)
MOUSE_2_gRNA__20	CUCUAUGAUUAUUGGUUAAC (SEQ ID NO: 366)

FIG. 15A

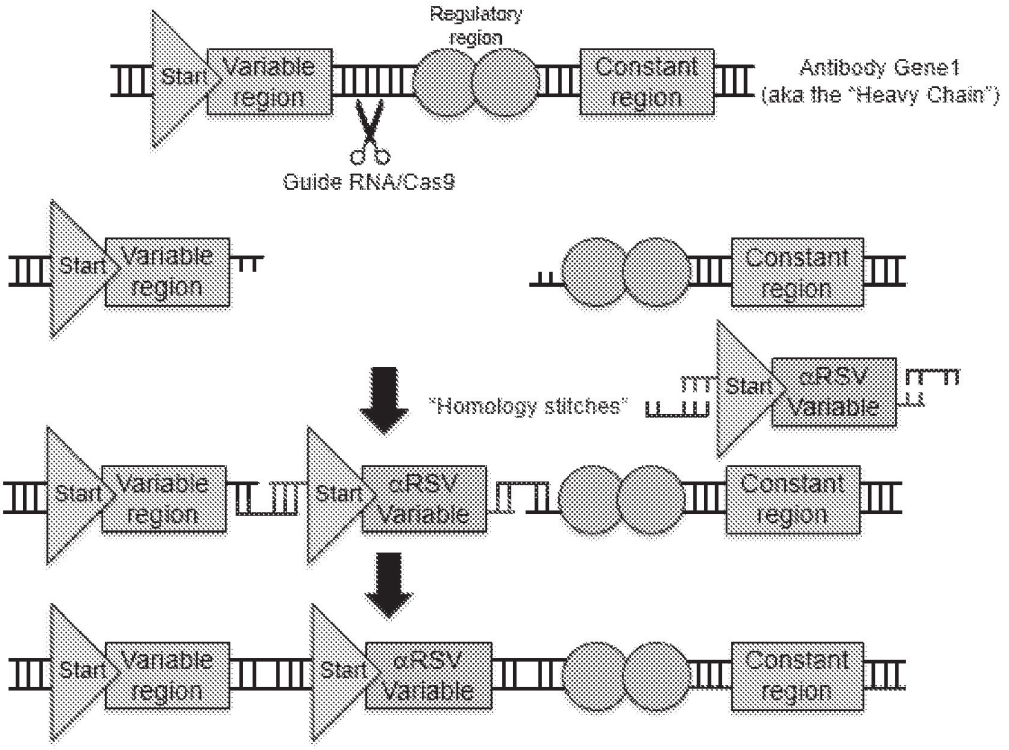


FIG. 15B

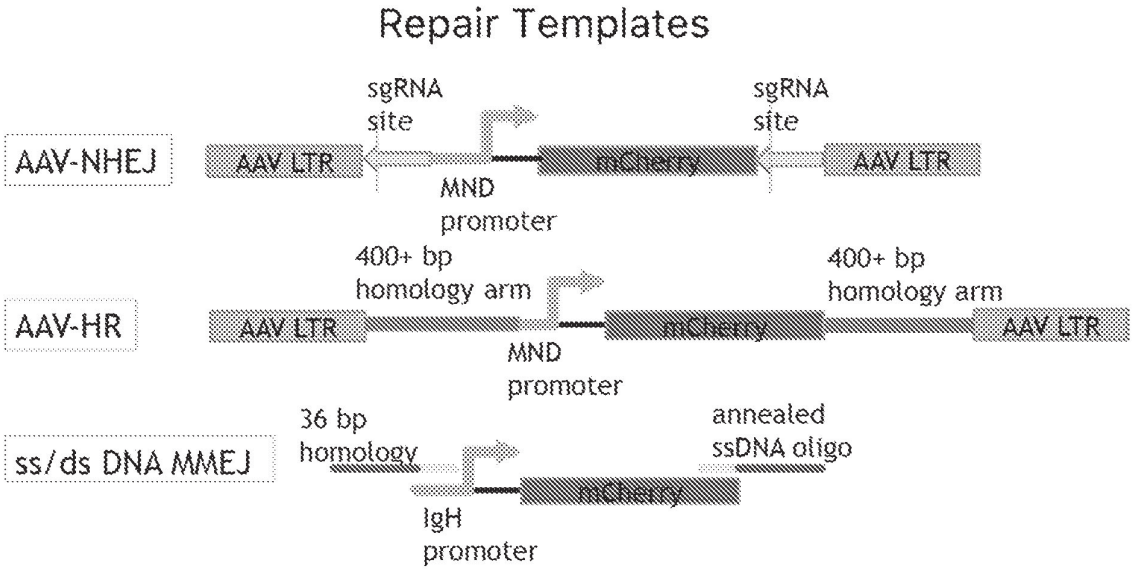


FIG. 16

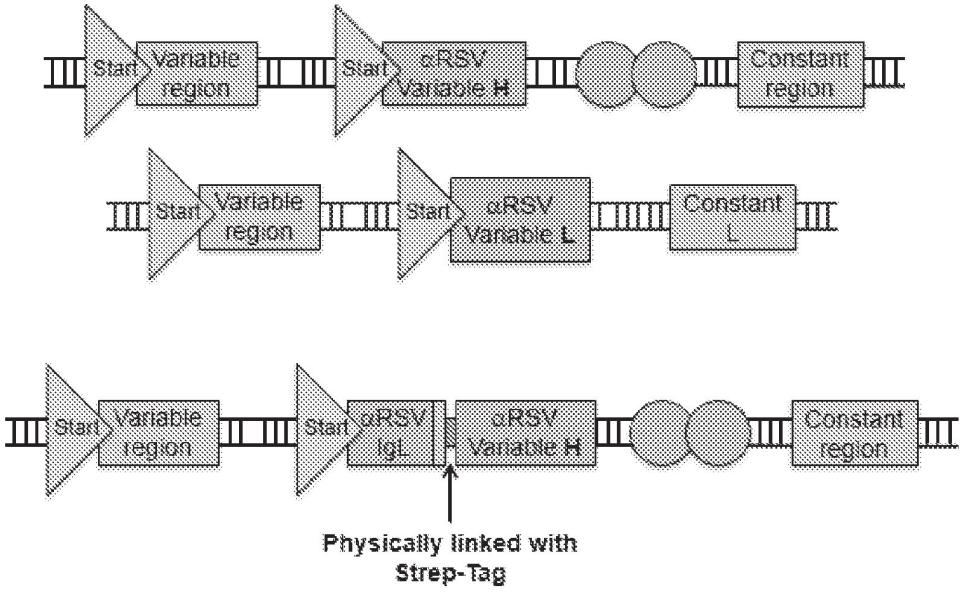

Start
Variable region
Start
αRSV Variable H
Constant region
Start
Variable region
Start
αRSV Variable L
Constant L
Start
Variable region
Start
αRSV IgL
αRSV Variable H
Constant region
Physically linked with Strep-Tag

FIG. 17

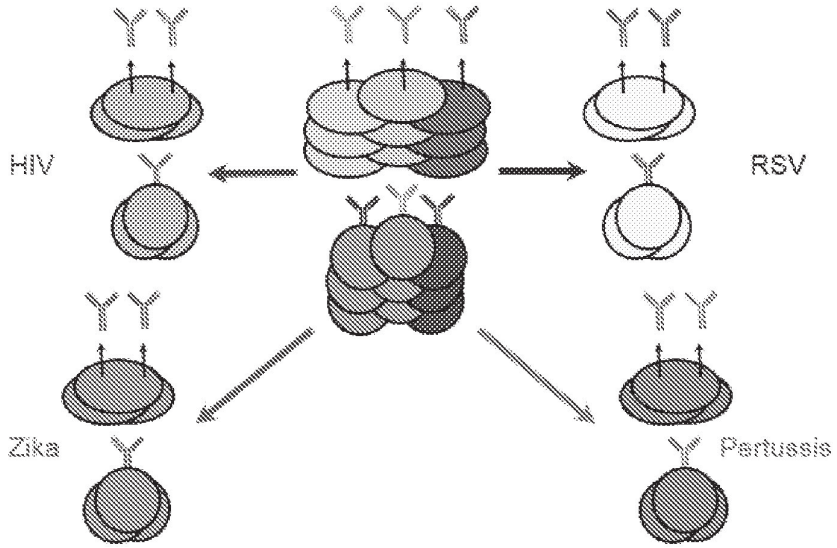

HIV
RSV
Zika
Pertussis

FIG. 18A FIG. 18B FIG. 18C

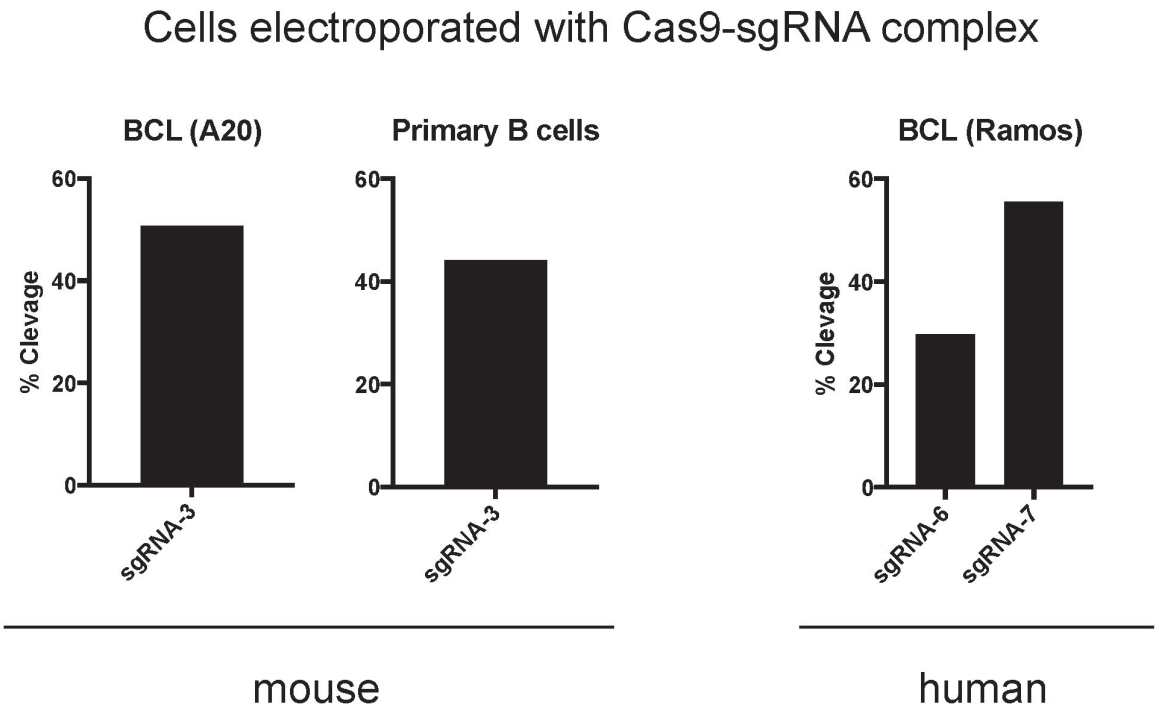


FIG. 19

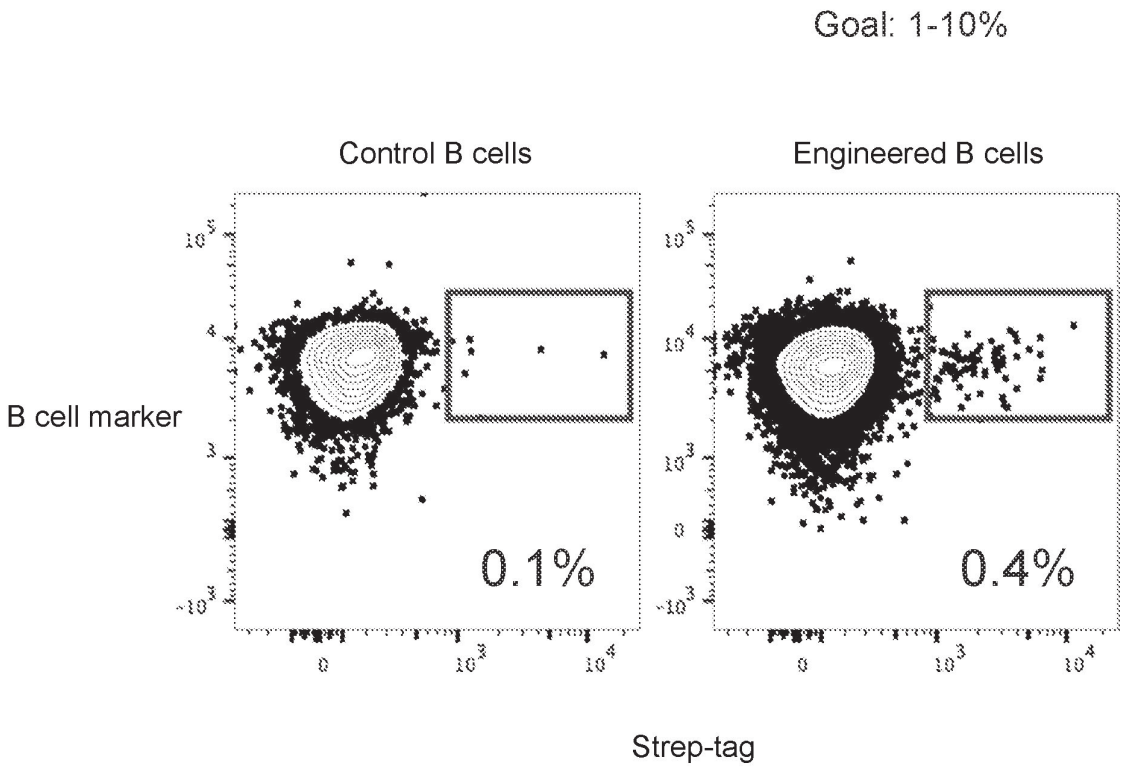

Goal: 1-10%
Control B cells
Engineered B cells
B cell marker
0.1%
0.4%
Strep-tag

FIG. 20

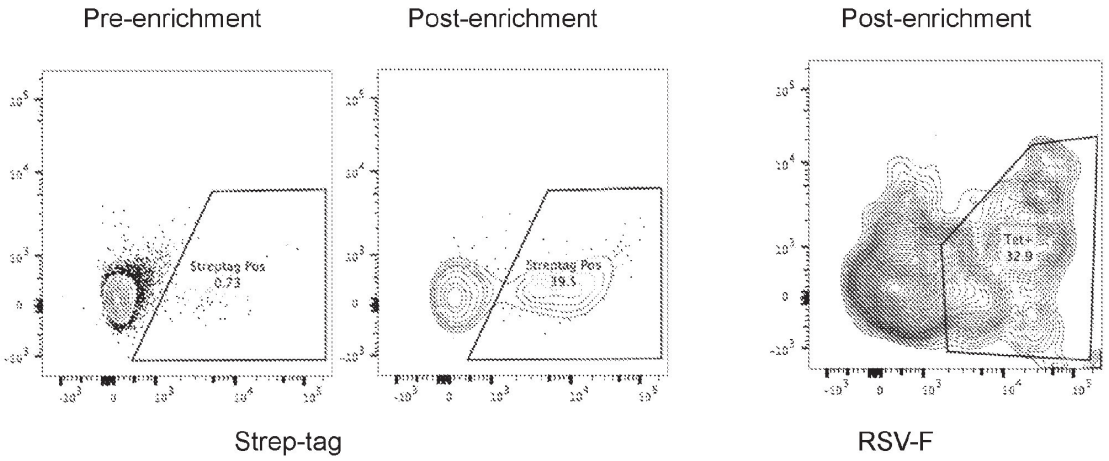

Pre-enrichment
Post-enrichment
Post-enrichment
Strep-tag
RSV-F

FIG. 21

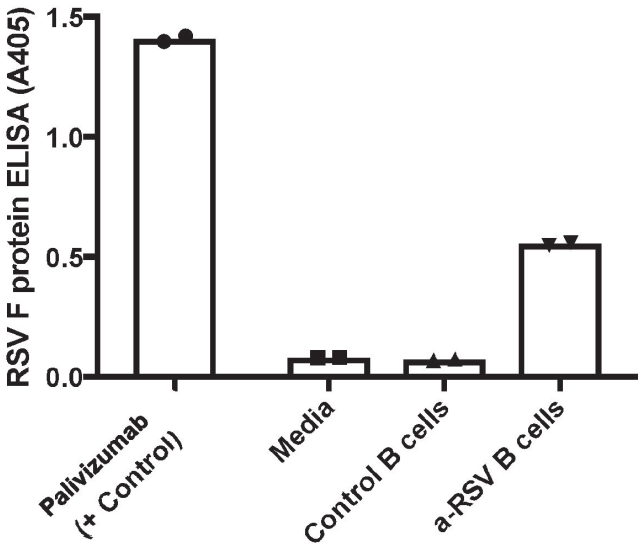

RSV F protein ELISA (A405)
1.5
1.0
0.5
0.0
Palivizumab (+ Control)
Media
Control B cells
a-RSV B cells

FIG. 22A

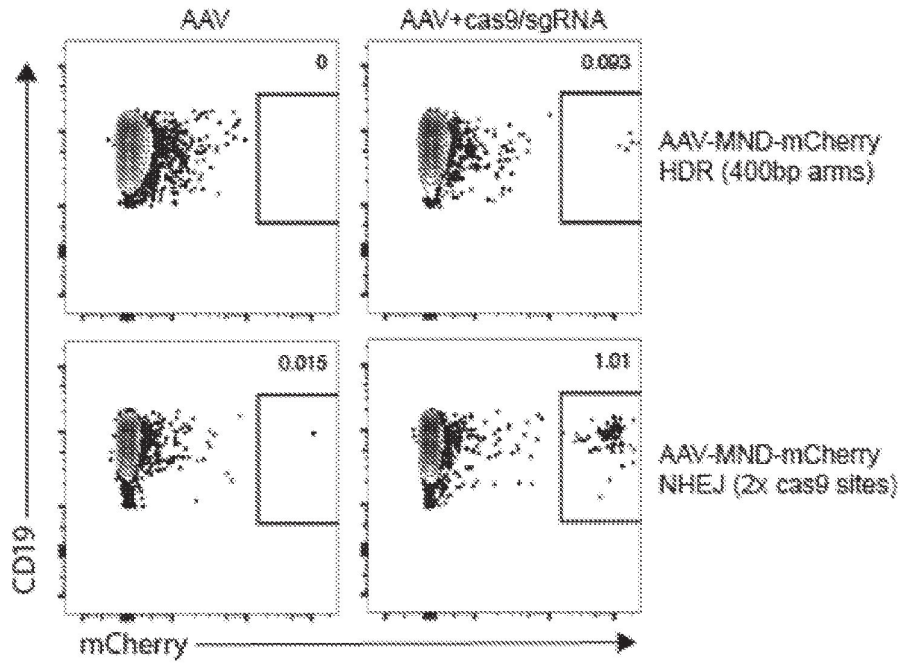


FIG. 22B

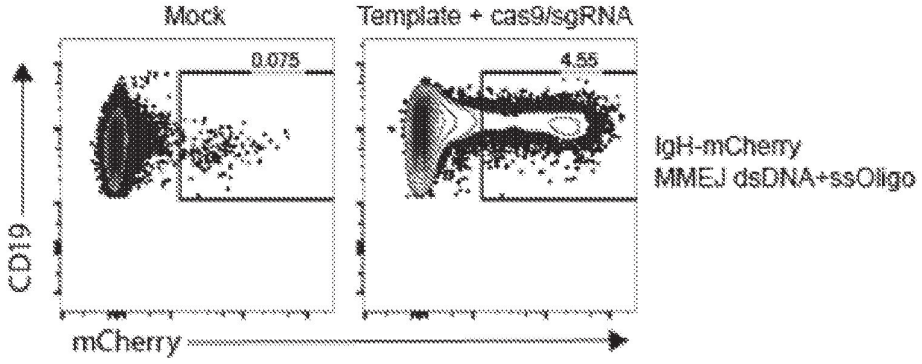
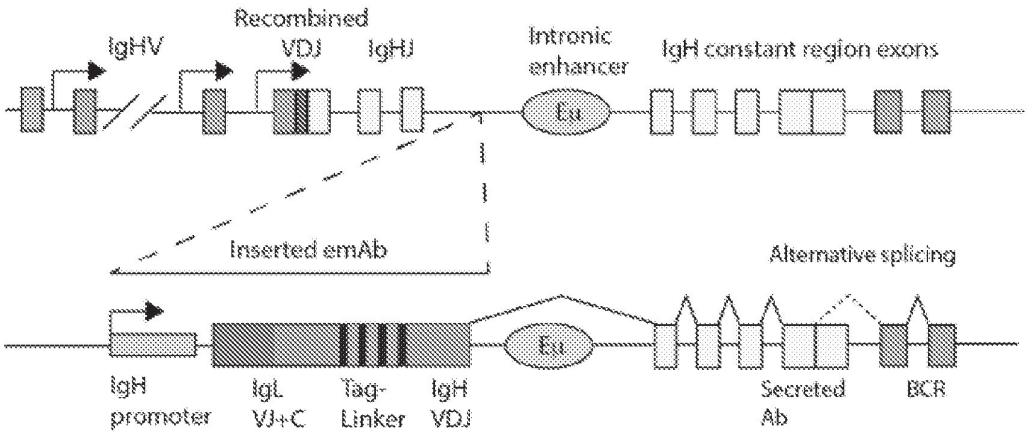
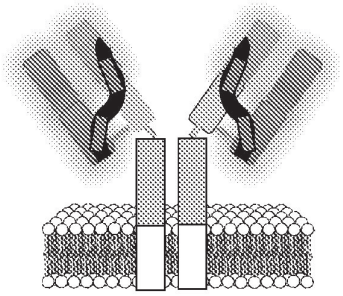


FIG. 23A


IgHV
Recombined
VDJ
IgHJ
Intronic
enhancer
IgH constant region exons
Eμ
Inserted emAb
Alternative splicing
Eμ
IgH
promoter
IgL
VJ+C
Tag-
Linker
IgH
VDJ
Secreted
Ab
BCR



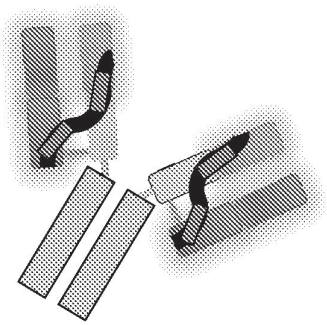


FIG. 23B

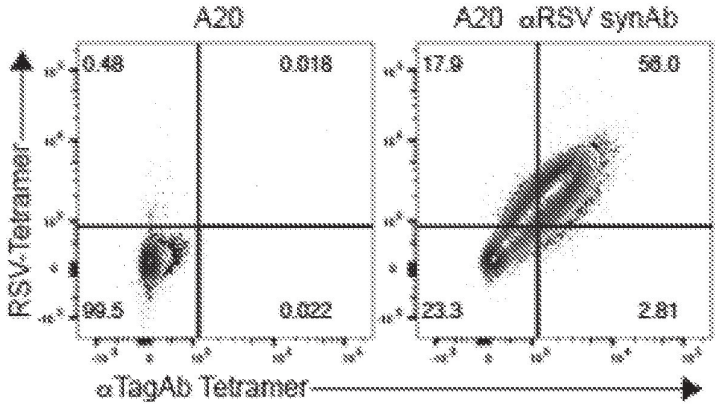


FIG. 23C

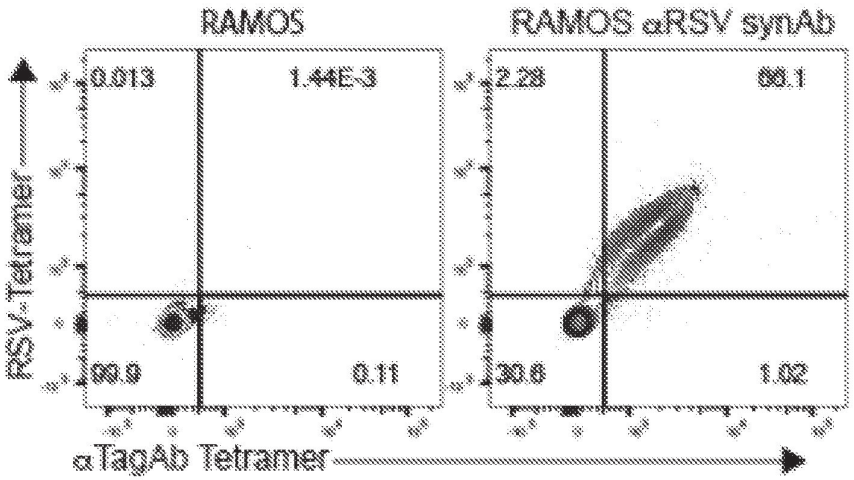


FIG. 23D

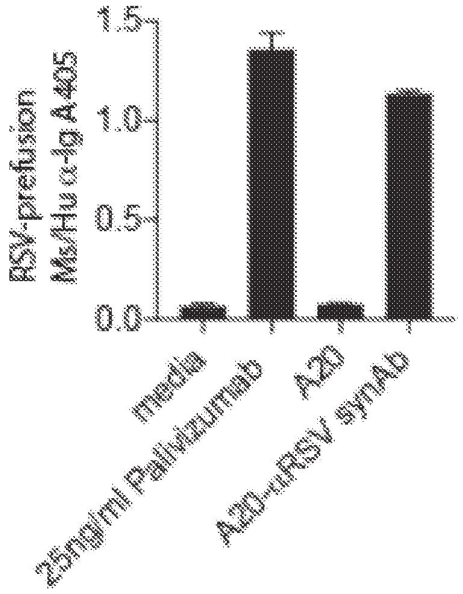


FIG. 23E

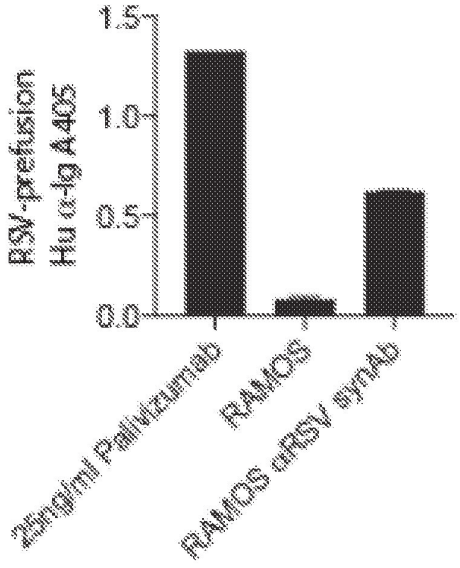


FIG. 24A

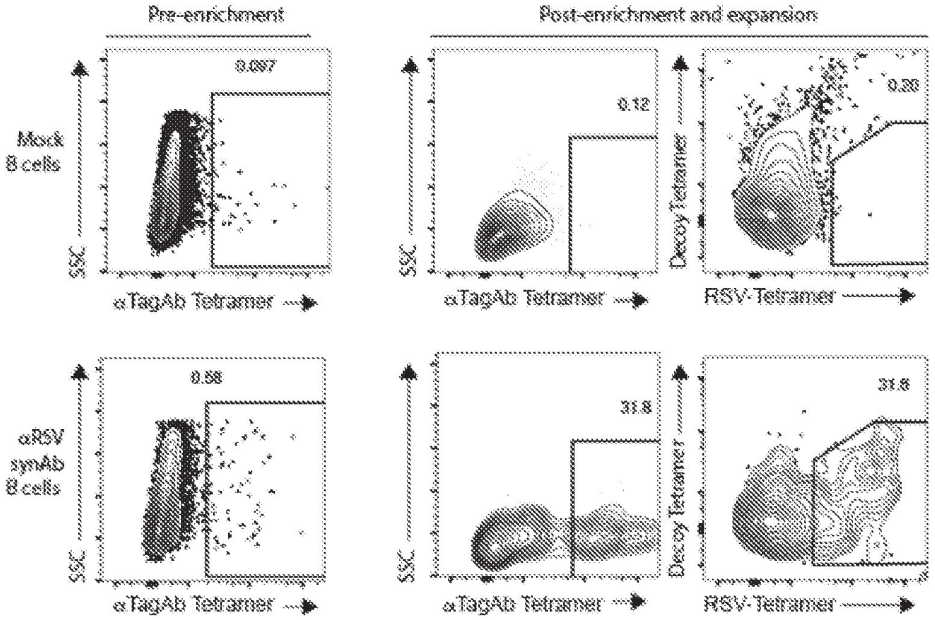


FIG. 24B

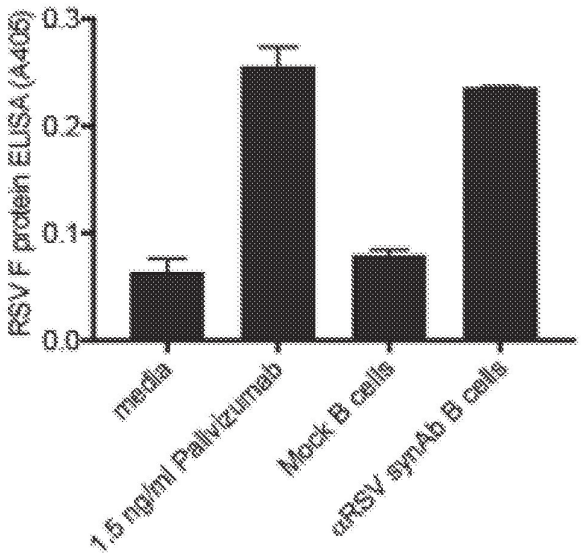


FIG. 24C

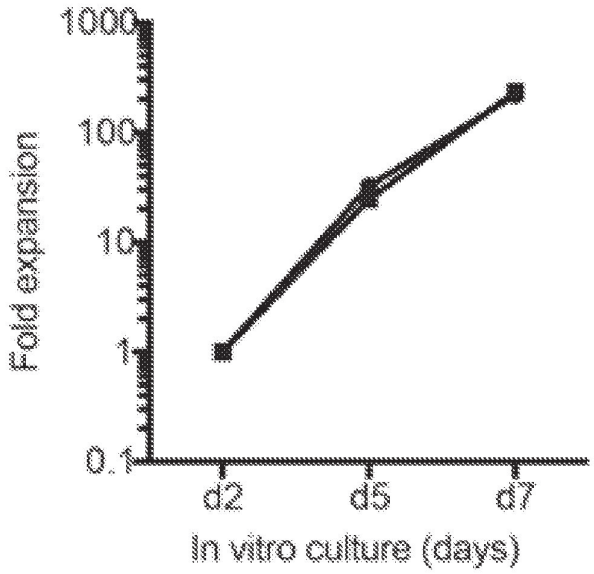


FIG. 25A

sgRNA sequences:

Mouse: sgRNA-mIgH_3: UUAUACAGUAUCCGAUGCAU (SEQ ID NO: 87)
Human: sgRNA-hIgH-6: GCAUUGCAGGUUGGUCCUCG (SEQ ID NO: 88)
sgRNA-hIgH-7: GUCUCAGGAGCGGUGUCUGU (SEQ ID NO: 89)

Mouse (for sgRNA-mIgH_3) Genome Homology Regions:
Upstream: CATCGGATACTGTATAAATGCTGTCACAGAGGTGGT (SEQ ID NO: 90)
Downstream: CATAGGGACAAAGAGTGGAGTGGGGCACTTTCTTTA (SEQ ID NO: 91)

Human (for sgRNA-hIgH-7) Genome Homology Regions:
GACACCGCTCCTGAGACACATTCCTCAGCCATCACT (SEQ ID NO: 92)
TGTAGGACTGCAAGATCGCTGCACAGCAGCGAATCG (SEQ ID NO: 93)

Human (for sgRNA-hIgH-6) Genome Homology Regions:
GGGACCAACCTGCAATGCTCAGGAAACCCCACAGGCA (SEQ ID NO: 94)
TTCGGGGCATGTTCCGAGGGGACCTGGGCGGACTGGC (SEQ ID NO: 95)

Splicing oligonucleotides (homology to genome indicated in bold):

Mouse (for sgRNA-mIgH_3):
Upstream:CTTCGAGACATGTACAGACCATTTAGATGTAGTATCAAAGCCTAATATCTCAATCTT
AAAATAGAATCCTAACCTGAGACACTCACTTGTC**CATCGGATACTGTATAAATGCTGTCACA**
GAGGTGGT (SEQ ID NO: 96)
Downstream:CTTCTCCCATTCTAAATGCATGTTGGGGGGATTCTGGGCCTTCAGGACCA**CATA**
GGGACAAAGAGTGGAGTGGGGCACTTTCTTTA (SEQ ID NO: 97)

Human (for sgRNA-hIgH-7):
Upstream:GTGCACAGCGCTCTTCCCGCTGCAGAACAAACCCCAACCCCAGGATGCACTCCTC
ACTGTGAACCCACATTTTATTGGCCTAAAGATTACG**GACACCGCTCCTGAGACACATTCCTC**
AGCCATCACT (SEQ ID NO: 98)
Downstream:GTCTGGGGATAGCGGGGAGCCAGGTGTACTGGGCCAGGCAAGGGCTTTGG**TG**
TAGGACTGCAAGATCGCTGCACAGCAGCGAATCG (SEQ ID NO: 99)

Human (for sgRNA-hIgH-6):
Upstream:GTGCACAGCGCTCTTCCCGCTGCAGAACAAACCCCAACCCCAGGATGCACTCCTC
ACTGTGAACCCACATTTTATTGGCCTAAAGATTACG**GGGACCAACCTGCAATGCTCAGGAAA**
CCCCACAGGCA (SEQ ID NO: 100)
Downstream:GTCTGGGGATAGCGGGGAGCCAGGTGTACTGGGCCAGGCAAGGGCTTTGG**TT**
CGGGGCATGTTCCGAGGGGACCTGGGCGGACTGGC (SEQ ID NO: 101)

FIG. 25B
human anti-RSV emAb AAV (2531 bp)

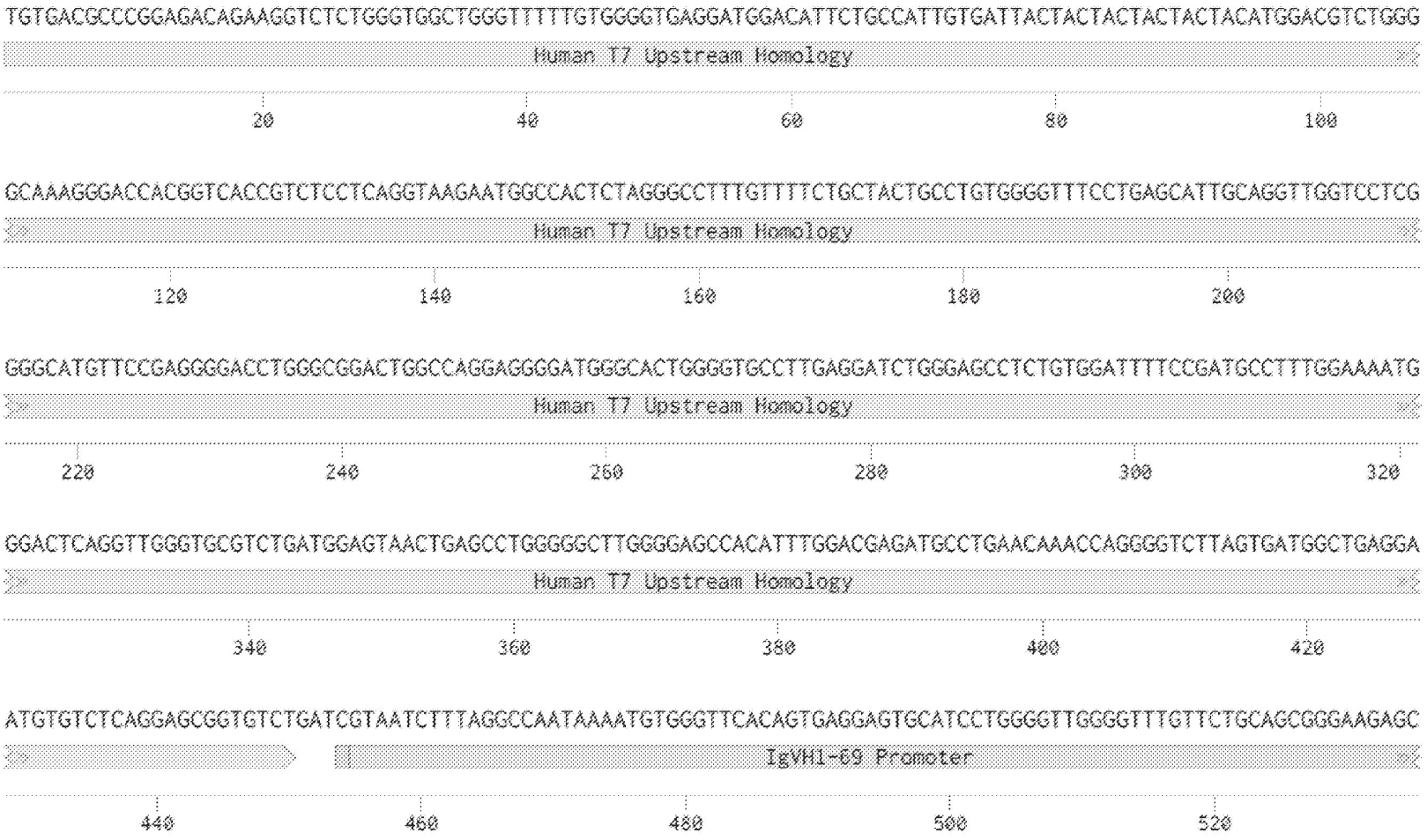


FIG. 25B (cont'd)

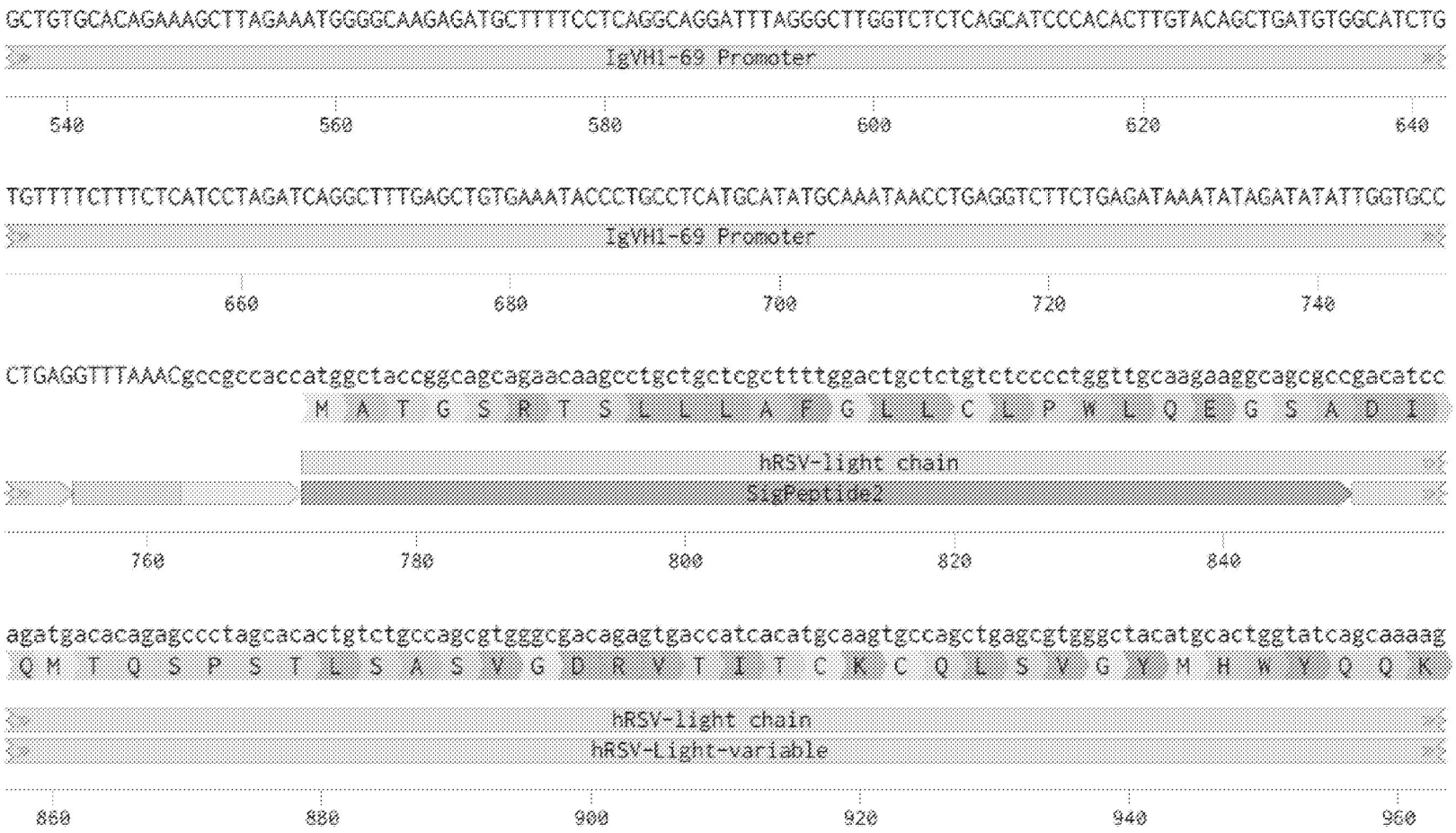


FIG. 25B (cont'd)

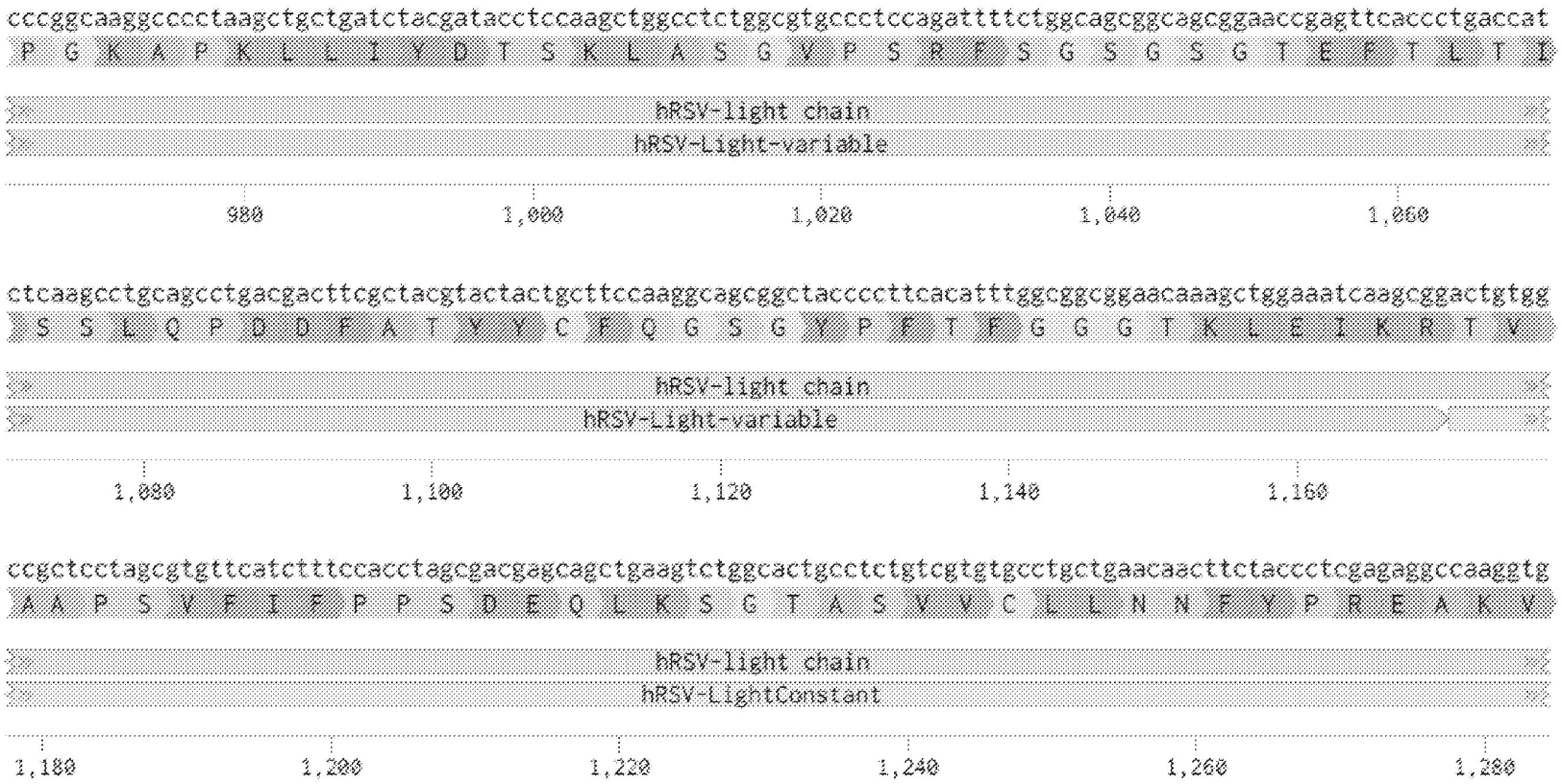


FIG. 25B (cont'd)

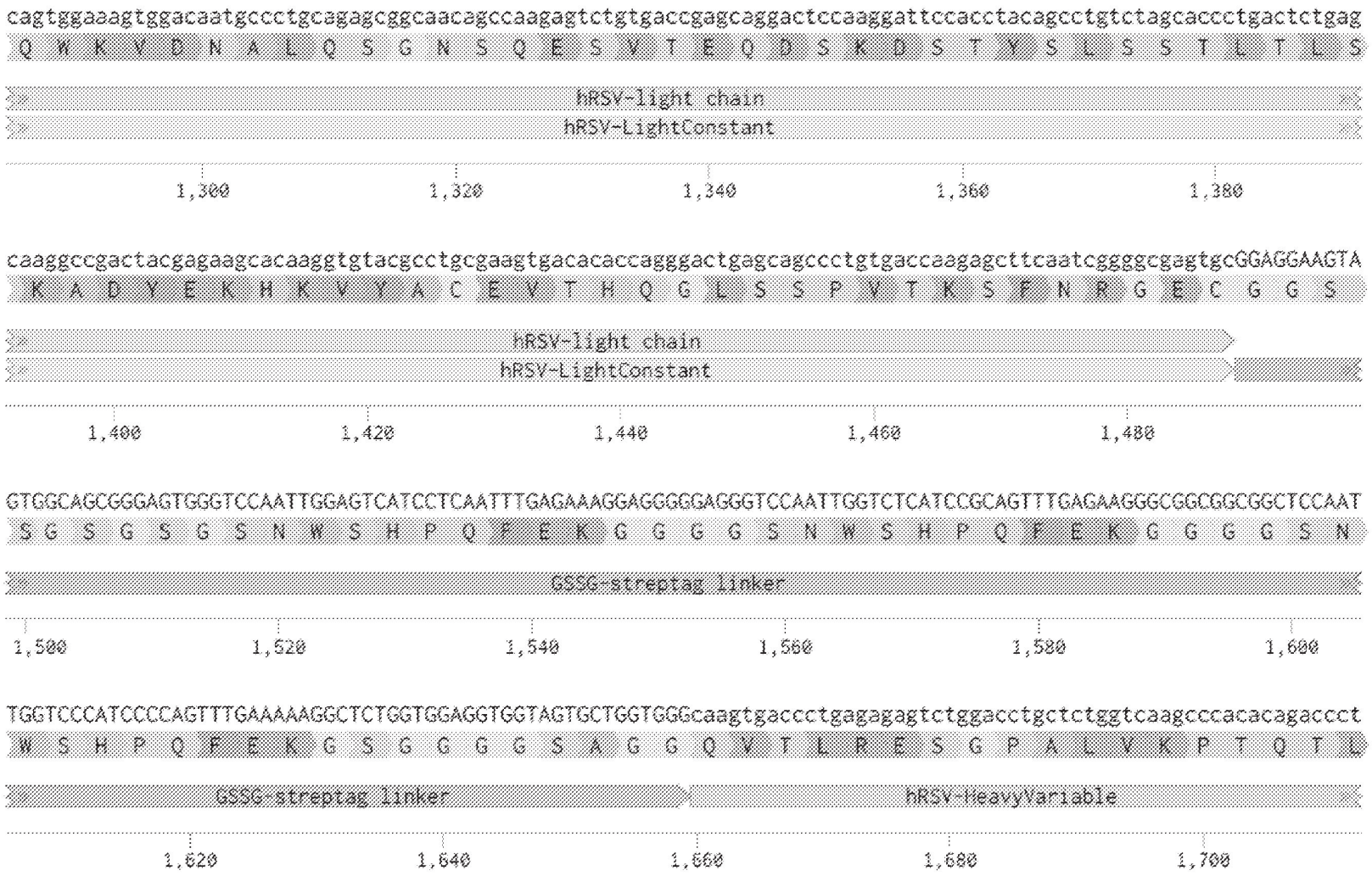


FIG. 25B (cont'd)

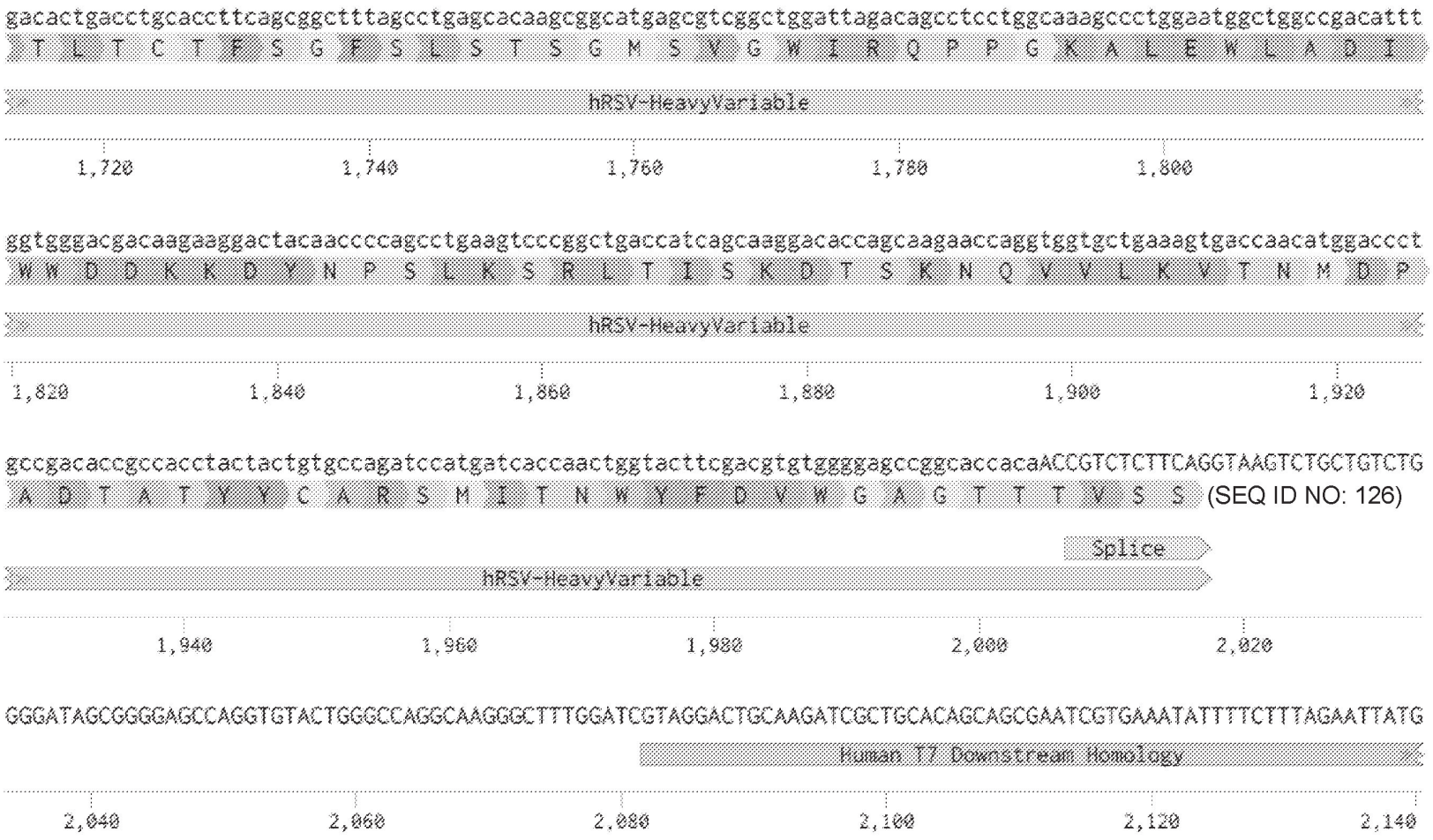


FIG. 25B (cont'd)

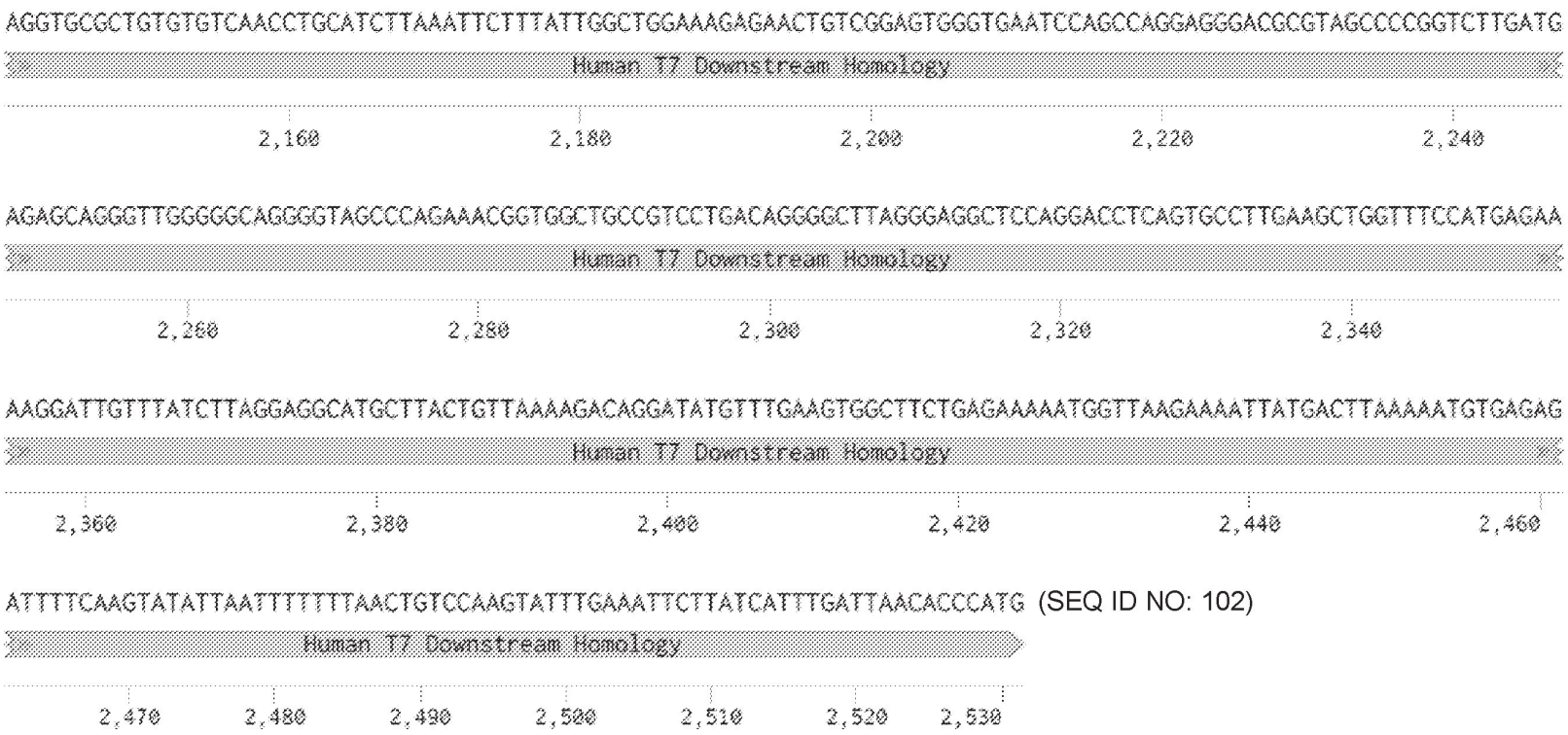


FIG. 25B (cont'd)

>Human T7 upstream homology region in human anti-RSV emAb AAV
TGTGACGCCCGGAGACAGAAGGTCTCTGGGTGGCTGGGTTTTTGTGGGGTGAGGATGGACATTCTGCCATTGTGATTACTACTA
CTACTACTACATGGACGTCTGGGGCAAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGCCACTCTAGGGCCTTTGTTTT
CTGCTACTGCCTGTGGGGTTTCCTGAGCATTGCAGGTTGGTCCTCGGGGCATGTTCCGAGGGGACCTGGGCGGACTGGCCAG
GAGGGGATGGGCACTGGGGTGCCTTGAGGATCTGGGAGCCTCTGTGGATTTTCCGATGCCTTTGGAAAATGGGACTCAGGTTG
GGTGCGTCTGATGGAGTAACTGAGCCTGGGGGCTTGGGGAGCCACATTTGGACGAGATGCCTGAACAAACCAGGGGTCTTAGT
GATGGCTGAGGAATGTGTCTCAGGAGCGGTGTCT (SEQ ID NO: 110)

>IgVH1-69 promoter in human anti-RSV emAb AAV
GTAATCTTTAGGCCAATAAAATGTGGGTTCACAGTGAGGAGTGCATCCTGGGGTTGGGGTTTGTTCTGCAGCGGGAAGAGCGCT
GTGCACAGAAAGCTTAGAAATGGGGCAAGAGATGCTTTTCCTCAGGCAGGATTTAGGGCTTGGTCTCTCAGCATCCCACACTTG
TACAGCTGATGTGGCATCTGTGTTTTCTTTCTCATCCTAGATCAGGCTTTGAGCTGTGAAATACCCTGCCTCATGCATATGCAAAT
AACCTGAGGTCTTCTGAGATAAATATAGATATATTGGTGCCCTGAG (SEQ ID NO: 111)

>Signal peptide coding sequence in human anti-RSV emAb AAV
ATGGCTACCGGCAGCAGAACAAGCCTGCTGCTCGCTTTTGGACTGCTCTGTCTCCCCTGGTTGCAAGAAGGCAGCGCC (SEQ ID NO: 112)

>hRSV light chain coding sequence in human anti-RSV emAb AAV
ATGGCTACCGGCAGCAGAACAAGCCTGCTGCTCGCTTTTGGACTGCTCTGTCTCCCCTGGTTGCAAGAAGGCAGCGCCGACAT
CCAGATGACACAGAGCCCTAGCACACTGTCTGCCAGCGTGGGCGACAGAGTGACCATCACATGCAAGTGCCAGCTGAGCGTGG
GCTACATGCACTGGTATCAGCAAAAGCCCGGCAAGGCCCCTAAGCTGCTGATCTACGATACCTCCAAGCTGGCCTCTGGCGTG
CCCTCCAGATTTTCTGGCAGCGGCAGCGGAACCGAGTTCACCCTGACCATCTCAAGCCTGCAGCCTGACGACTTCGCTACGTAC
TACTGCTTCCAAGGCAGCGGCTACCCCTTCACATTTGGCGGCGGAACAAAGCTGGAAATCAAGCGGACTGTGGCCGCTCCTAG
CGTGTTCATCTTTCCACCTAGCGACGAGCAGCTGAAGTCTGGCACTGCCTCTGTCGTGTGCCTGCTGAACAACTTCTACCCTCG
AGAGGCCAAGGTGCAGTGGAAAGTGGACAATGCCCTGCAGAGCGGCAACAGCCAAGAGTCTGTGACCGAGCAGGACTCCAAG
GATTCCACCTACAGCCTGTCTAGCACCCTGACTCTGAGCAAGGCCGACTACGAGAAGCACAAGGTGTACGCCTGCGAAGTGAC
ACACCAGGGACTGAGCAGCCCTGTGACCAAGAGCTTCAATCGGGGCGAGTGC (SEQ ID NO: 113)

FIG. 25B (cont'd)

>hRSV variable light chain coding sequence in human anti-RSV emAb AAV
GACATCCAGATGACACAGAGCCCTAGCACACTGTCTGCCAGCGTGGGCGACAGAGTGACCATCACATGCAAGTGCCAGCTGAG
CGTGGGCTACATGCACTGGTATCAGCAAAAGCCCGGCAAGGCCCCTAAGCTGCTGATCTACGATACCTCCAAGCTGGCCTCTG
GCGTGCCCTCCAGATTTTCTGGCAGCGGCAGCGGAACCGAGTTCACCCTGACCATCTCAAGCCTGCAGCCTGACGACTTCGCT
ACGTACTACTGCTTCCAAGGCAGCGGCTACCCCTTCACATTTGGCGGCGGAACAAAGCTGGAAATCAAGCGG (SEQ ID NO: 114)

>kappa constant light chain coding sequence in human anti-RSV emAb AAV
ACTGTGGCCGCTCCTAGCGTGTTCATCTTTCCACCTAGCGACGAGCAGCTGAAGTCTGGCACTGCCTCTGTCGTGTGCCTGCTG
AACAACTTCTACCCTCGAGAGGCCAAGGTGCAGTGGAAAGTGGACAATGCCCTGCAGAGCGGCAACAGCCAAGAGTCTGTGAC
CGAGCAGGACTCCAAGGATTCCACCTACAGCCTGTCTAGCACCCTGACTCTGAGCAAGGCCGACTACGAGAAGCACAAGGTGT
ACGCCTGCGAAGTGACACACCAGGGACTGAGCAGCCCTGTGACCAAGAGCTTCAATCGGGGCGAGTGC (SEQ ID NO: 115)

>GSSG-streptag linker coding sequence in human anti-RSV emAb AAV
GGAGGAAGTAGTGGCAGCGGGAGTGGGTCCAATTGGAGTCATCCTCAATTTGAGAAAGGAGGGGGAGGGTCCAATTGGTCTCA
TCCGCAGTTTGAGAAGGGCGGCGGCGGCTCCAATTGGTCCCATCCCCAGTTTGAAAAAGGCTCTGGTGGAGGTGGTAGTGCTG
GTGGG (SEQ ID NO: 116)

>hRSV variable heavy chain coding sequence in human anti-RSV emAb AAV
CAAGTGACCCTGAGAGAGTCTGGACCTGCTCTGGTCAAGCCCACACAGACCCTGACACTGACCTGCACCTTCAGCGGCTTTAG
CCTGAGCACAAGCGGCATGAGCGTCGGCTGGATTAGACAGCCTCCTGGCAAAGCCCTGGAATGGCTGGCCGACATTTGGTGG
GACGACAAGAAGGACTACAACCCCAGCCTGAAGTCCCGGCTGACCATCAGCAAGGACACCAGCAAGAACCAGGTGGTGCTGAA
AGTGACCAACATGGACCCTGCCGACACCGCCACCTACTACTGTGCCAGATCCATGATCACCAACTGGTACTTCGACGTGTGGGG
AGCCGGCACCACAACCGTCTCTTCA (SEQ ID NO: 117)

>signal peptide amino acid sequence in human anti-RSV emAb AAV
MATGSRTSLLLAFGLLCLPWLQEGSA (SEQ ID NO: 118)

FIG. 25B (cont'd)

>hRSV light chain amino acid sequence in human anti-RSV emAb AAV
MATGSRTSLLLAFGLLCLPWLQEGSADIQMTQSPSTLSASVGDRVTITCKCQLSVGYMHWYQQKPGKAPKLLIYDTSKLASGVPSRFS
GSGSGTEFTLTISSLQPDDFATYYCFQGSGYPFTFGGGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVD
NALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC (SEQ ID NO: 119)

>hRSV variable light chain amino acid sequence in human anti-RSV emAb AAV
DIQMTQSPSTLSASVGDRVTITCKCQLSVGYMHWYQQKPGKAPKLLIYDTSKLASGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCF
QGSGYPFTFGGGTKLEIKR (SEQ ID NO: 120)

>kappa constant light chain amino acid sequence in human anti-RSV emAb AAV
TVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEV
THQGLSSPVTKSFNRGEC (SEQ ID NO: 121)

>GSSG-streptag linker amino acid sequence in human anti-RSV emAb AAV
GGSSGSGSGSNWSHPQFEKGGGGSNWSHPQFEKGGGGSNWSHPQFEKGSGGGGSAGG (SEQ ID NO: 122)

>hRSV variable heavy chain amino acid sequence in human anti-RSV emAb AAV
QVTLRESGPALVKPTQTLTLTCTFSGFSLSTSGMSVGWIRQPPGKALEWLADIWWDDKKD
YNPSLKSRLTISKDTSKNQVVLKVTNMDPADTATYYCARSMITNWYFDVWGAGTTTVSS (SEQ ID NO: 123)

>splice junction with flanking sequence in human anti-RSV emAb AAV
CAGGTAAGTCTGCTGTCTGGGGATAGCGGGGAGCCAGGTGTACTGGGCCAGGCAAGGGCTTTGGATC (SEQ ID NO: 124)

>Human T7 downstream homology in human anti-RSV emAb AAV
GTAGGACTGCAAGATCGCTGCACAGCAGCGAATCGTGAAATATTTTCTTTAGAATTATGAGGTGCGCTGTGTGTCAACCTGCATC
TTAAATTCTTTATTGGCTGGAAAGAGAACTGTCGGAGTGGGTGAATCCAGCCAGGAGGGACGCGTAGCCCCGGTCTTGATGAGA
GCAGGGTTGGGGGCAGGGGTAGCCCAGAAACGGTGGCTGCCGTCCTGACAGGGGCTTAGGGAGGCTCCAGGACCTCAGTGC
CTTGAAGCTGGTTTCCATGAGAAAAGGATTGTTTATCTTAGGAGGCATGCTTACTGTTAAAAGACAGGATATGTTTGAAGTGGCTT
CTGAGAAAAATGGTTAAGAAAATTATGACTTAAAAATGTGAGAGATTTTCAAGTATATTAATTTTTTTAACTGTCCAAGTATTTGAAA
TTCTTATCATTTGATTAACACCCATG (SEQ ID NO: 125)

FIG. 25B (cont'd)

>hRSV light chain coding sequence without signal sequence in human anti-RSV emAb AAV
GACATCCAGATGACACAGAGCCCTAGCACACTGTCTGCCAGCGTGGGCGACAGAGTGACCATCACATGCAAGTGCCAGCTGAG
CGTGGGCTACATGCACTGGTATCAGCAAAAGCCCGGCAAGGCCCCTAAGCTGCTGATCTACGATACCTCCAAGCTGGCCTCTG
GCGTGCCCTCCAGATTTTCTGGCAGCGGCAGCGGAACCGAGTTCACCCTGACCATCTCAAGCCTGCAGCCTGACGACTTCGCT
ACGTACTACTGCTTCCAAGGCAGCGGCTACCCCTTCACATTTGGCGGCGGAACAAAGCTGGAAATCAAGCGGACTGTGGCCGC
TCCTAGCGTGTTCATCTTTCCACCTAGCGACGAGCAGCTGAAGTCTGGCACTGCCTCTGTCGTGTGCCTGCTGAACAACTTCTA
CCCTCGAGAGGCCAAGGTGCAGTGGAAAGTGGACAATGCCCTGCAGAGCGGCAACAGCCAAGAGTCTGTGACCGAGCAGGAC
TCCAAGGATTCCACCTACAGCCTGTCTAGCACCCTGACTCTGAGCAAGGCCGACTACGAGAAGCACAAGGTGTACGCCTGCGA
AGTGACACACCAGGGACTGAGCAGCCCTGTGACCAAGAGCTTCAATCGGGGCGAGTGC (SEQ ID NO: 280)

>hRSV light chain amino acid sequence without signal peptide in human anti-RSV emAb AAV
DIQMTQSPSTLSASVGDRVTITCKCQLSVGYMHWYQQKPGKAPKLLIYDTSKLASGVPSRFSGSGSGTEFTLTISSLQPDDFATYYCF
QGSGYPFTFGGGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLS
STLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC (SEQ ID NO: 285)

FIG. 25C
mouse anti-RSV emAb AAV (3134 bp)

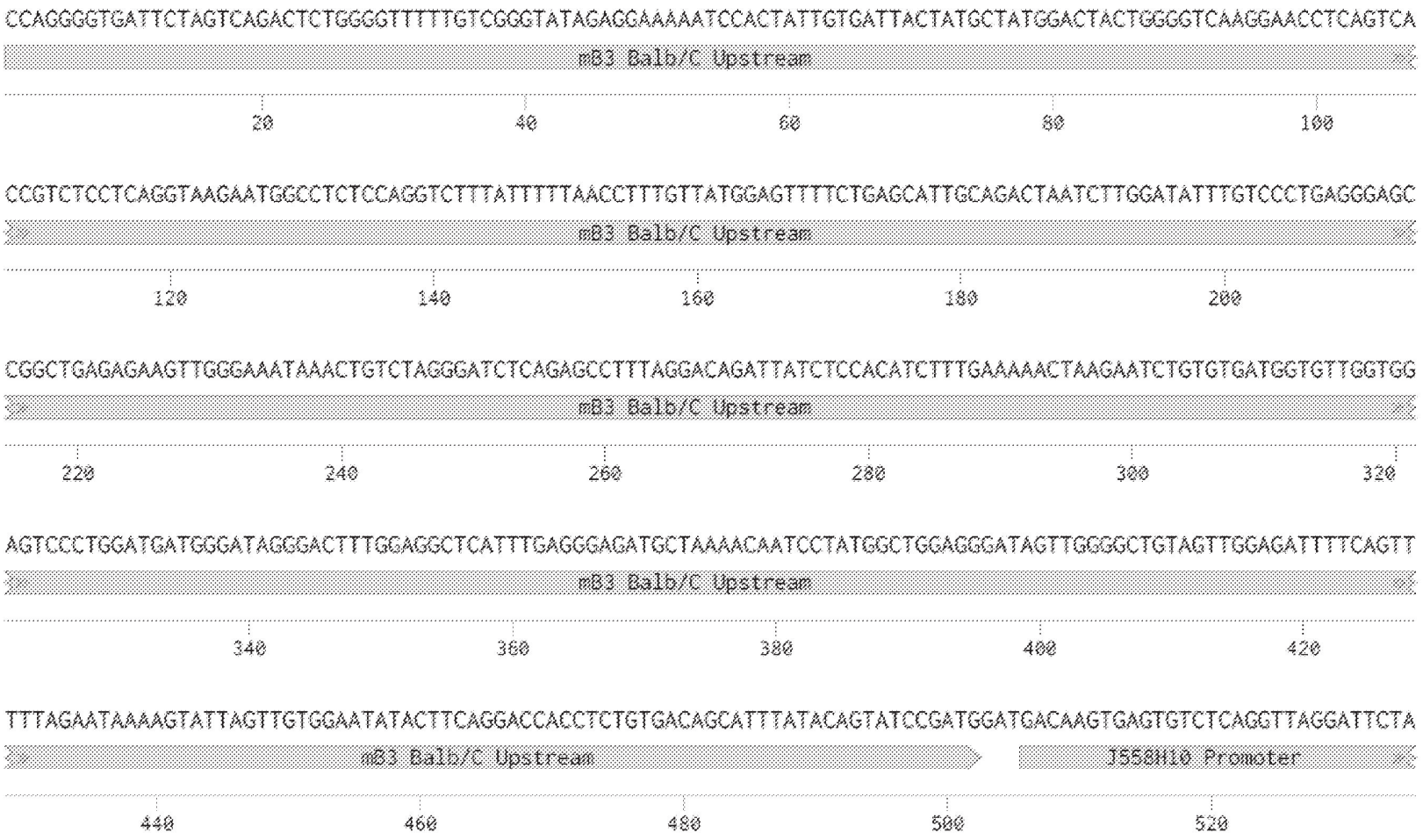


FIG. 25C (cont'd)

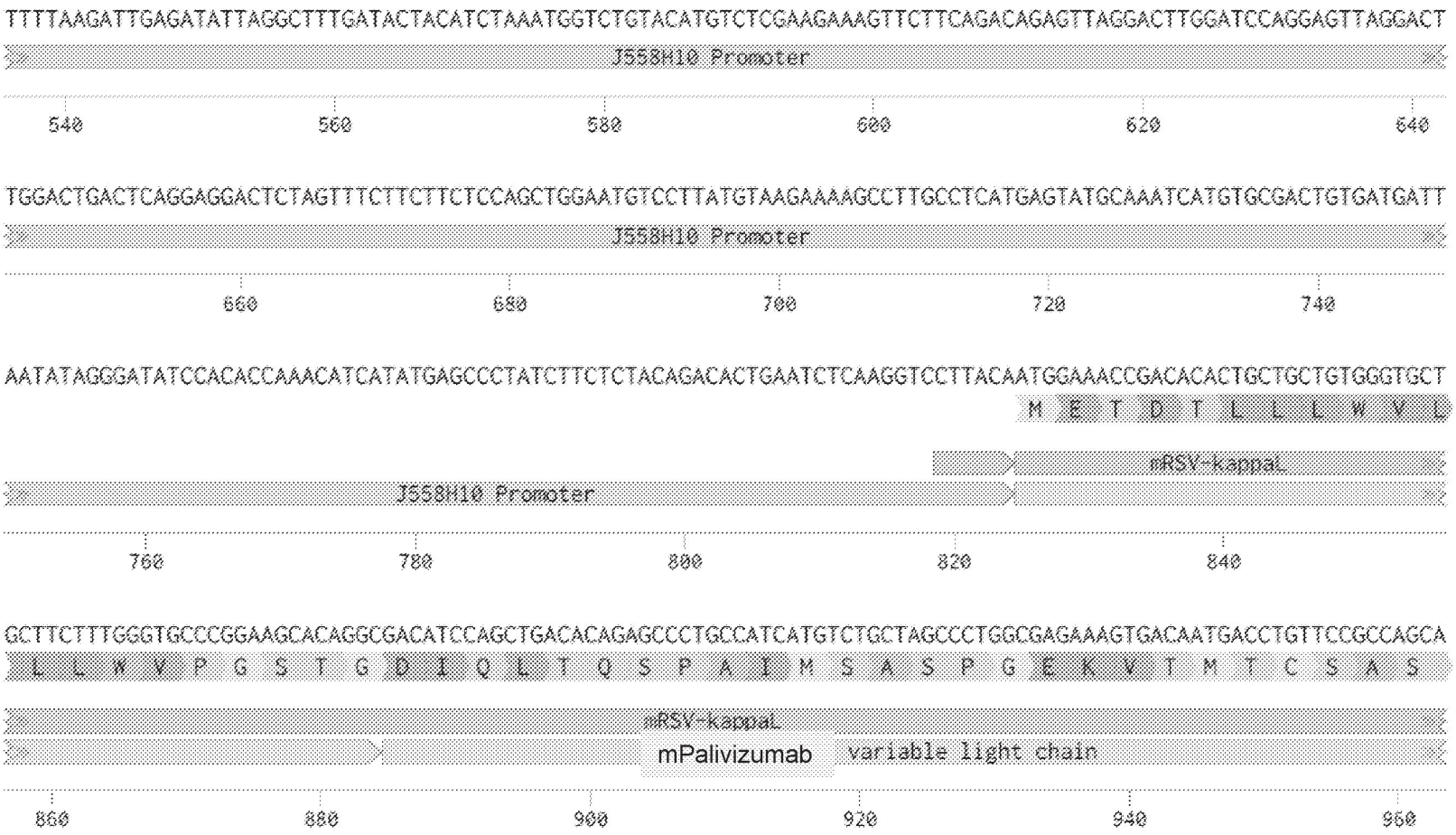


FIG. 25C (cont'd)

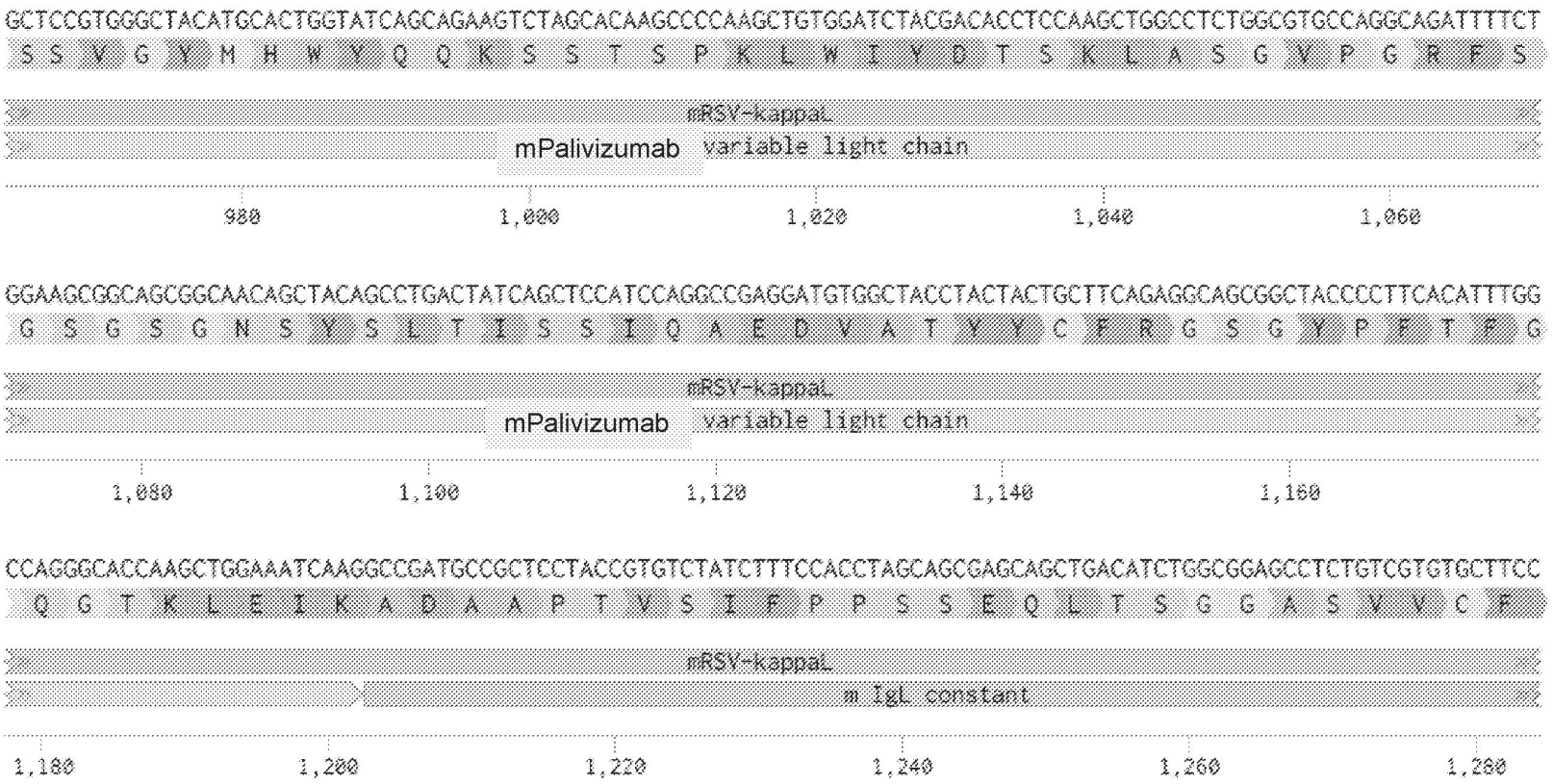


FIG. 25C (cont'd)

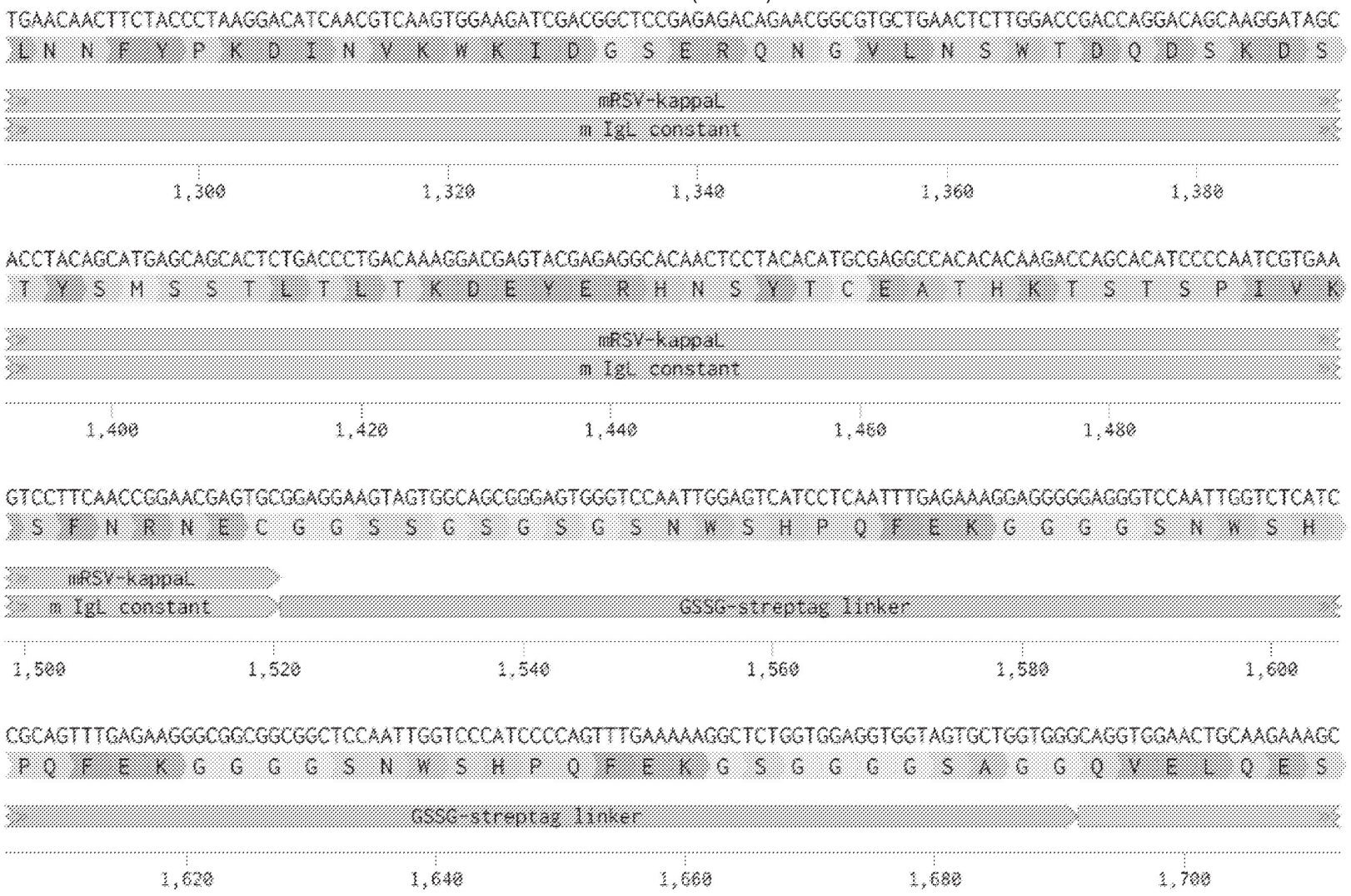


FIG. 25C (cont'd)

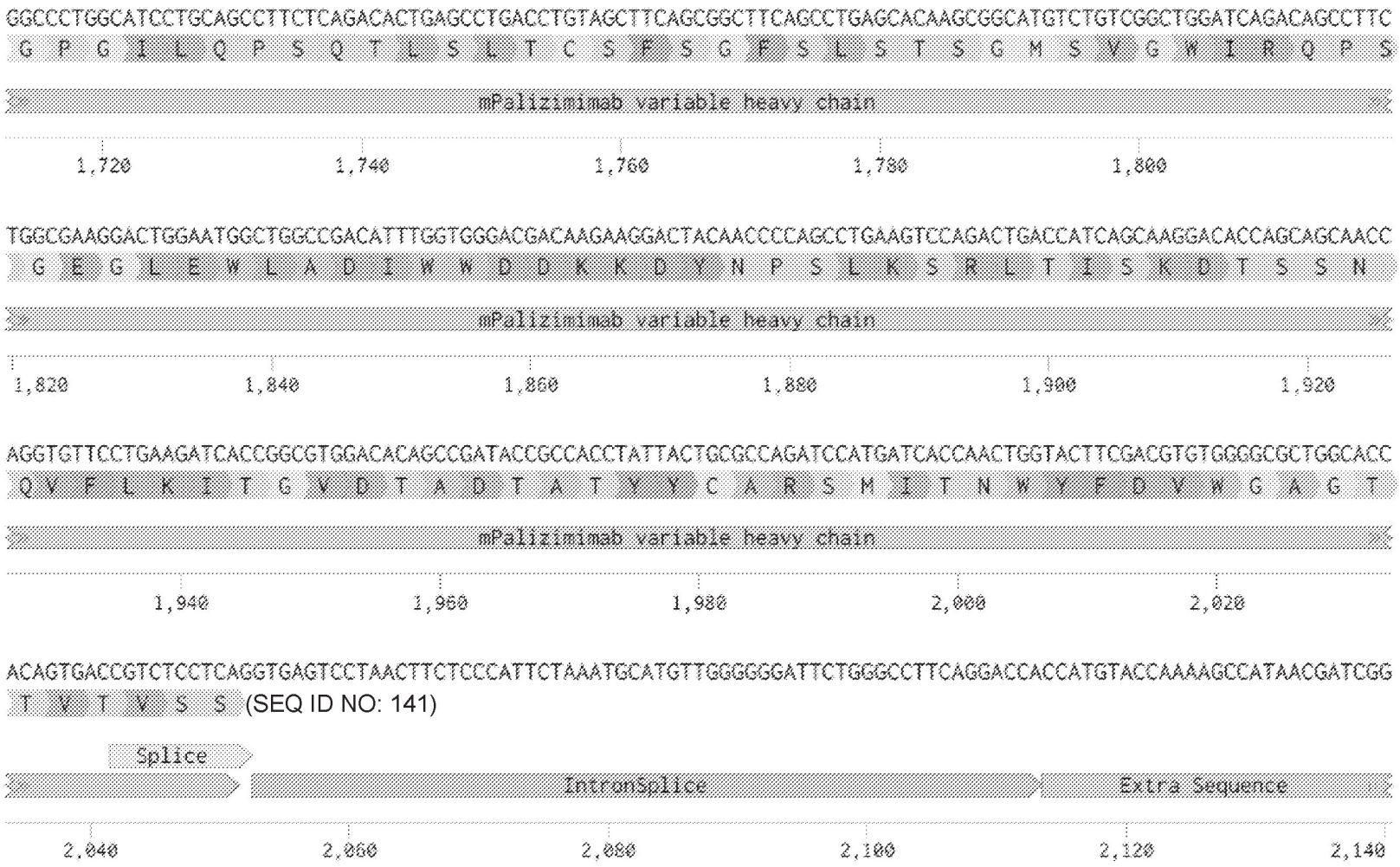


FIG. 25C (cont'd)

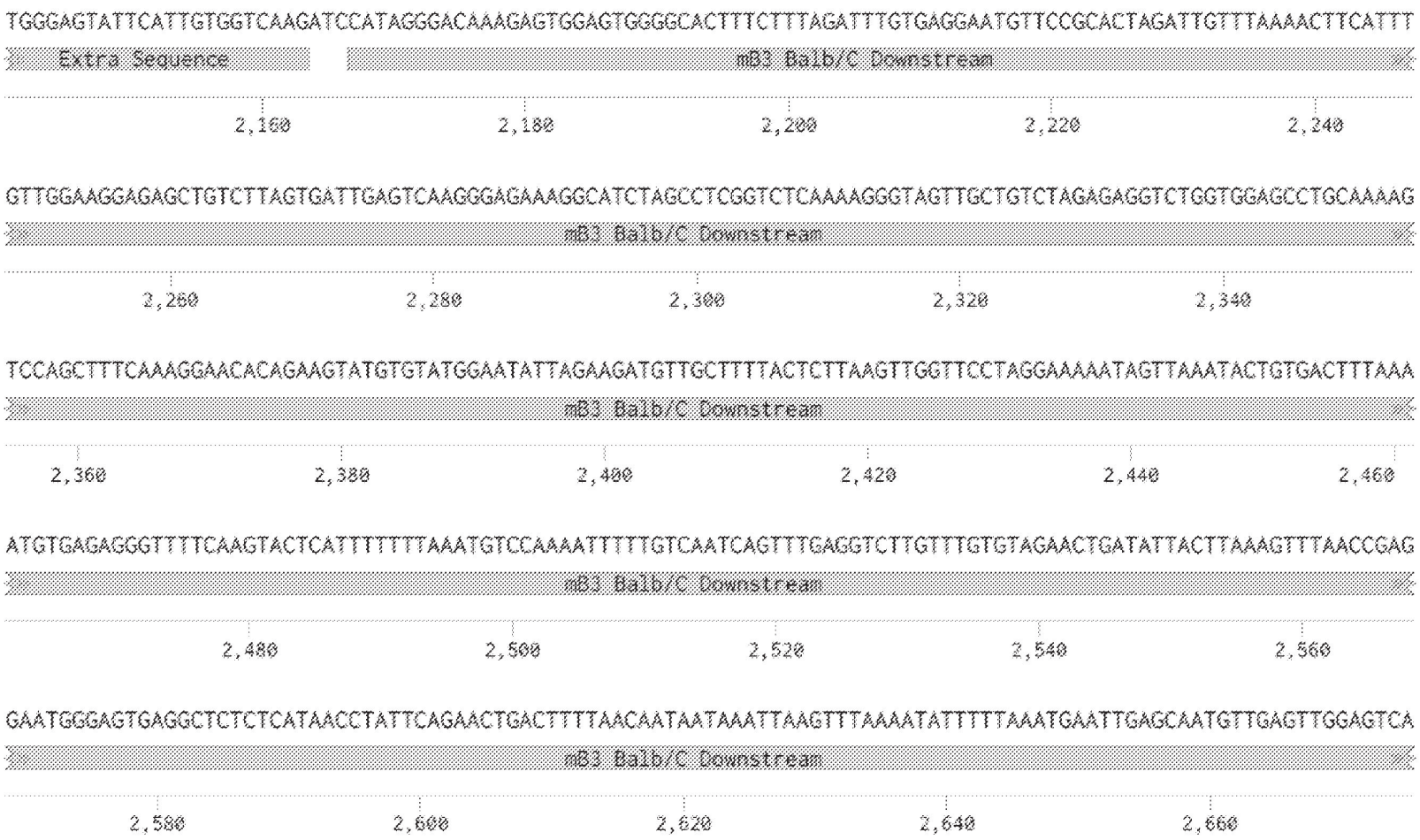
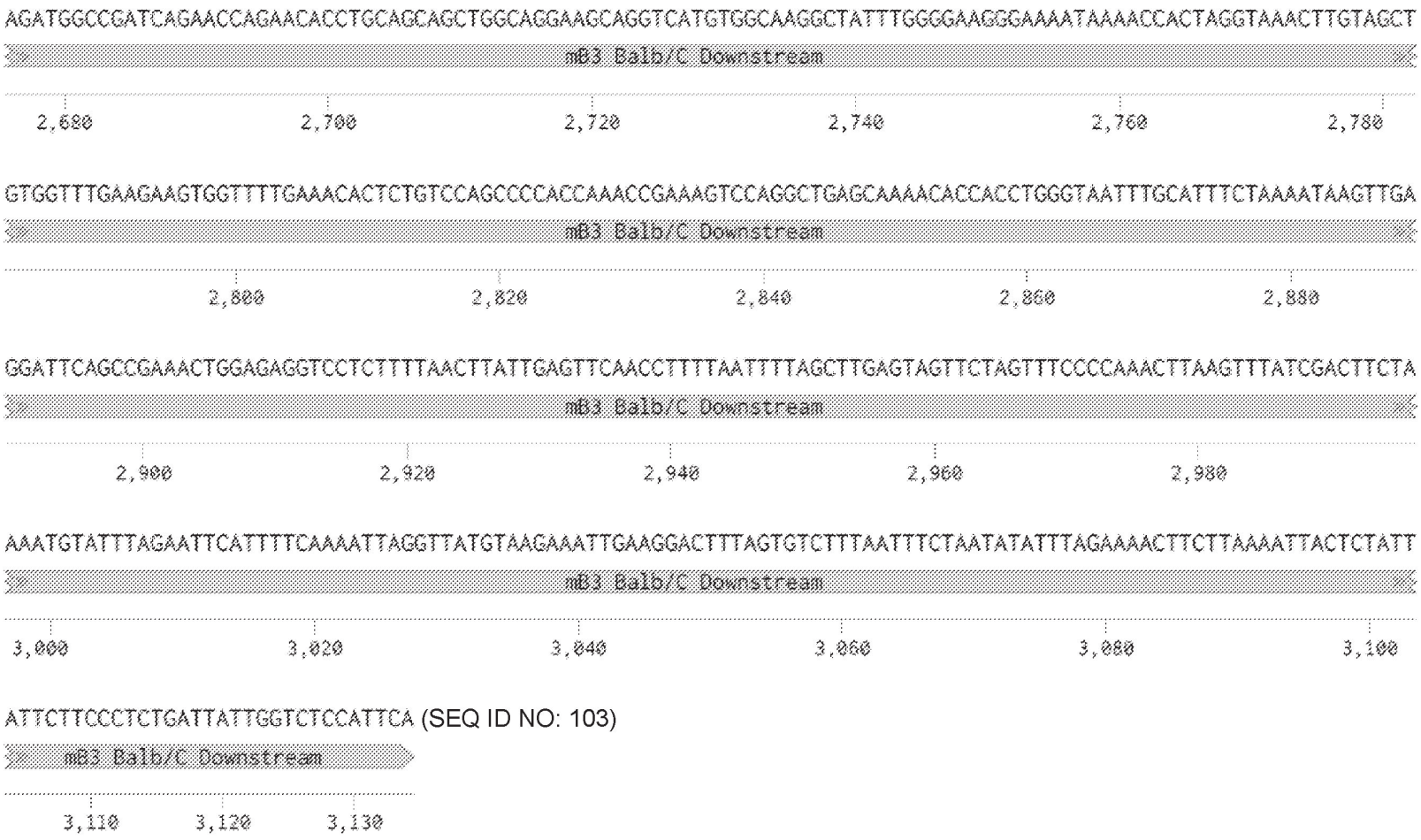


FIG. 25C (cont'd)



ATTCTTCCCTCTGATTATTGGTCTCCATTCA (SEQ ID NO: 103)

FIG. 25C (cont'd)

>Mouse mB3 Balb/C upstream region in mouse anti-RSV emAb AAV
CCAGGGGTGATTCTAGTCAGACTCTGGGGTTTTTGTCGGGTATAGAGGAAAAATCCACTATTGTGATTACTATGCTATGGACTAC
TGGGGTCAAGGAACCTCAGTCACCGTCTCCTCAGGTAAGAATGGCCTCTCCAGGTCTTTATTTTTAACCTTTGTTATGGAGTTTTC
TGAGCATTGCAGACTAATCTTGGATATTTGTCCCTGAGGGAGCCGGCTGAGAGAAGTTGGGAAATAAACTGTCTAGGGATCTCA
GAGCCTTTAGGACAGATTATCTCCACATCTTTGAAAAACTAAGAATCTGTGTGATGGTGTTGGTGGAGTCCCTGGATGATGGGAT
AGGGACTTTGGAGGCTCATTTGAGGGAGATGCTAAAACAATCCTATGGCTGGAGGGATAGTTGGGGCTGTAGTTGGAGATTTTC
AGTTTTTAGAATAAAAGTATTAGTTGTGGAATATACTTCAGGACCACCTCTGTGACAGCATTTATACAGTATCCGATG (SEQ ID
NO: 127)

>J558H10 promoter in mouse anti-RSV emAb AAV
GACAAGTGAGTGTCTCAGGTTAGGATTCTATTTTAAGATTGAGATATTAGGCTTTGATACTACATCTAAATGGTCTGTACATGTCT
CGAAGAAAGTTCTTCAGACAGAGTTAGGACTTGGATCCAGGAGTTAGGACTTGGACTGACTCAGGAGGACTCTAGTTTCTTCTTC
TCCAGCTGGAATGTCCTTATGTAAGAAAAGCCTTGCCTCATGAGTATGCAAATCATGTGCGACTGTGATGATTAATATAGGGATAT
CCACACCAAACATCATATGAGCCCTATCTTCTCTACAGACACTGAATCTCAAGGTCCTTACA (SEQ ID NO: 128)

>Signal peptide coding sequence in mouse anti-RSV emAb AAV
ATGGAAACCGACACACTGCTGCTGTGGGTGCTGCTTCTTTGGGTGCCCGGAAGCACAGGC (SEQ ID NO: 129)

>mRSV kappa light chain coding sequence in mouse anti-RSV emAb AAV
ATGGAAACCGACACACTGCTGCTGTGGGTGCTGCTTCTTTGGGTGCCCGGAAGCACAGGC
GACATCCAGCTGACACAGAGCCCTGCCATCATGTCTGCTAGCCCTGGCGAGAAAGTGACAATGACCTGTTCCGCCAGCAGCTC
CGTGGGCTACATGCACTGGTATCAGCAGAAGTCTAGCACAAGCCCCAAGCTGTGGATCTACGACACCTCCAAGCTGGCCTCTG
GCGTGCCAGGCAGATTTTCTGGAAGCGGCAGCGGCAACAGCTACAGCCTGACTATCAGCTCCATCCAGGCCGAGGATGTGGCT
ACCTACTACTGCTTCAGAGGCAGCGGCTACCCCTTCACATTTGGCCAGGGCACCAAGCTGGAAATCAAGGCCGATGCCGCTCC
TACCGTGTCTATCTTTCCACCTAGCAGCGAGCAGCTGACATCTGGCGGAGCCTCTGTCGTGTGCTTCCTGAACAACTTCTACCCT
AAGGACATCAACGTCAAGTGGAAGATCGACGGCTCCGAGAGACAGAACGGCGTGCTGAACTCTTGGACCGACCAGGACAGCAA
GGATAGCACCTACAGCATGAGCAGCACTCTGACCCTGACAAAGGACGAGTACGAGAGGCACAACTCCTACACATGCGAGGCCA
CACACAAGACCAGCACATCCCCAATCGTGAAGTCCTTCAACCGGAACGAGTGC (SEQ ID NO: 130)

FIG. 25C (cont'd)

>mPalivizumab variable light chain coding sequence in mouse anti-RSV emAb AAV
GACATCCAGCTGACACAGAGCCCTGCCATCATGTCTGCTAGCCCTGGCGAGAAAGTGACAATGACCTGTTCCGCCAGCAGCTC
CGTGGGCTACATGCACTGGTATCAGCAGAAGTCTAGCACAAGCCCCAAGCTGTGGATCTACGACACCTCCAAGCTGGCCTCTG
GCGTGCCAGGCAGATTTTCTGGAAGCGGCAGCGGCAACAGCTACAGCCTGACTATCAGCTCCATCCAGGCCGAGGATGTGGCT
ACCTACTACTGCTTCAGAGGCAGCGGCTACCCCTTCACATTTGGCCAGGGCACCAAGCTGGAAATCAAG (SEQ ID NO: 131)

>mIgL kappa constant light chain coding sequence in mouse anti-RSV emAb AAV
GCCGATGCCGCTCCTACCGTGTCTATCTTTCCACCTAGCAGCGAGCAGCTGACATCTGGCGGAGCCTCTGTCGTGTGCTTCCTG
AACAACTTCTACCCTAAGGACATCAACGTCAAGTGGAAGATCGACGGCTCCGAGAGACAGAACGGCGTGCTGAACTCTTGGACC
GACCAGGACAGCAAGGATAGCACCTACAGCATGAGCAGCACTCTGACCCTGACAAAGGACGAGTACGAGAGGCACAACTCCTA
CACATGCGAGGCCACACACAAGACCAGCACATCCCCAATCGTGAAGTCCTTCAACCGGAACGAGTGC (SEQ ID NO: 132)

>GSSG-streptag linker coding sequence in mouse anti-RSV emAb AAV is SEQ ID NO: 116

>mPalivizumab variable heavy chain coding sequence in mouse anti-RSV emAb AAV
CAGGTGGAACTGCAAGAAAGCGGCCCTGGCATCCTGCAGCCTTCTCAGACACTGAGCCTGACCTGTAGCTTCAGCGGCTTCAG
CCTGAGCACAAGCGGCATGTCTGTCGGCTGGATCAGACAGCCTTCTGGCGAAGGACTGGAATGGCTGGCCGACATTTGGTGGG
ACGACAAGAAGGACTACAACCCCAGCCTGAAGTCCAGACTGACCATCAGCAAGGACACCAGCAGCAACCAGGTGTTCCTGAAG
ATCACCGGCGTGGACACAGCCGATACCGCCACCTATTACTGCGCCAGATCCATGATCACCAACTGGTACTTCGACGTGTGGGG
CGCTGGCACCACAGTGACCGTCTCCTCA (SEQ ID NO: 133)

>Signal peptide amino acid sequence in mouse anti-RSV emAb AAV
METDTLLLWVLLLWVPGSTG (SEQ ID NO: 134)

>mRSV kappa light chain amino acid sequence in mouse anti-RSV emAb AAV
METDTLLLWVLLLWVPGSTGDIQLTQSPAIMSASPGEKVTMTCSASSSVGYMHWYQQKSSTSPKLWIYDTSKLASGVPGRFSGSGSG
NSYSLTISSIQAEDVATYYCFRGSGYPFTFGQGTKLEIKADAAPTVSIFPPSSEQLTSGGASVVCFLNNFYPKDINVKWKIDGSERQNGV
LNSWTDQDSKDSTYSMSSTLTLTKDEYERHNSYTCEATHKTSTSPIVKSFNRNEC (SEQ ID NO: 135)

FIG. 25C (cont'd)

>mPalivizumab variable light chain amino acid sequence in mouse anti-RSV emAb AAV
DIQLTQSPAIMSASPGEKVTMTCSASSSVGYMHWYQQKSSTSPKLWIYDTSKLASGVPGRFSGSGSGNSYSLTISSIQAEDVATYYCF
RGSGYPFTFGQGTKLEIK (SEQ ID NO: 136)

>mIgL kappa constant light chain amino acid sequence in mouse anti-RSV emAb AAV
ADAAPTVSIFPPSSEQLTSGGASVVCFLNNFYPKDINVKWKIDGSERQNGVLNSWTDQDSKDSTYSMSSTLTLTKDEYERHNSYTCEA
THKTSTSPIVKSFNRNEC (SEQ ID NO: 137)

>GSSG-streptag linker amino acid sequence in mouse anti-RSV emAb AAV is SEQ ID NO: 122

>mPalivizumab variable heavy chain amino acid sequence mouse anti-RSV emAb AAV
QVELQESGPGILQPSQTLSLTCSFSGFSLSTSGMSVGWIRQPSGEGLEWLADIWWDDKKDYNPSLKSRLTISKDTSSNQVFLKITGVD
TADTATYYCARSMITNWYFDVWGAGTTVTVSS (SEQ ID NO: 138)

>splice junction with flanking sequence in mouse anti-RSV emAb AAV
CAGGTGAGTCCTAACTTCTCCCATTCTAAATGCATGTTGGGGGGATTCTGGGCCTTCAGGACCA (SEQ ID NO: 139)

>Mouse mB3 Balb/C downstream region in mouse anti-RSV emAb AAV
CATAGGGACAAAGAGTGGAGTGGGGCACTTTCTTTAGATTTGTGAGGAATGTTCCGCACTAGATTGTTTAAAACTTCATTTGTTG
GAAGGAGAGCTGTCTTAGTGATTGAGTCAAGGGAGAAAGGCATCTAGCCTCGGTCTCAAAAGGGTAGTTGCTGTCTAGAGAGGT
CTGGTGGAGCCTGCAAAAGTCCAGCTTTCAAAGGAACACAGAAGTATGTGTATGGAATATTAGAAGATGTTGCTTTTACTCTTAA
GTTGGTTCCTAGGAAAAATAGTTAAATACTGTGACTTTAAAATGTGAGAGGGTTTTCAAGTACTCATTTTTTTAAATGTCCAAAATT
TTTGTCAATCAGTTTGAGGTCTTGTTTGTGTAGAACTGATATTACTTAAAGTTTAACCGAGGAATGGGAGTGAGGCTCTCTCATAA
CCTATTCAGAACTGACTTTTAACAATAATAAATTAAGTTTAAAATATTTTTAAATGAATTGAGCAATGTTGAGTTGGAGTCAAGATG
GCCGATCAGAACCAGAACACCTGCAGCAGCTGGCAGGAAGCAGGTCATGTGGCAAGGCTATTTGGGGAAGGGAAAATAAAACC
ACTAGGTAAACTTGTAGCTGTGGTTTGAAGAAGTGGTTTTGAAACACTCTGTCCAGCCCCACCAAACCGAAAGTCCAGGCTGAG
CAAAACACCACCTGGGTAATTTGCATTTCTAAAATAAGTTGAGGATTCAGCCGAAACTGGAGAGGTCCTCTTTTAACTTATTGAGT
TCAACCTTTTAATTTTAGCTTGAGTAGTTCTAGTTTCCCCAAACTTAAGTTTATCGACTTCTAAAATGTATTTAGAATTCATTTTCAA
AATTAGGTTATGTAAGAAATTGAAGGACTTTAGTGTCTTTAATTTCTAATATATTTAGAAAACTTCTTAAAATTACTCTATTATTCTTC
CCTCTGATTATTGGTCTCCATTCA (SEQ ID NO: 140)

FIG. 25C (cont'd)

>mRSV kappa light chain coding sequence without signal sequence in mouse anti-RSV emAb AAV
GACATCCAGCTGACACAGAGCCCTGCCATCATGTCTGCTAGCCCTGGCGAGAAAGTGACAATGACCTGTTCCGCCAGCAGCTC
CGTGGGCTACATGCACTGGTATCAGCAGAAGTCTAGCACAAGCCCCAAGCTGTGGATCTACGACACCTCCAAGCTGGCCTCTG
GCGTGCCAGGCAGATTTTCTGGAAGCGGCAGCGGCAACAGCTACAGCCTGACTATCAGCTCCATCCAGGCCGAGGATGTGGCT
ACCTACTACTGCTTCAGAGGCAGCGGCTACCCCTTCACATTTGGCCAGGGCACCAAGCTGGAAATCAAGGCCGATGCCGCTCC
TACCGTGTCTATCTTTCCACCTAGCAGCGAGCAGCTGACATCTGGCGGAGCCTCTGTCGTGTGCTTCCTGAACAACTTCTACCCT
AAGGACATCAACGTCAAGTGGAAGATCGACGGCTCCGAGAGACAGAACGGCGTGCTGAACTCTTGGACCGACCAGGACAGCAA
GGATAGCACCTACAGCATGAGCAGCACTCTGACCCTGACAAAGGACGAGTACGAGAGGCACAACTCCTACACATGCGAGGCCA
CACACAAGACCAGCACATCCCCAATCGTGAAGTCCTTCAACCGGAACGAGTGC (SEQ ID NO: 281)

>mRSV kappa light chain amino acid sequence without signal peptide in mouse anti-RSV emAb AAV
DIQLTQSPAIMSASPGEKVTMTCSASSSVGYMHWYQQKSSTSPKLWIYDTSKLASGVPGRFSGSGSGNSYSLTISSIQAEDVATYYCF
RGSGYPFTFGQGTKLEIKADAAPTVSIFPPSSEQLTSGGASVVCFLNNFYPKDINVKWKIDGSERQNGVLNSWTDQDSKDSTYSMSST
LTLTKDEYERHNSYTCEATHKTSTSPIVKSFNRNEC (SEQ ID NO: 286)

FIG. 25D

ms-emAb-RSV-dsDNA (1736 bp)

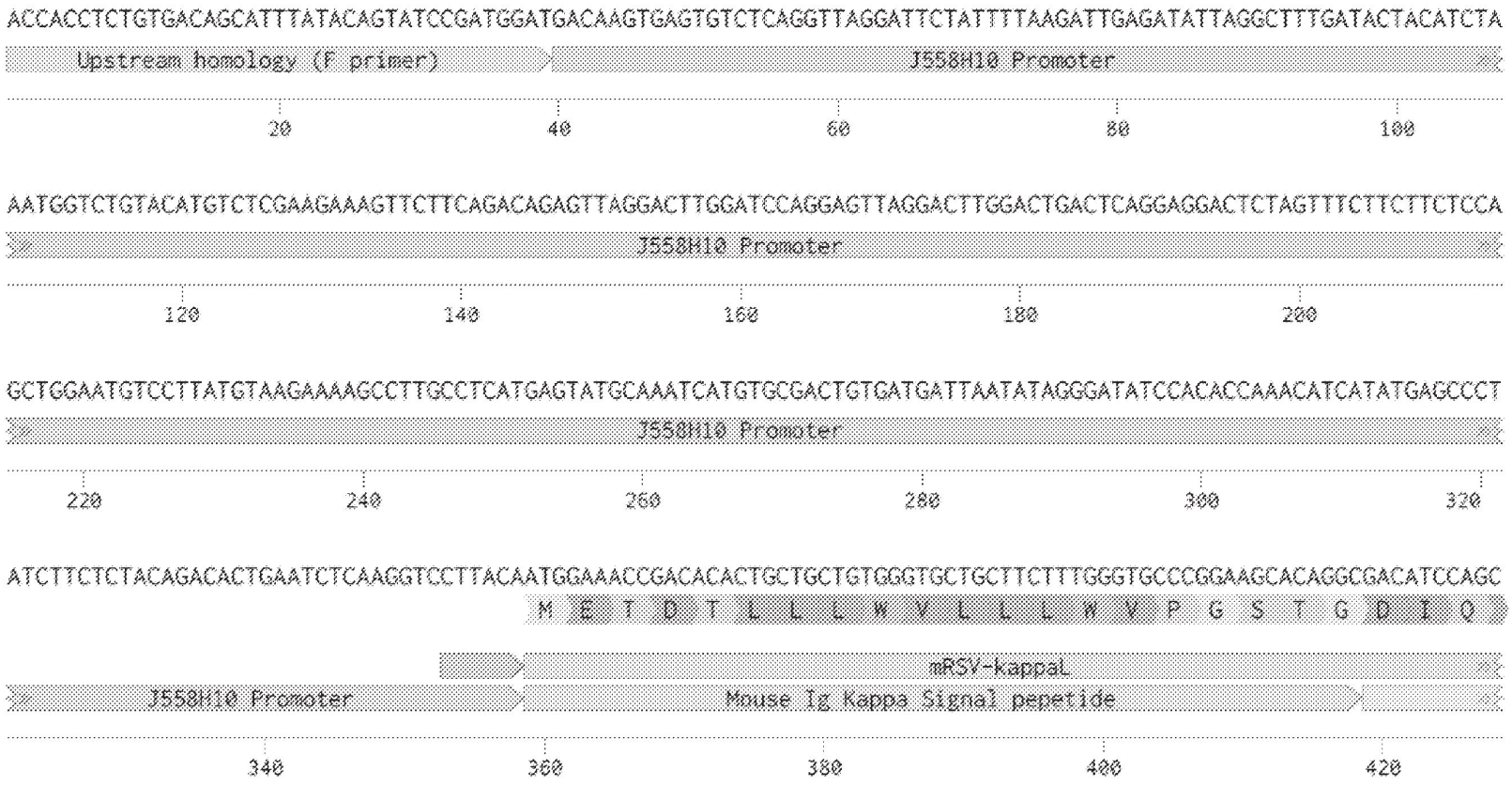


FIG. 25D (cont'd)

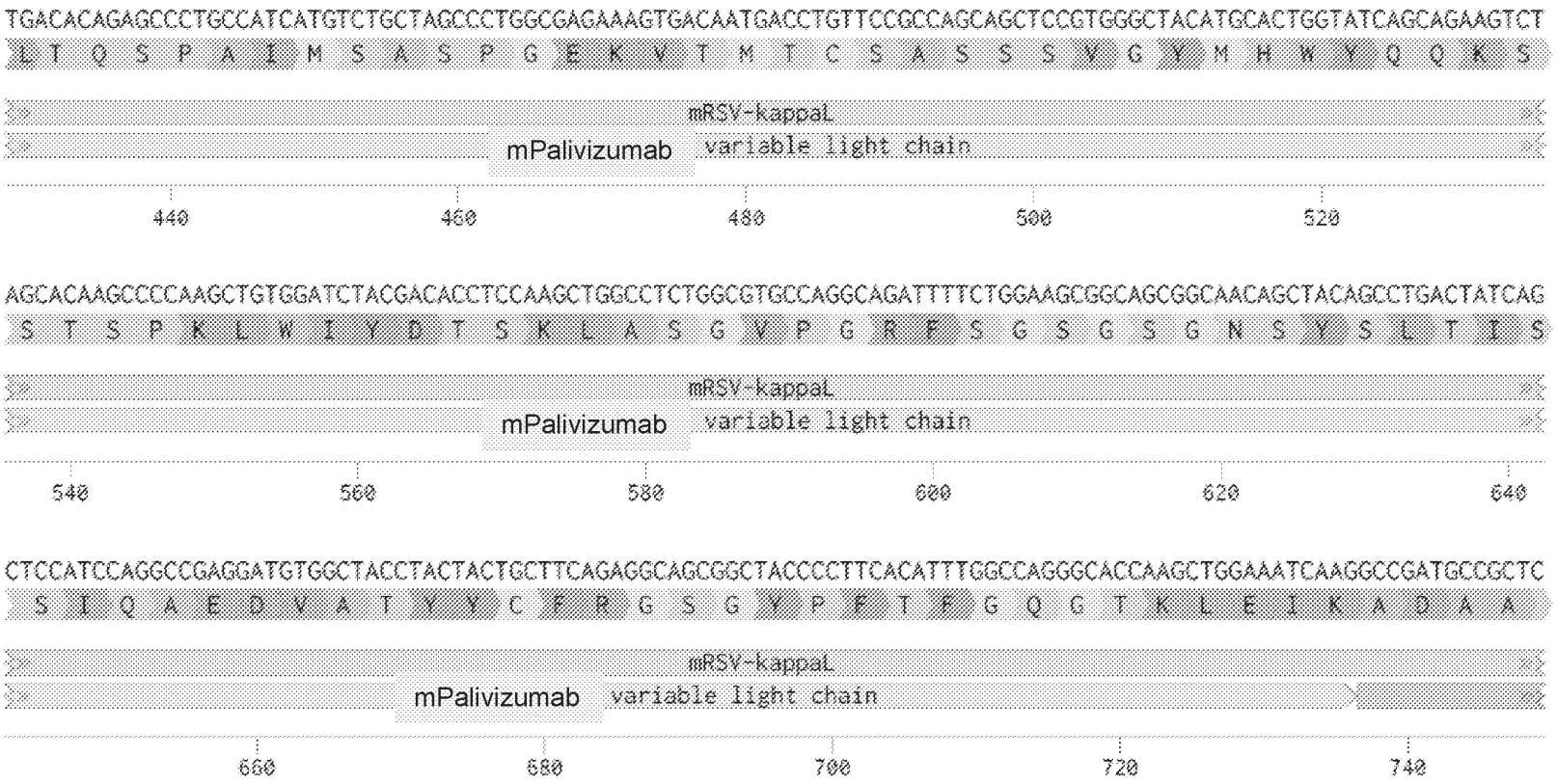


FIG. 25D (cont'd)

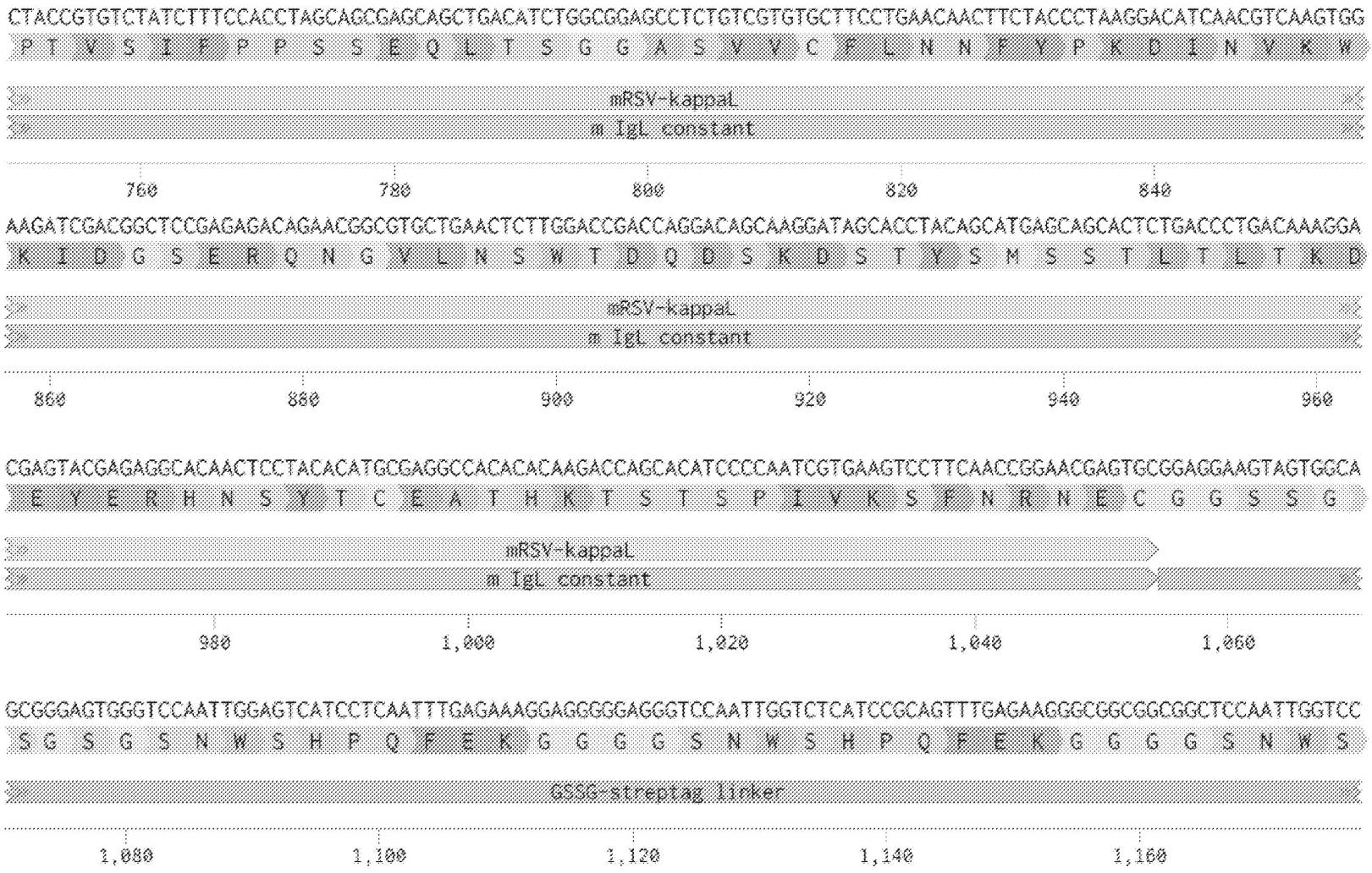


FIG. 25D (cont'd)

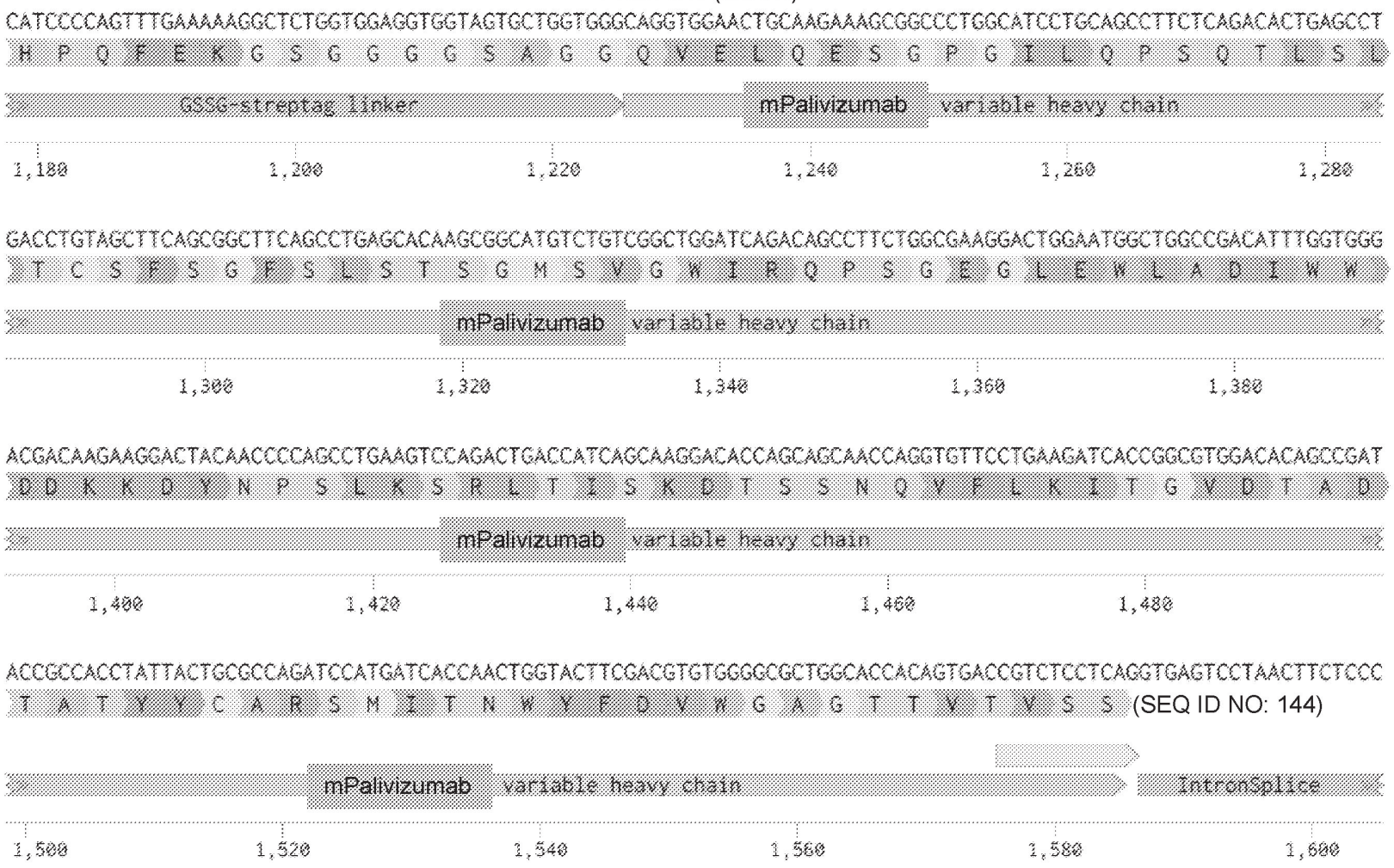


FIG. 25D (cont'd)

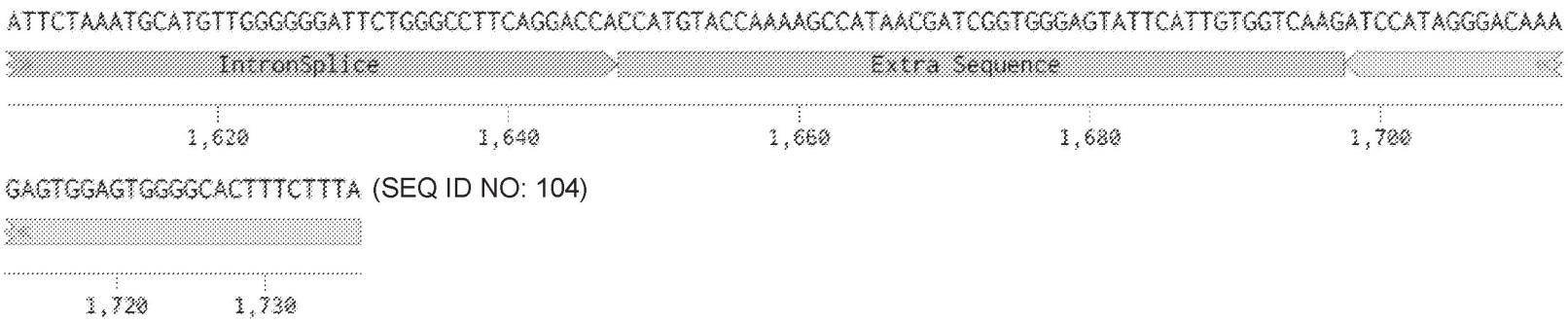


FIG. 25D (cont'd)

>Upstream homology sequence (F primer) in ms-emAb-RSV-dsDNA

ACCACCTCTGTGACAGCATTTATACAGTATCCGATGGAT (SEQ ID NO: 142)

>J558H10 promoter in ms-emAb-RSV-dsDNA is SEQ ID NO: 128

>Signal peptide coding sequence in ms-emAb-RSV-dsDNA is SEQ ID NO: 129

>mPalivizumab light chain coding sequence in ms-emAb-RSV-dsDNA is SEQ ID NO: 130

>mPalivizumab variable light chain coding sequence in ms-emAb-RSV-dsDNA is SEQ ID NO: 131

>mPalivizumab kappa constant light chain coding sequence in ms-emAb-RSV-dsDNA is SEQ ID NO: 132

>GSSG-streptag linker coding sequence in ms-emAb-RSV-dsDNA is SEQ ID NO: 116

>mPalivizumab variable heavy chain coding sequence in ms-emAb-RSV-dsDNA is SEQ ID NO: 133

>Signal peptide amino acid sequence in ms-emAb-RSV-dsDNA is SEQ ID NO: 134

>mPalivizumab light chain amino acid sequence in ms-emAb-RSV-dsDNA is SEQ ID NO: 135

>mPalivizumab variable light chain amino acid sequence in ms-emAb-RSV-dsDNA is SEQ ID NO: 136

>mPalivizumab kappa constant light chain amino acid sequence in ms-emAb-RSV-dsDNA is SEQ ID NO: 137

>GSSG-streptag linker amino acid sequence in ms-emAb-RSV-dsDNA is SEQ ID NO: 122

>mPalivizumab variable heavy chain amino acid sequence in ms-emAb-RSV-dsDNA is SEQ ID NO: 138

>splice junction with flanking sequence in in ms-emAb-RSV-dsDNA is SEQ ID NO: 139

>Downstream homology sequence in ms-emAb-RSV-dsDNA
ATCCATAGGGACAAAGAGTGGAGTGGGGCACTTTCTTTA (SEQ ID NO: 143)

>mPalivizumab light chain coding sequence without signal sequence in ms-emAb-RSV-dsDNA is SEQ ID NO: 281

>mPalivizumab light chain amino acid sequence without signal peptide in ms-emAb-RSV-dsDNA is SEQ ID NO: 286

FIG. 25E
hu-emAb-VRC01-AAV (2551 bp)

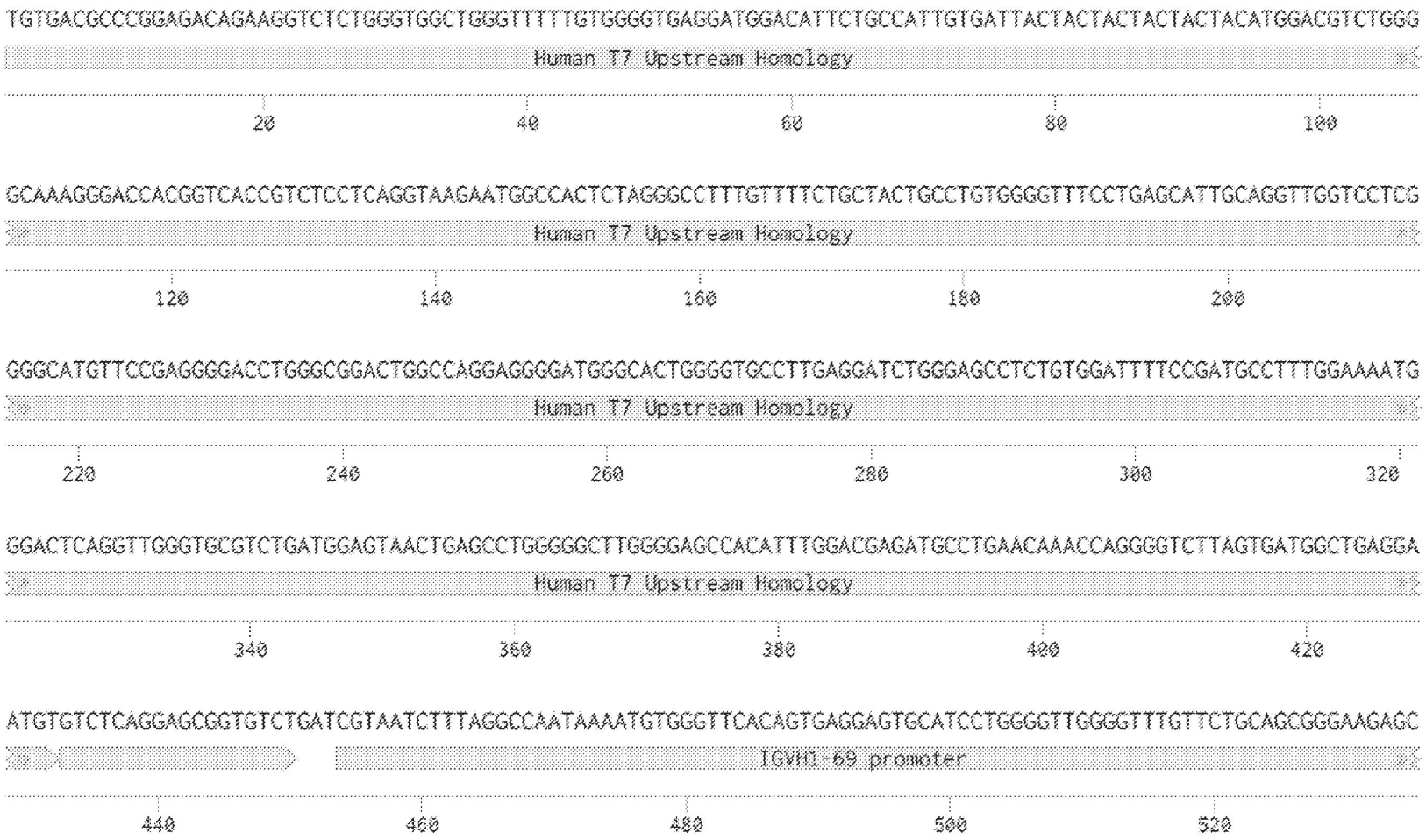


FIG. 25E (cont'd)

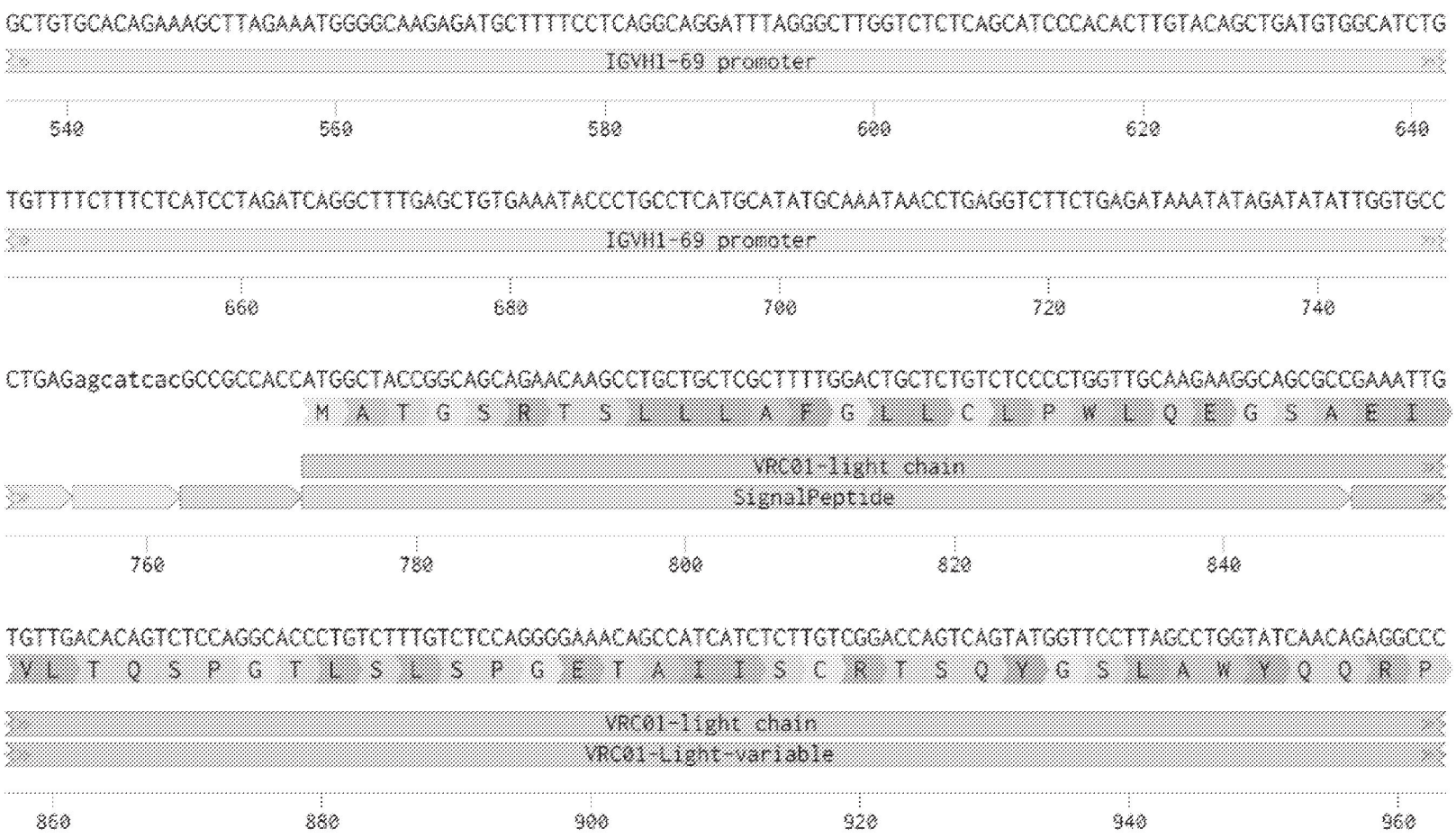


FIG. 25E (cont'd)

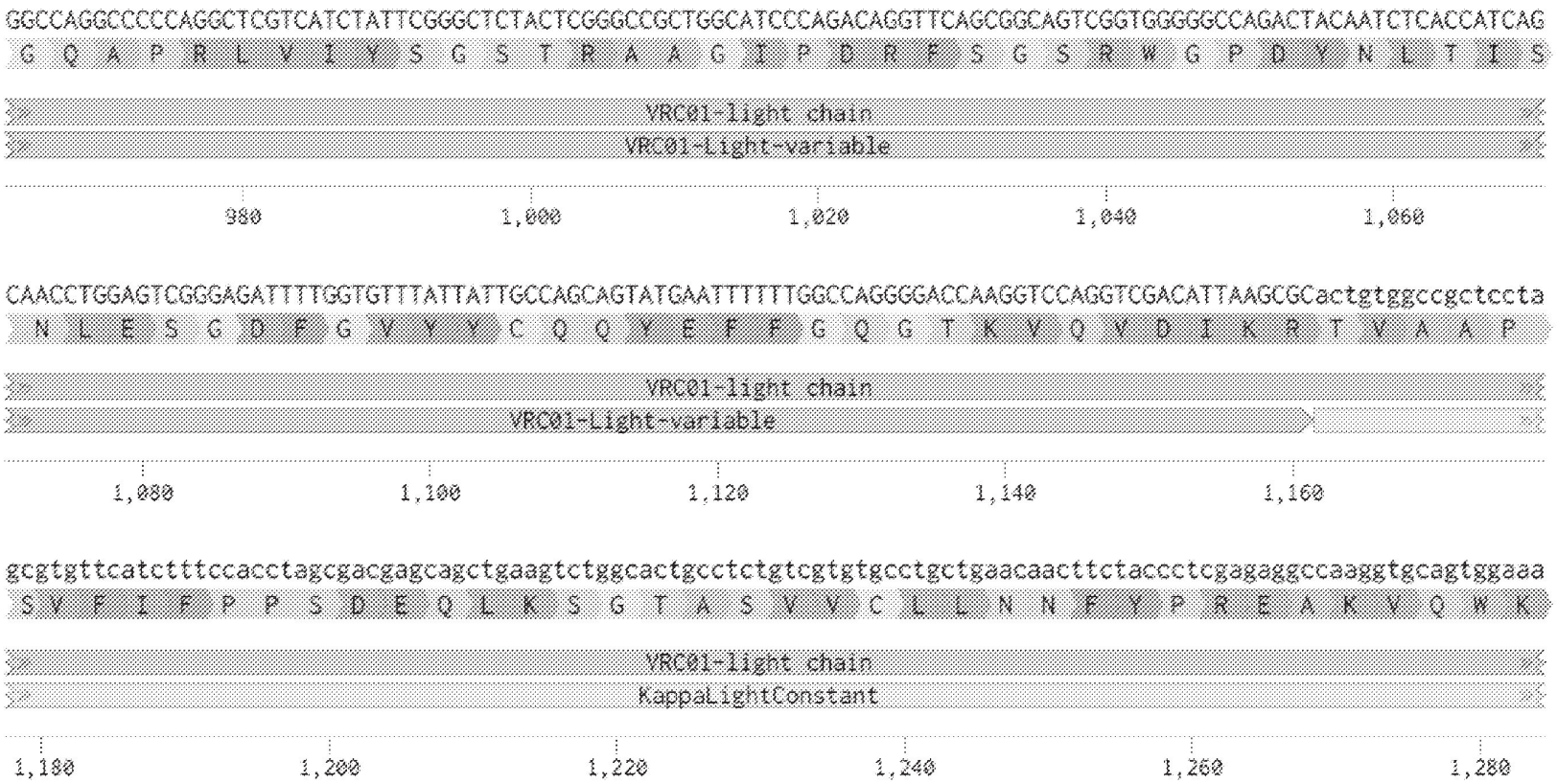


FIG. 25E (cont'd)

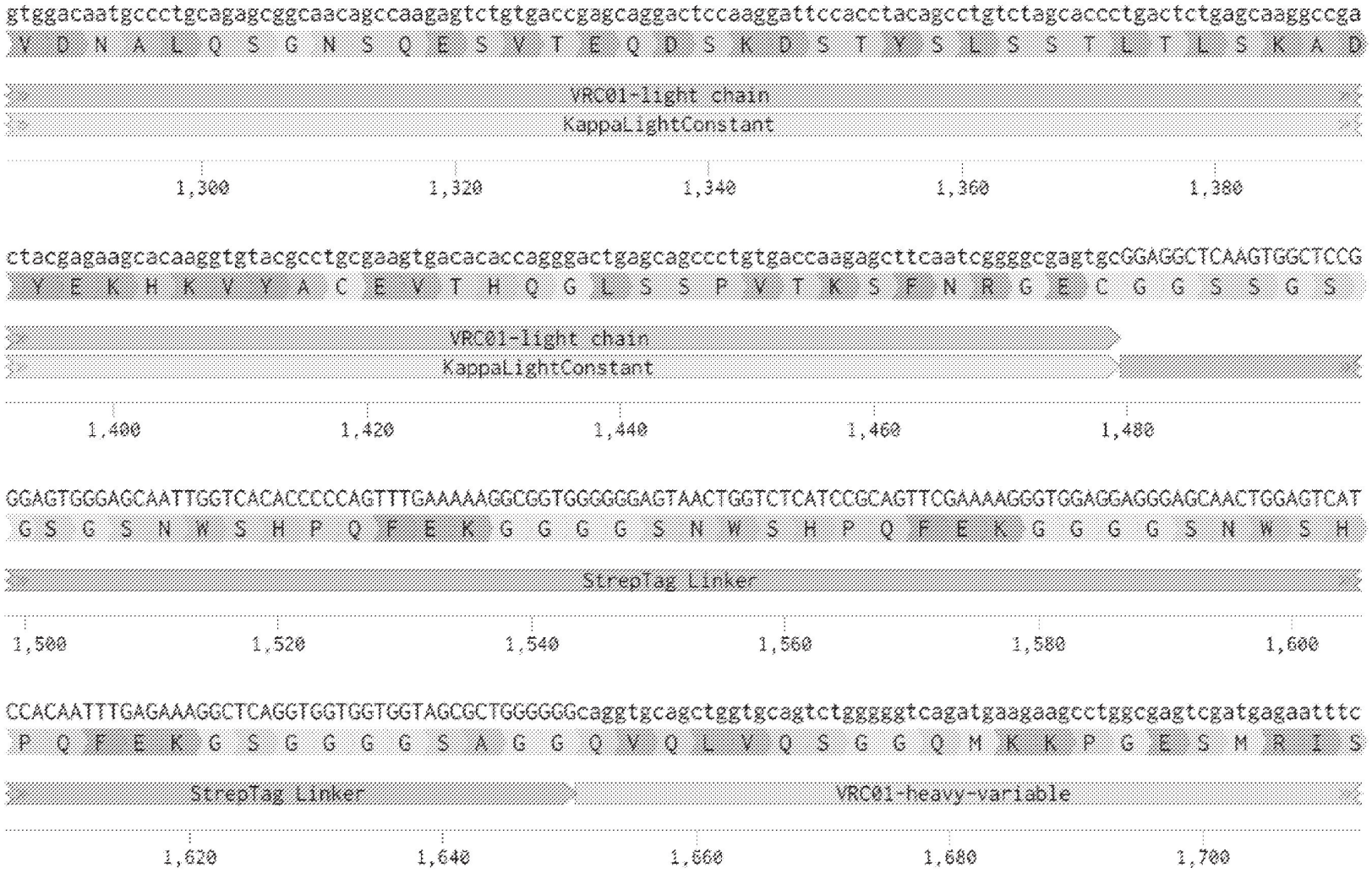


FIG. 25E (cont'd)

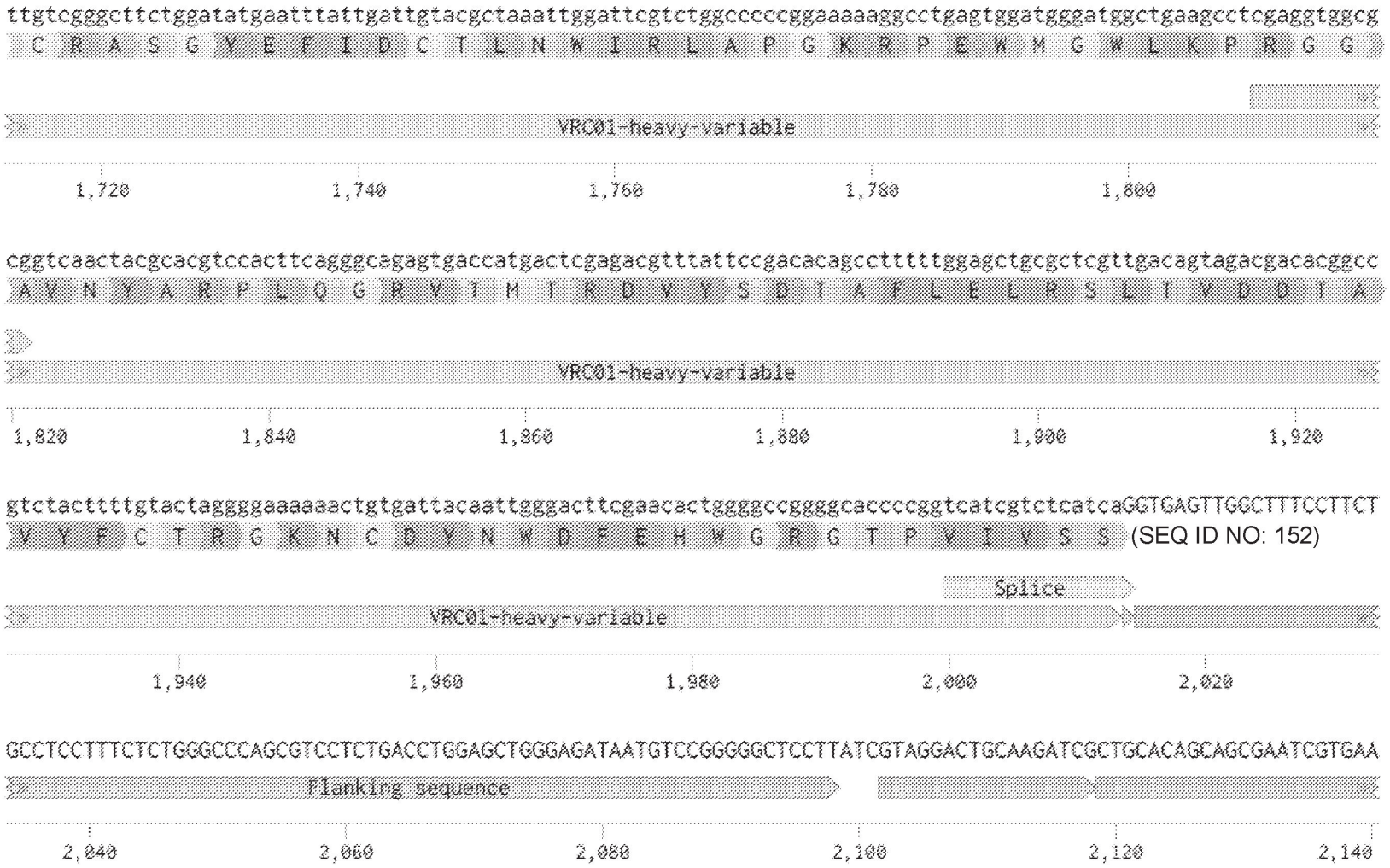
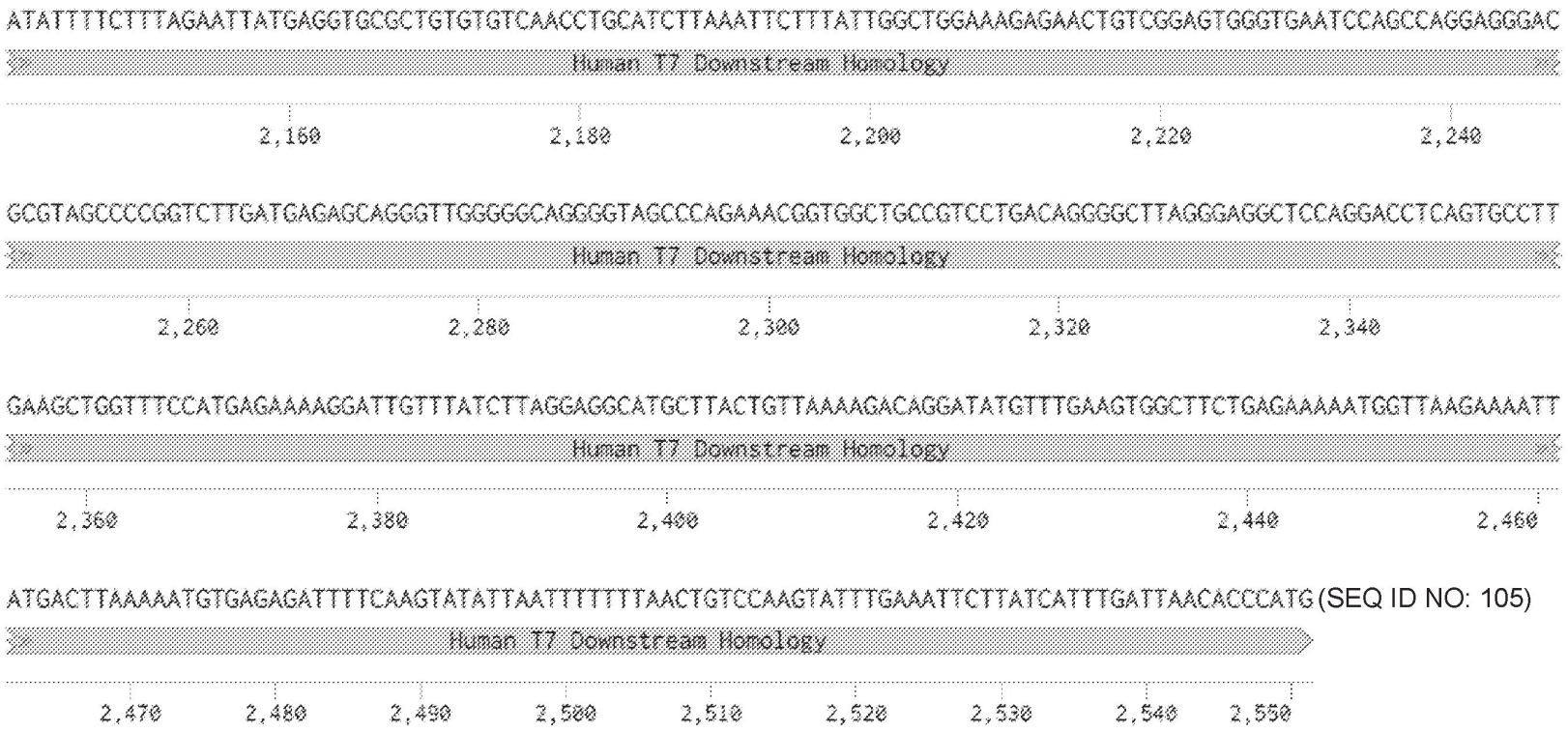


FIG. 25E (cont'd)



(SEQ ID NO: 105)

FIG. 25E (cont'd)

>Human T7 upstream homology in Hu-emAb-VRC01-AAV is SEQ ID NO: 110

>IgVH1-69 promoter in Hu-emAb-VRC01-AAV is SEQ ID NO: 111

>Signal peptide coding sequence in Hu-emAb-VRC01-AAV is SEQ ID NO: 112

>VRC01 light chain coding sequence in Hu-emAb-VRC01-AAV
ATGGCTACCGGCAGCAGAACAAGCCTGCTGCTCGCTTTTGGACTGCTCTGTCTCCCCTGGTTGCAAGAAGGCAGCGCCGAAATT
GTGTTGACACAGTCTCCAGGCACCCTGTCTTTGTCTCCAGGGGAAACAGCCATCATCTCTTGTCGGACCAGTCAGTATGGTTCC
TTAGCCTGGTATCAACAGAGGCCCGGCCAGGCCCCCAGGCTCGTCATCTATTCGGGCTCTACTCGGGCCGCTGGCATCCCAGA
CAGGTTCAGCGGCAGTCGGTGGGGGCCAGACTACAATCTCACCATCAGCAACCTGGAGTCGGGAGATTTTGGTGTTTATTATTG
CCAGCAGTATGAATTTTTTGGCCAGGGGACCAAGGTCCAGGTCGACATTAAGCGCACTGTGGCCGCTCCTAGCGTGTTCATCTT
TCCACCTAGCGACGAGCAGCTGAAGTCTGGCACTGCCTCTGTCGTGTGCCTGCTGAACAACTTCTACCCTCGAGAGGCCAAGG
TGCAGTGGAAAGTGGACAATGCCCTGCAGAGCGGCAACAGCCAAGAGTCTGTGACCGAGCAGGACTCCAAGGATTCCACCTAC
AGCCTGTCTAGCACCCTGACTCTGAGCAAGGCCGACTACGAGAAGCACAAGGTGTACGCCTGCGAAGTGACACACCAGGGACT
GAGCAGCCCTGTGACCAAGAGCTTCAATCGGGGCGAGTGC (SEQ ID NO: 145)

>VRC01 variable light chain coding sequence in Hu-emAb-VRC01-AAV
GAAATTGTGTTGACACAGTCTCCAGGCACCCTGTCTTTGTCTCCAGGGGAAACAGCCATCATCTCTTGTCGGACCAGTCAGTATG
GTTCCTTAGCCTGGTATCAACAGAGGCCCGGCCAGGCCCCCAGGCTCGTCATCTATTCGGGCTCTACTCGGGCCGCTGGCATC
CCAGACAGGTTCAGCGGCAGTCGGTGGGGGCCAGACTACAATCTCACCATCAGCAACCTGGAGTCGGGAGATTTTGGTGTTTA
TTATTGCCAGCAGTATGAATTTTTTGGCCAGGGGACCAAGGTCCAGGTCGACATTAAGCGC (SEQ ID NO: 146)

>Kappa constant light chain coding sequence in Hu-emAb-VRC01-AAV is SEQ ID NO: 115

>GSSG-streptag linker coding sequence in Hu-emAb-VRC01-AAV is SEQ ID NO: 116

>VRC01 variable heavy chain coding sequence in Hu-emAb-VRC01-AAV
CAGGTGCAGCTGGTGCAGTCTGGGGGTCAGATGAAGAAGCCTGGCGAGTCGATGAGAATTTCTTGTCGGGCTTCTGGATATGA
ATTTATTGATTGTACGCTAAATTGGATTCGTCTGGCCCCCGGAAAAAGGCCTGAGTGGATGGGATGGCTGAAGCCTCGAGGTGG
CGCGGTCAACTACGCACGTCCACTTCAGGGCAGAGTGACCATGACTCGAGACGTTTATTCCGACACAGCCTTTTTGGAGCTGCG
CTCGTTGACAGTAGACGACACGGCCGTCTACTTTTGTACTAGGGGAAAAAACTGTGATTACAATTGGGACTTCGAACACTGGGG
CCGGGGCACCCCGGTCATCGTCTCATCA (SEQ ID NO: 147)

FIG. 25E (cont'd)

>Signal peptide amino acid sequence in Hu-emAb-VRC01-AAV is SEQ ID NO: 118

>VRC01 light chain amino acid sequence in Hu-emAb-VRC01-AAV
MATGSRTSLLLAFGLLCLPWLQEGSAEIVLTQSPGTLSLSPGETAIISCRTSQYGSLAWYQQRPGQAPRLVIYSGSTRAAGIPDRFSGS
RWGPDYNLTISNLESGDFGVYYCQQYEFFGQGTKVQVDIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNAL
QSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC (SEQ ID NO: 148)

>VRC01 variable light chain amino acid sequence in Hu-emAb-VRC01-AAV
EIVLTQSPGTLSLSPGETAIISCRTSQYGSLAWYQQRPGQAPRLVIYSGSTRAAGIPDRFSGSRWGPDYNLTISNLESGDFGVYYCQQ
YEFFGQGTKVQVDIKR (SEQ ID NO: 149)

>Kappa constant light chain amino acid sequence in Hu-emAb-VRC01-AAV is SEQ ID NO: 121

>GSSG-streptag linker amino acid sequence in Hu-emAb-VRC01-AAV is SEQ ID NO: 122

>VRC01 variable heavy chain amino acid sequence in Hu-emAb-VRC01-AAV
QVQLVQSGGQMKKPGESMRISCRASGYEFIDCTLNWIRLAPGKRPEWMGWLKPRGGAVNYARPLQGRVTMTRDVYSDTAFLELRSL
TVDDTAVYFCTRGKNCDYNWDFEHWGRGTPVIVSS (SEQ ID NO: 150)

>splice junction with flanking sequence in constructs of the disclosure
CAGGTGAGTTGGCTTTCCTTCTGCCTCCTTTCTCTGGGCCCAGCGTCCTCTGACCTGGAGCTGGGAGATAATGTCCGGGGGCT
CCTT (SEQ ID NO: 151)

>Human T7 downstream homology in Hu-emAb-VRC01-AAV is SEQ ID NO: 125

FIG. 25E (cont'd)

>VRC01 light chain coding sequence without signal sequence in Hu-emAb-VRC01-AAV
GAAATTGTGTTGACACAGTCTCCAGGCACCCTGTCTTTGTCTCCAGGGGAAACAGCCATCATCTCTTGTCGGACCAGTCAGTATG
GTTCCTTAGCCTGGTATCAACAGAGGCCCGGCCAGGCCCCCAGGCTCGTCATCTATTCGGGCTCTACTCGGGCCGCTGGCATC
CCAGACAGGTTCAGCGGCAGTCGGTGGGGGCCAGACTACAATCTCACCATCAGCAACCTGGAGTCGGGAGATTTTGGTGTTTA
TTATTGCCAGCAGTATGAATTTTTTGGCCAGGGGACCAAGGTCCAGGTCGACATTAAGCGCACTGTGGCCGCTCCTAGCGTGTT
CATCTTTCCACCTAGCGACGAGCAGCTGAAGTCTGGCACTGCCTCTGTCGTGTGCCTGCTGAACAACTTCTACCCTCGAGAGGC
CAAGGTGCAGTGGAAAGTGGACAATGCCCTGCAGAGCGGCAACAGCCAAGAGTCTGTGACCGAGCAGGACTCCAAGGATTCCA
CCTACAGCCTGTCTAGCACCCTGACTCTGAGCAAGGCCGACTACGAGAAGCACAAGGTGTACGCCTGCGAAGTGACACACCAG
GGACTGAGCAGCCCTGTGACCAAGAGCTTCAATCGGGGCGAGTGC (SEQ ID NO: 282)

>VRC01 light chain amino acid sequence without signal peptide in Hu-emAb-VRC01-AAV
EIVLTQSPGTLSLSPGETAIISCRTSQYGSLAWYQQRPGQAPRLVIYSGSTRAAGIPDRFSGSRWGPDYNLTISNLESGDFGVYYCQQ
YEFFGQGTKVQVDIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLT
LSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC (SEQ ID NO: 287)

FIG. 25F
hu-emAb-Medi8852-AAV (2544 bp)

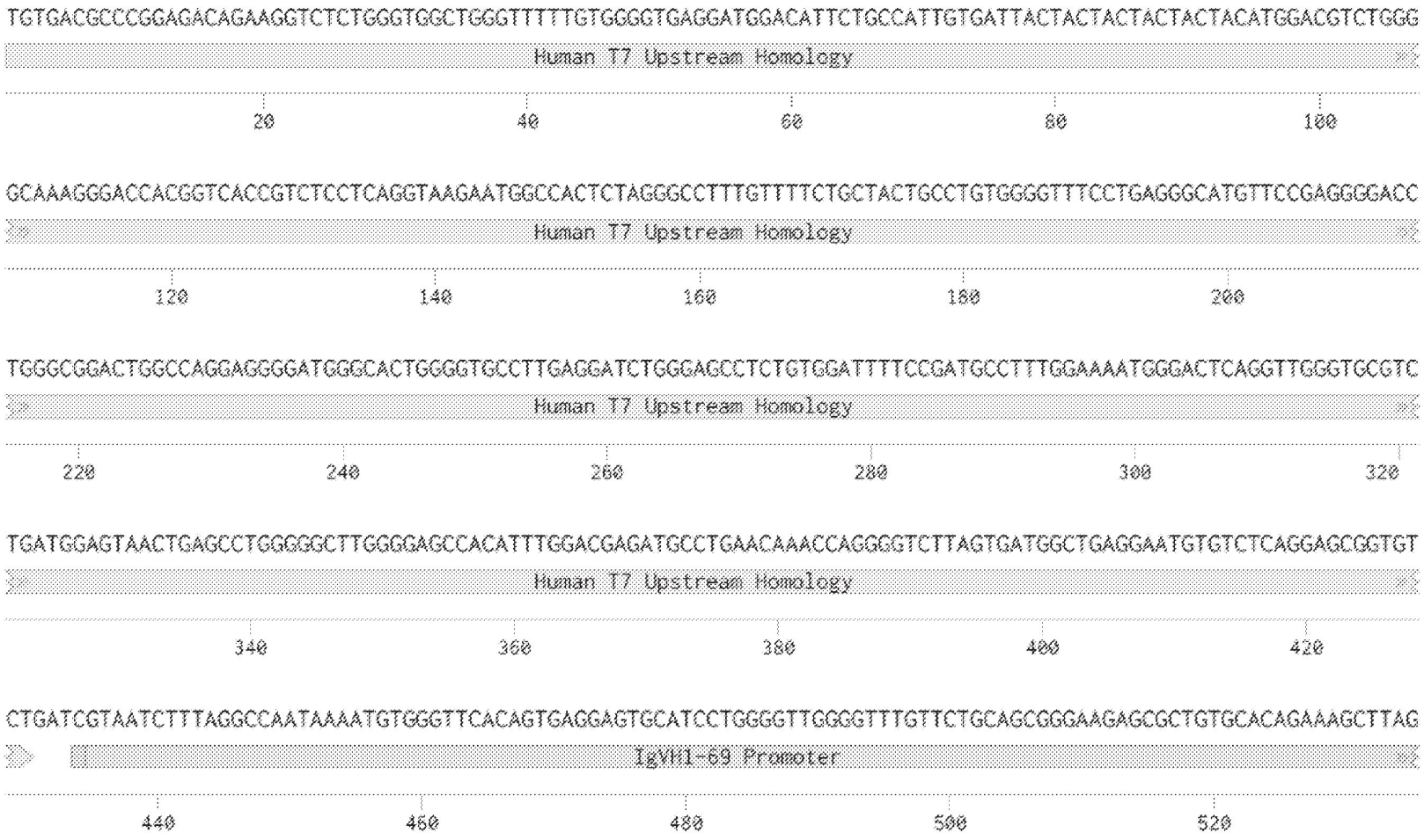


FIG. 25F (cont'd)

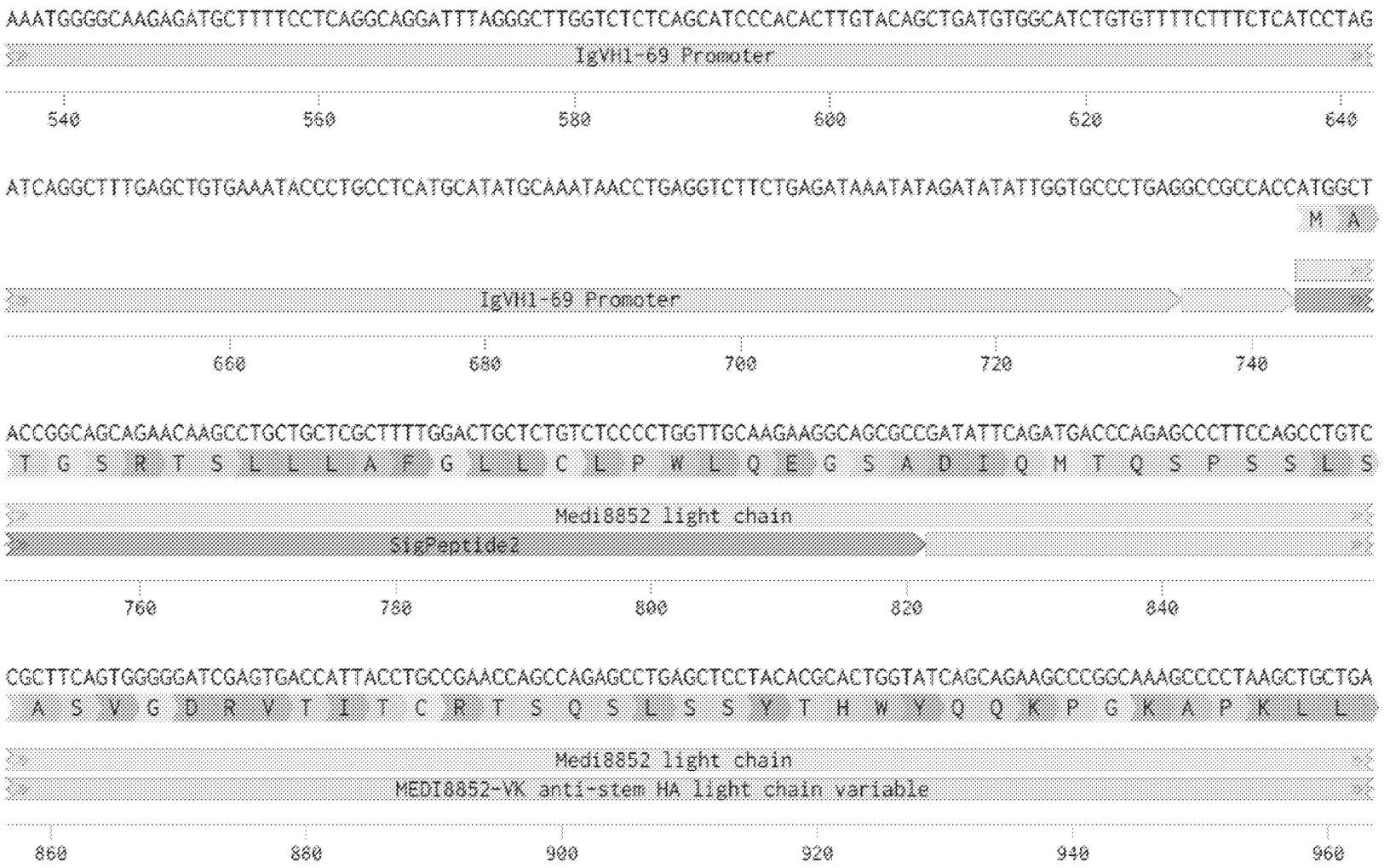


FIG. 25F (cont'd)

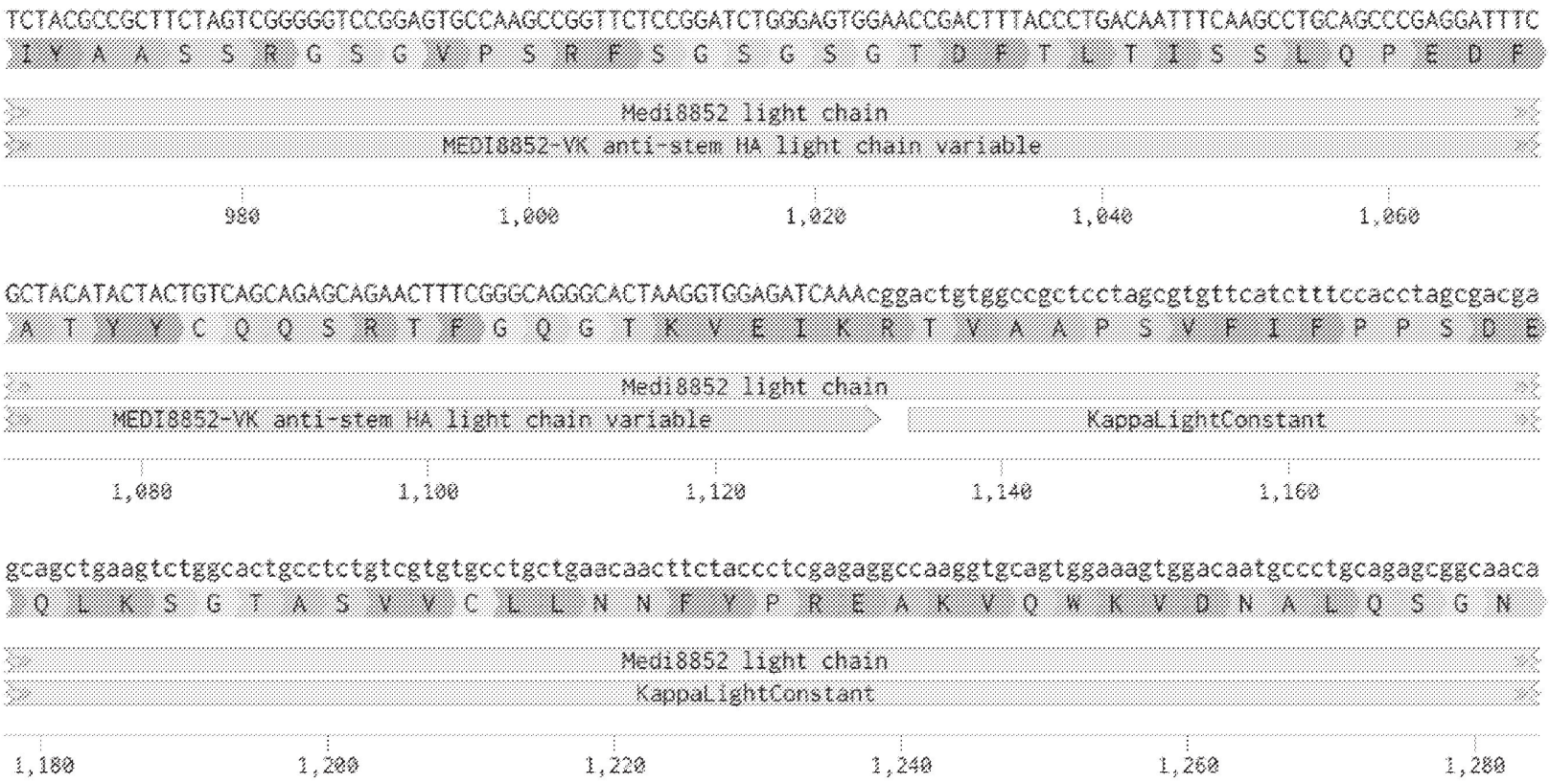


FIG. 25F (cont'd)

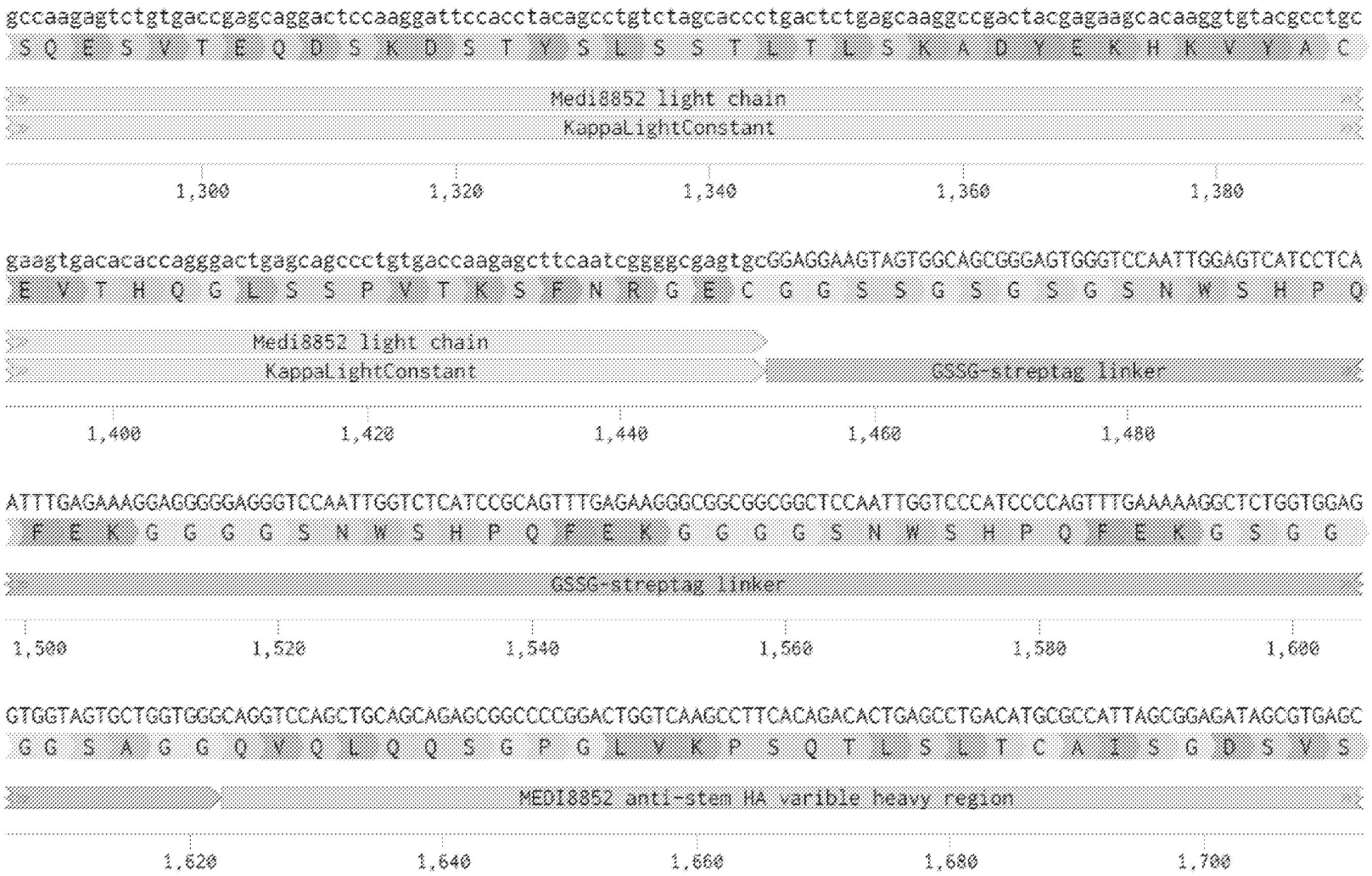


FIG. 25F (cont'd)

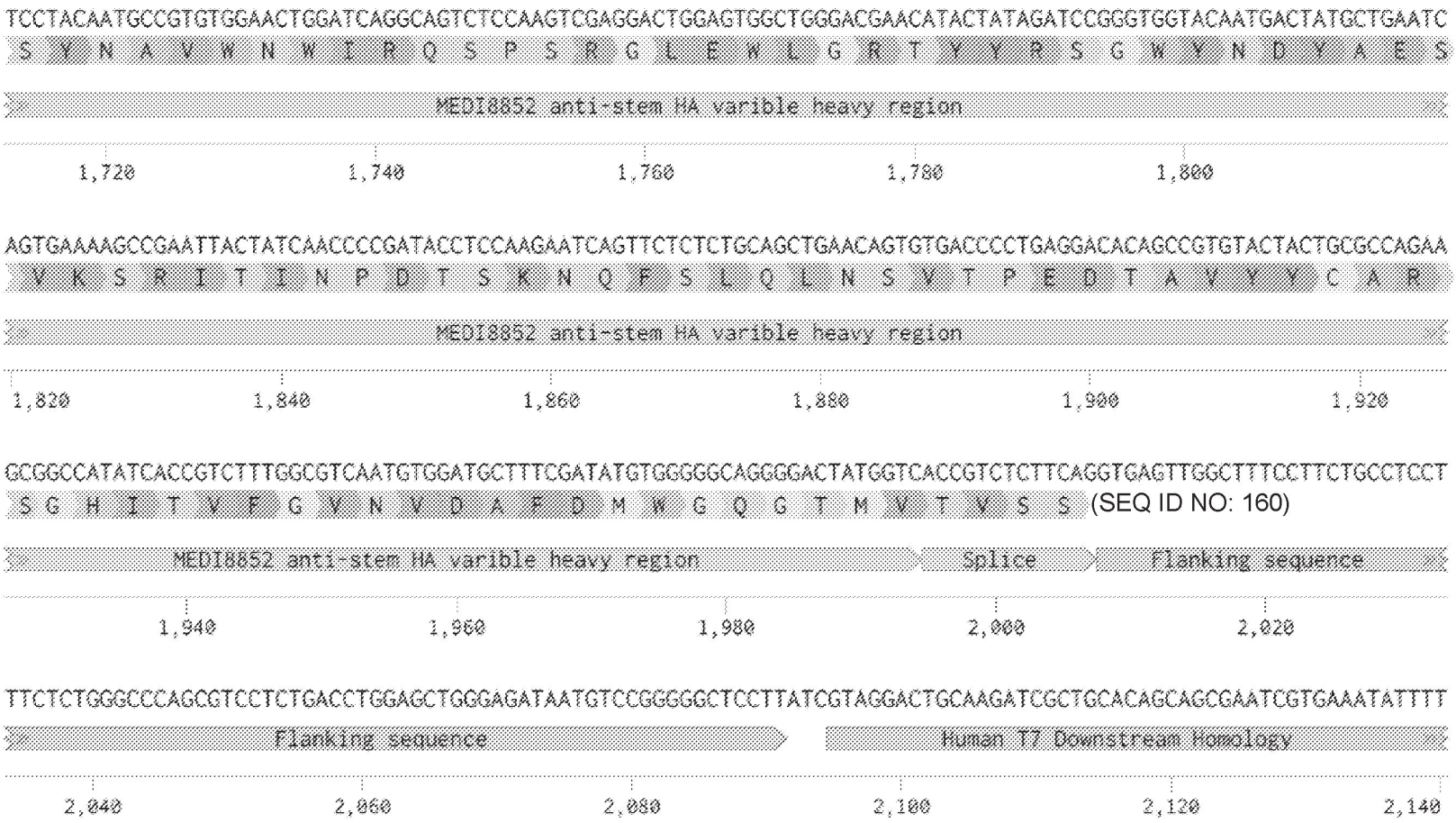
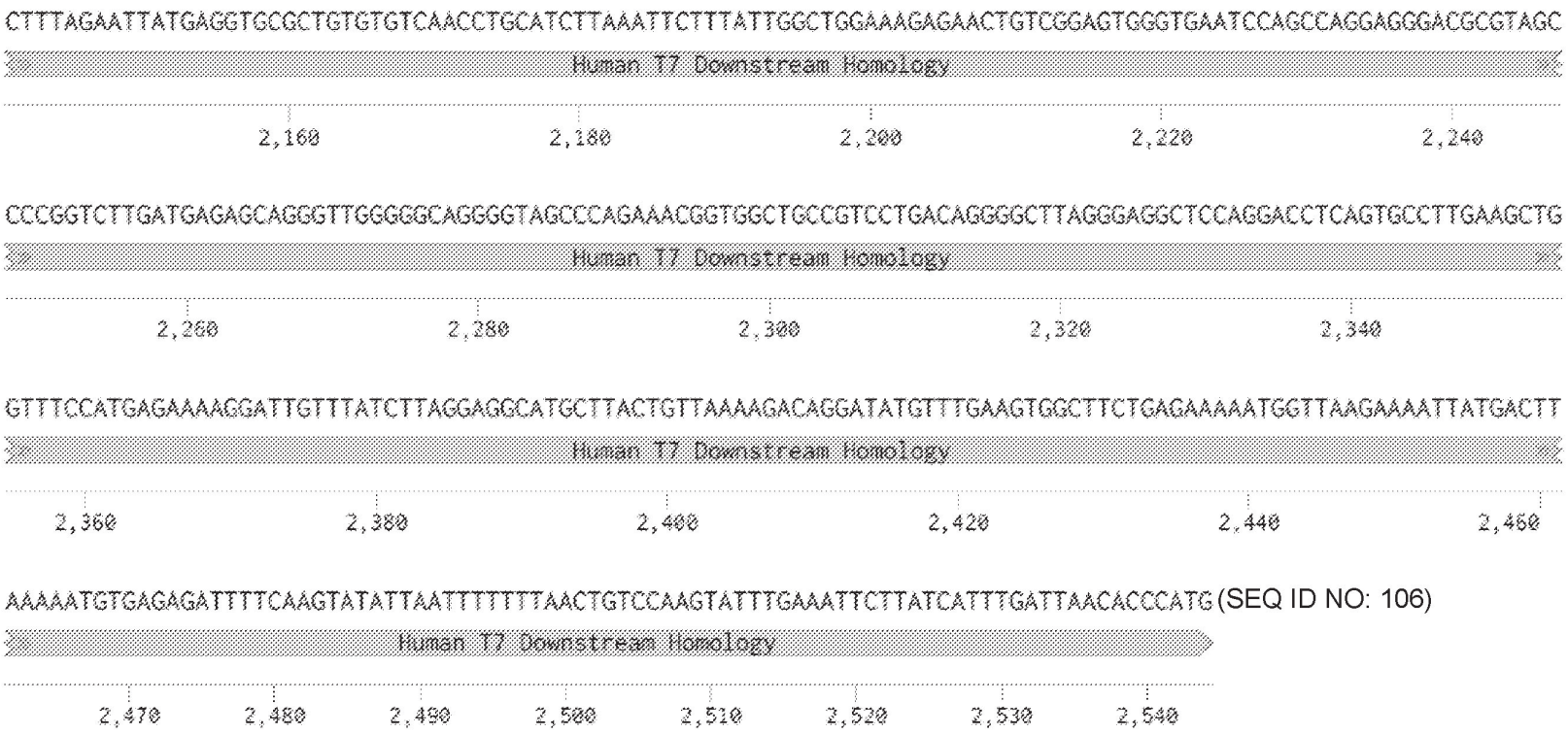


FIG. 25F (cont'd)



(SEQ ID NO: 106)

FIG. 25F (cont'd)

>human T7 upstream homology region in constructs of disclosure
TGTGACGCCCGGAGACAGAAGGTCTCTGGGTGGCTGGGTTTTTGTGGGGTGAGGATGGACATTCTGCCATTGTGATTACTACTA
CTACTACTACATGGACGTCTGGGGCAAAGGGACCACGGTCACCGTCTCCTCAGGTAAGAATGGCCACTCTAGGGCCTTTGTTTT
CTGCTACTGCCTGTGGGGTTTCCTGAGGGCATGTTCCGAGGGGACCTGGGCGGACTGGCCAGGAGGGGATGGGCACTGGGGT
GCCTTGAGGATCTGGGAGCCTCTGTGGATTTTCCGATGCCTTTGGAAAATGGGACTCAGGTTGGGTGCGTCTGATGGAGTAACT
GAGCCTGGGGGCTTGGGGAGCCACATTTGGACGAGATGCCTGAACAAACCAGGGGTCTTAGTGATGGCTGAGGAATGTGTCTC
AGGAGCGGTGTCT (SEQ ID NO: 153)

>IgVH1-69 promoter in hu-emAb-Medi8852-AAV is SEQ ID NO: 111

>Signal peptide coding sequence in hu-emAb-Medi8852-AAV is SEQ ID NO: 112

>Medi8852 light chain coding sequence in hu-emAb-Medi8852-AAV
ATGGCTACCGGCAGCAGAACAAGCCTGCTGCTCGCTTTTGGACTGCTCTGTCTCCCCTGGTTGCAAGAAGGCAGCGCCGATATT
CAGATGACCCAGAGCCCTTCCAGCCTGTCCGCTTCAGTGGGGGATCGAGTGACCATTACCTGCCGAACCAGCCAGAGCCTGAG
CTCCTACACGCACTGGTATCAGCAGAAGCCCGGCAAAGCCCCTAAGCTGCTGATCTACGCCGCTTCTAGTCGGGGGTCCGGAG
TGCCAAGCCGGTTCTCCGGATCTGGGAGTGGAACCGACTTTACCCTGACAATTTCAAGCCTGCAGCCCGAGGATTTCGCTACAT
ACTACTGTCAGCAGAGCAGAACTTTCGGGCAGGGCACTAAGGTGGAGATCAAACGGACTGTGGCCGCTCCTAGCGTGTTCATC
TTTCCACCTAGCGACGAGCAGCTGAAGTCTGGCACTGCCTCTGTCGTGTGCCTGCTGAACAACTTCTACCCTCGAGAGGCCAAG
GTGCAGTGGAAAGTGGACAATGCCCTGCAGAGCGGCAACAGCCAAGAGTCTGTGACCGAGCAGGACTCCAAGGATTCCACCTA
CAGCCTGTCTAGCACCCTGACTCTGAGCAAGGCCGACTACGAGAAGCACAAGGTGTACGCCTGCGAAGTGACACACCAGGGAC
TGAGCAGCCCTGTGACCAAGAGCTTCAATCGGGGCGAGTGC (SEQ ID NO: 154)

>MEDI8852-VK anti-stem HA variable light chain coding sequence in hu-emAb-Medi8852-AAV
GATATTCAGATGACCCAGAGCCCTTCCAGCCTGTCCGCTTCAGTGGGGGATCGAGTGACCATTACCTGCCGAACCAGCCAGAG
CCTGAGCTCCTACACGCACTGGTATCAGCAGAAGCCCGGCAAAGCCCCTAAGCTGCTGATCTACGCCGCTTCTAGTCGGGGGT
CCGGAGTGCCAAGCCGGTTCTCCGGATCTGGGAGTGGAACCGACTTTACCCTGACAATTTCAAGCCTGCAGCCCGAGGATTTC
GCTACATACTACTGTCAGCAGAGCAGAACTTTCGGGCAGGGCACTAAGGTGGAGATCAAA (SEQ ID NO: 155)

>Kappa constant light chain coding sequence in hu-emAb-Medi8852-AAV is SEQ ID NO: 115

>GSSG-streptag linker coding sequence in hu-emAb-Medi8852-AAV is SEQ ID NO: 116

FIG. 25F (cont'd)

>anti-stem HA variable heavy chain coding sequence in hu-emAb-Medi8852-AAV
CAGGTCCAGCTGCAGCAGAGCGGCCCCGGACTGGTCAAGCCTTCACAGACACTGAGCCTGACATGCGCCATTAGCGGAGATAG
CGTGAGCTCCTACAATGCCGTGTGGAACTGGATCAGGCAGTCTCCAAGTCGAGGACTGGAGTGGCTGGGACGAACATACTATA
GATCCGGGTGGTACAATGACTATGCTGAATCAGTGAAAAGCCGAATTACTATCAACCCCGATACCTCCAAGAATCAGTTCTCTCT
GCAGCTGAACAGTGTGACCCCTGAGGACACAGCCGTGTACTACTGCGCCAGAAGCGGCCATATCACCGTCTTTGGCGTCAATG
TGGATGCTTTCGATATGTGGGGGCAGGGGACTATGGTCACCGTCTCTTCA (SEQ ID NO: 156)

>Signal peptide amino acid sequence in hu-emAb-Medi8852-AAV is SEQ ID NO: 118

>Medi8852 light chain amino acid sequence in hu-emAb-Medi8852-AAV
MATGSRTSLLLAFGLLCLPWLQEGSADIQMTQSPSSLSASVGDRVTITCRTSQSLSSYTHWYQQKPGKAPKLLIYAASSRGSGVPSRF
SGSGSGTDFTLTISSLQPEDFATYYCQQSRTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNAL
QSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC (SEQ ID NO: 157)

>MEDI8852-VK anti-stem HA variable light chain amino acid sequence in hu-emAb-Medi8852-AAV
DIQMTQSPSSLSASVGDRVTITCRTSQSLSSYTHWYQQKPGKAPKLLIYAASSRGSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYC
QQSRTFGQGTKVEIK (SEQ ID NO: 158)

>Kappa constant light chain amino acid sequence in hu-emAb-Medi8852-AAV is SEQ ID NO: 121

>GSSG-streptag linker amino acid sequence in hu-emAb-Medi8852-AAV is SEQ ID NO: 122

>anti-stem HA variable heavy chain amino acid sequence in hu-emAb-Medi8852-AAV
QVQLQQSGPGLVKPSQTLSLTCAISGDSVSSYNAVWNWIRQSPSRGLEWLGRTYYRSGWYNDYAESVKSRITINPDTSKNQFSLQLN
SVTPEDTAVYYCARSGHITVFGVNVDAFDMWGQGTMVTVSS (SEQ ID NO: 159)

>splice junction with flanking sequence in hu-emAb-Medi8852-AAV is SEQ ID NO: 151

>Human T7 downstream homology in hu-emAb-Medi8852-AAV is SEQ ID NO: 125

FIG. 25F (cont'd)

>Medi8852 light chain coding sequence without signal sequence in hu-emAb-Medi8852-AAV
GATATTCAGATGACCCAGAGCCCTTCCAGCCTGTCCGCTTCAGTGGGGGATCGAGTGACCATTACCTGCCGAACCAGCCAGAG
CCTGAGCTCCTACACGCACTGGTATCAGCAGAAGCCCGGCAAAGCCCCTAAGCTGCTGATCTACGCCGCTTCTAGTCGGGGGT
CCGGAGTGCCAAGCCGGTTCTCCGGATCTGGGAGTGGAACCGACTTTACCCTGACAATTTCAAGCCTGCAGCCCGAGGATTTC
GCTACATACTACTGTCAGCAGAGCAGAACTTTCGGGCAGGGCACTAAGGTGGAGATCAAACGGACTGTGGCCGCTCCTAGCGT
GTTCATCTTTCCACCTAGCGACGAGCAGCTGAAGTCTGGCACTGCCTCTGTCGTGTGCCTGCTGAACAACTTCTACCCTCGAGA
GGCCAAGGTGCAGTGGAAAGTGGACAATGCCCTGCAGAGCGGCAACAGCCAAGAGTCTGTGACCGAGCAGGACTCCAAGGAT
TCCACCTACAGCCTGTCTAGCACCCTGACTCTGAGCAAGGCCGACTACGAGAAGCACAAGGTGTACGCCTGCGAAGTGACACA
CCAGGGACTGAGCAGCCCTGTGACCAAGAGCTTCAATCGGGGCGAGTGC (SEQ ID NO: 283)

>Medi8852 light chain amino acid sequence without signal peptide in hu-emAb-Medi8852-AAV
DIQMTQSPSSLSASVGDRVTITCRTSQSLSSYTHWYQQKPGKAPKLLIYAASSRGSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYC
QQSRTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLT
LSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC (SEQ ID NO: 288)

FIG. 25G
hu-emAb-AMM01-AAV (2555 bp)

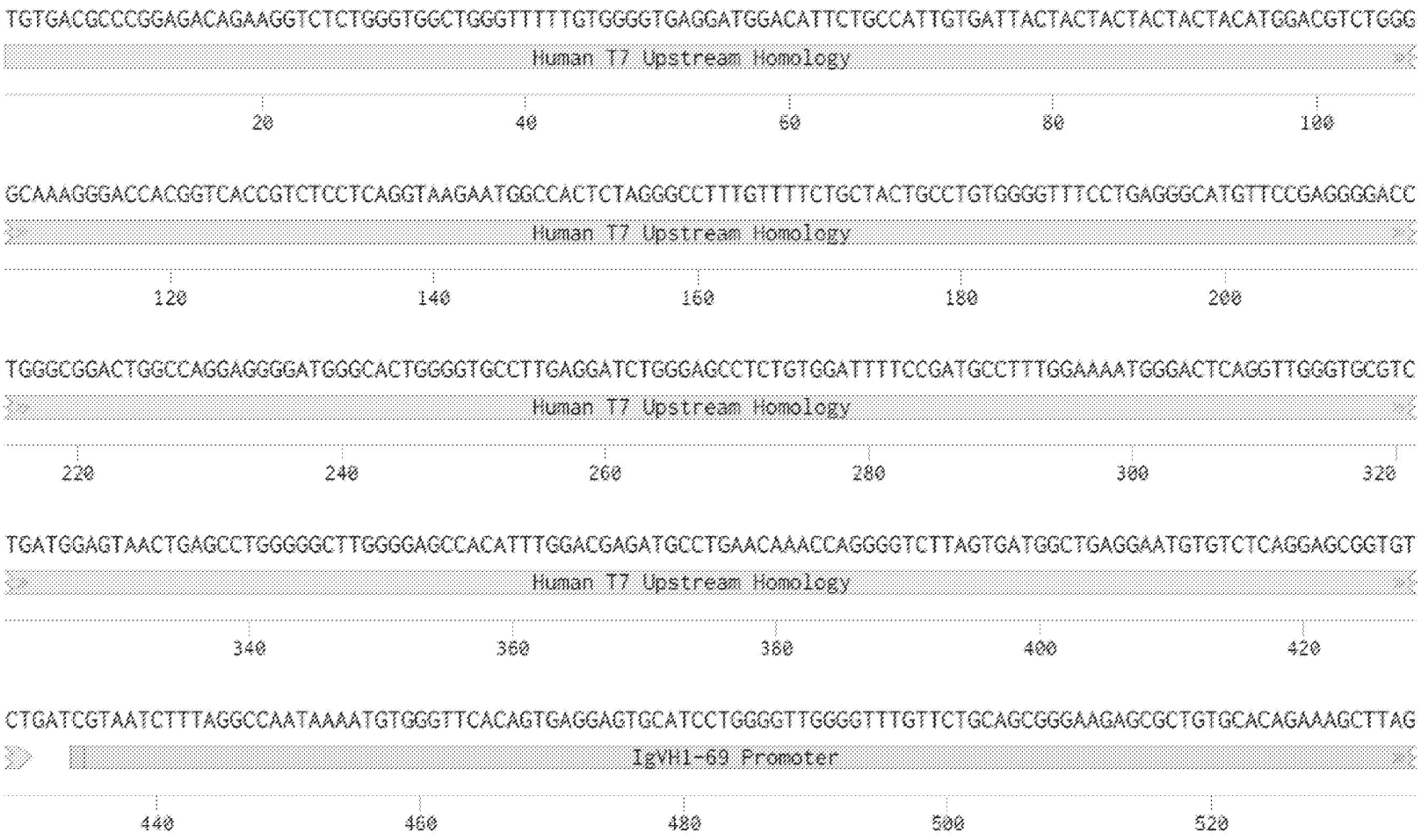


FIG. 25G (cont'd)

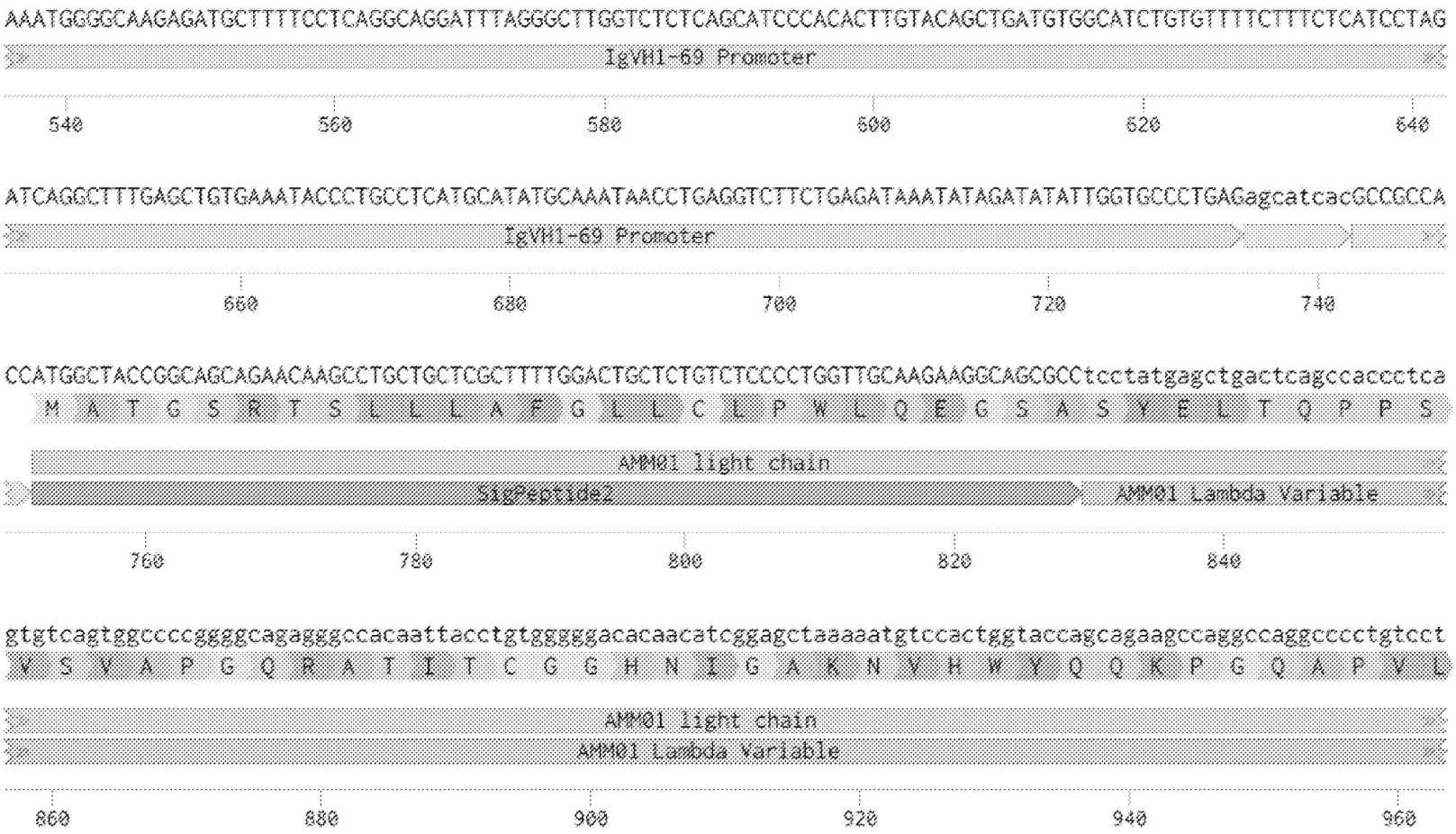


FIG. 25G (cont'd)

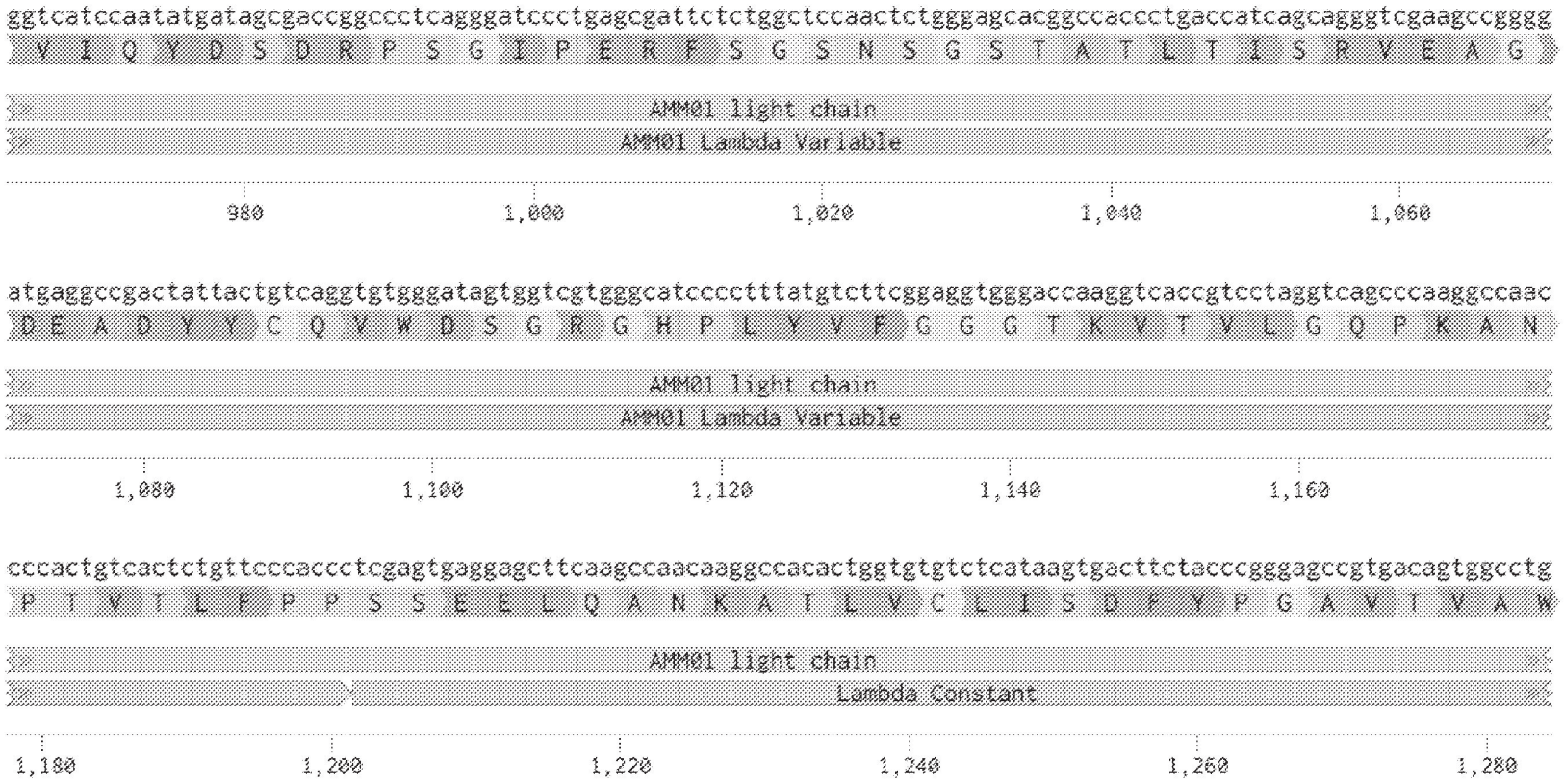


FIG. 25G (cont'd)

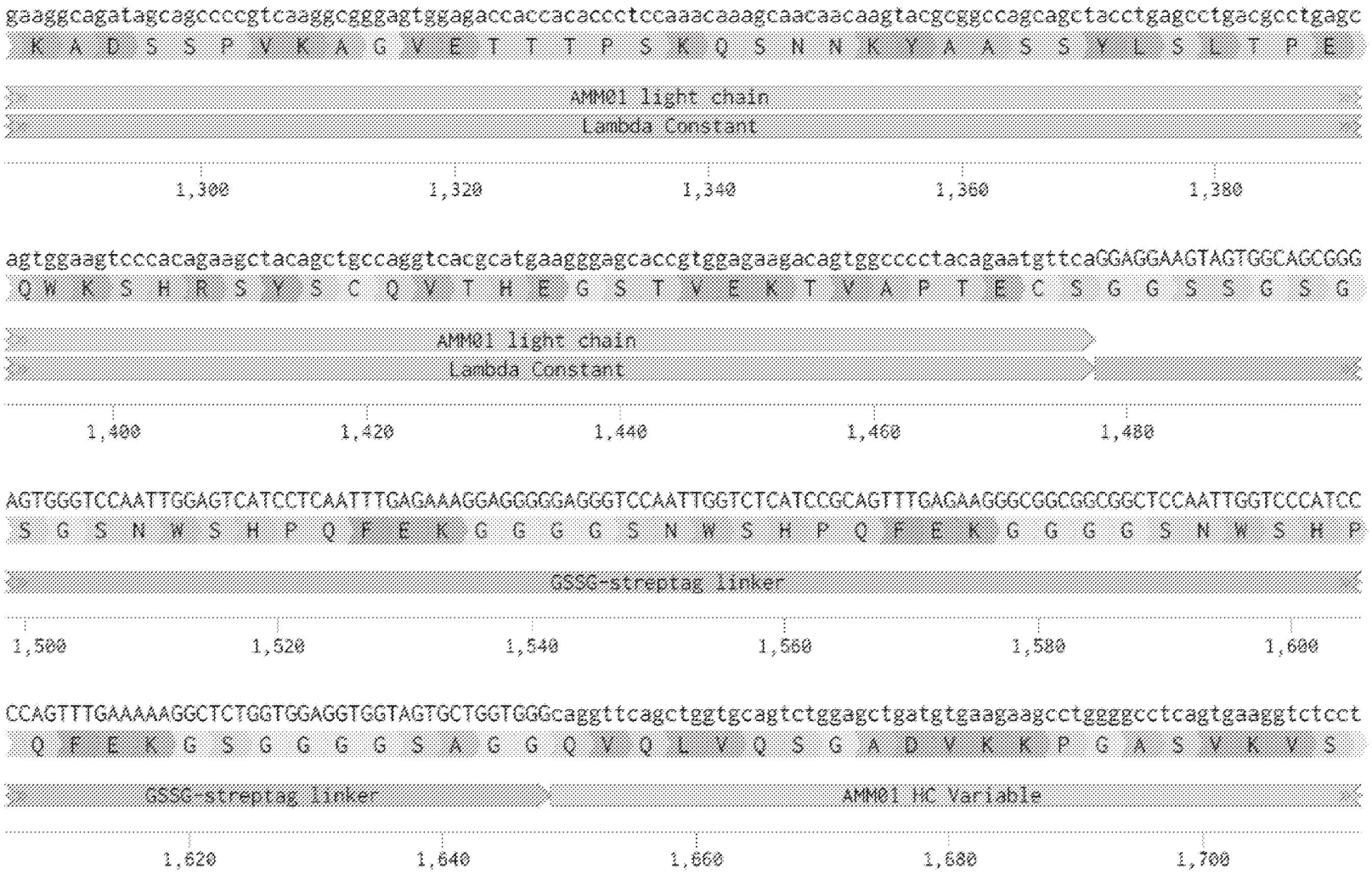


FIG. 25G (cont'd)

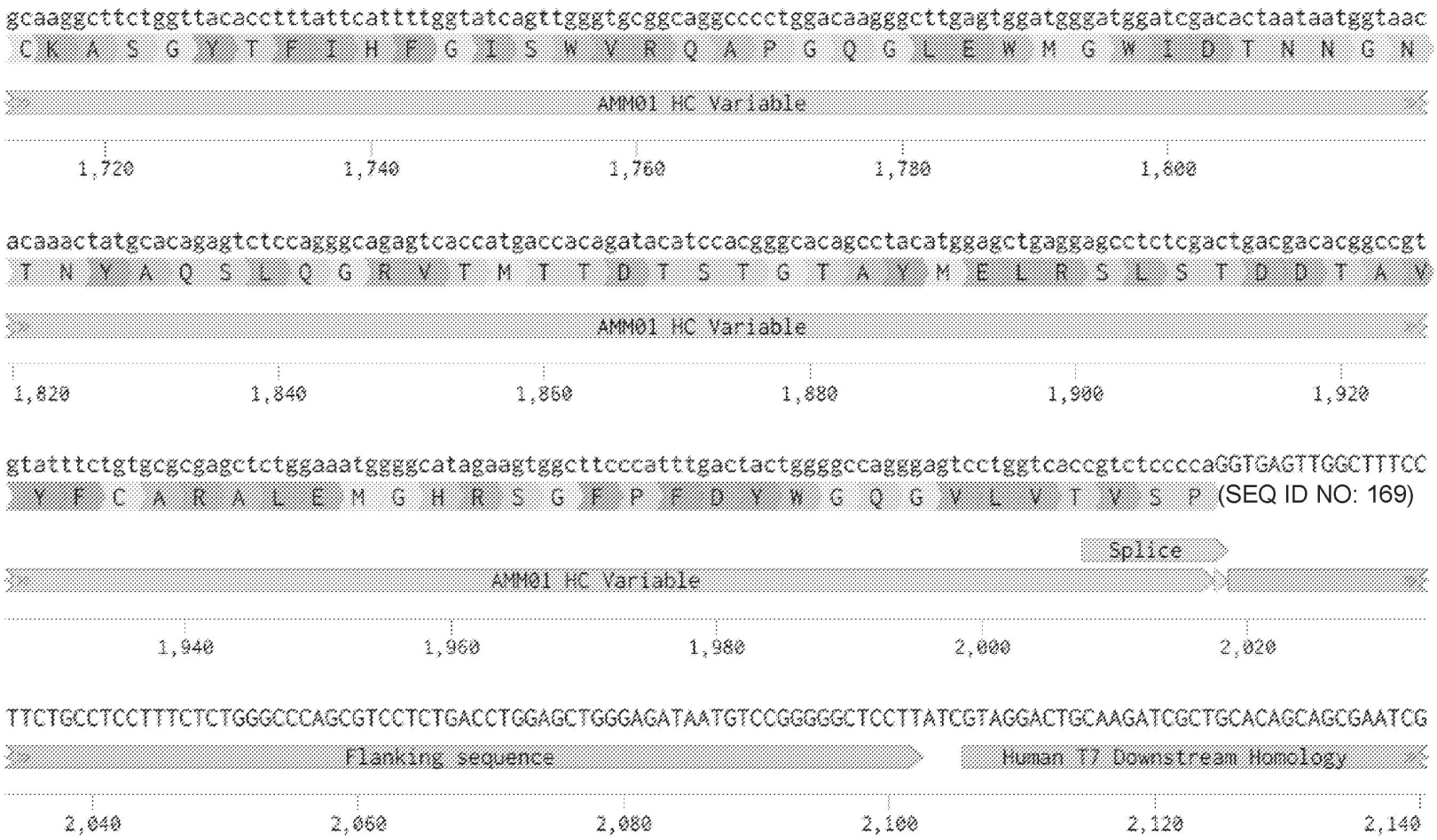
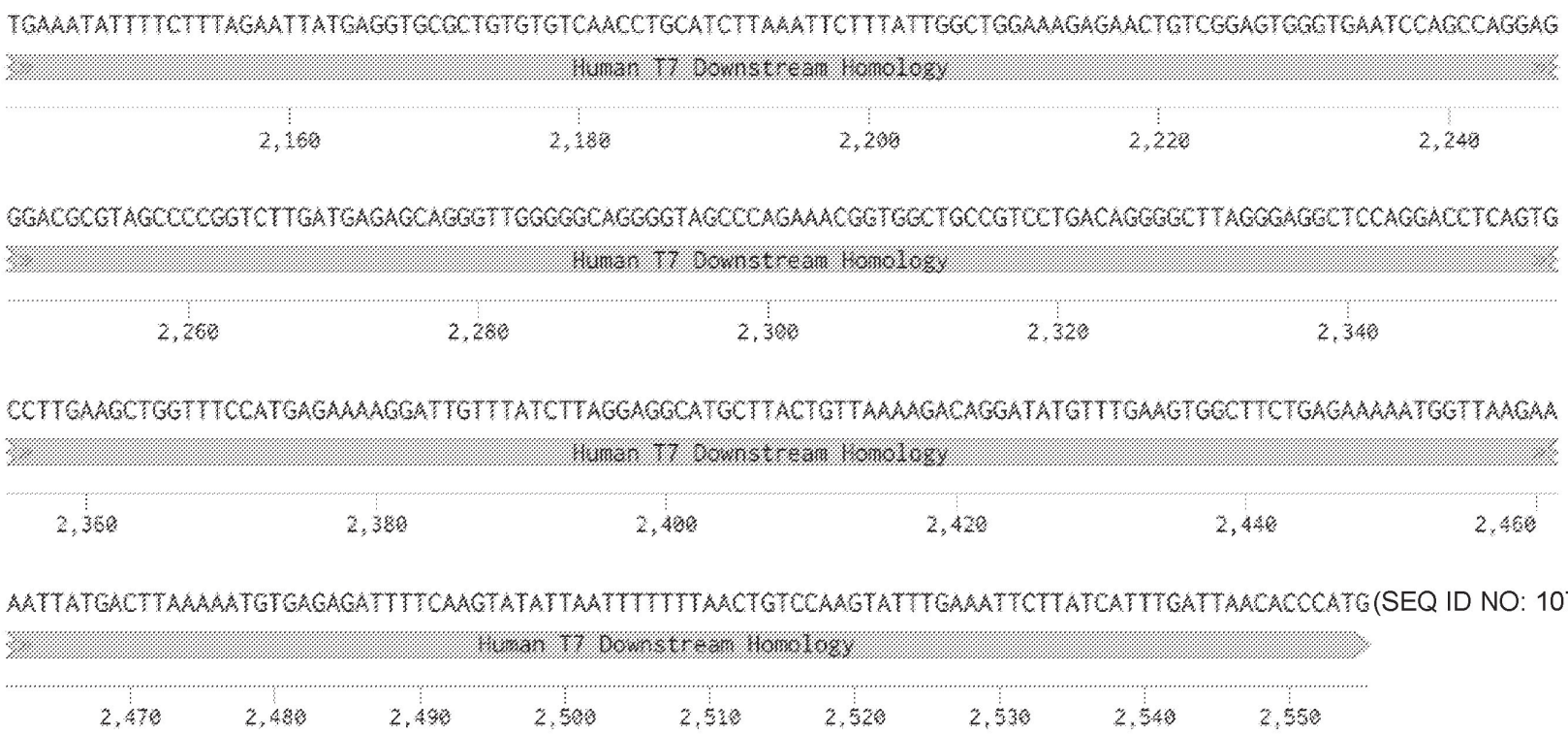


FIG. 25G (cont'd)



(SEQ ID NO: 107)

FIG. 25G (cont'd)

>human T7 upstream homology region in hu-emAb-AMM01-AAV is SEQ ID NO: 153

>IgVH1-69 promoter in hu-emAb-AMM01-AAV is SEQ ID NO: 111

>Signal peptide coding sequence in hu-emAb-AMM01-AAV is SEQ ID NO: 112

>AMM01 light chain coding sequence in hu-emAb-AMM01-AAV
ATGGCTACCGGCAGCAGAACAAGCCTGCTGCTCGCTTTTGGACTGCTCTGTCTCCCCTGGTTGCAAGAAGGCAGCGCCTCCTAT
GAGCTGACTCAGCCACCCTCAGTGTCAGTGGCCCCGGGGCAGAGGGCCACAATTACCTGTGGGGGACACAACATCGGAGCTA
AAAATGTCCACTGGTACCAGCAGAAGCCAGGCCAGGCCCCTGTCCTGGTCATCCAATATGATAGCGACCGGCCCTCAGGGATC
CCTGAGCGATTCTCTGGCTCCAACTCTGGGAGCACGGCCACCCTGACCATCAGCAGGGTCGAAGCCGGGGATGAGGCCGACT
ATTACTGTCAGGTGTGGGATAGTGGTCGTGGGCATCCCCTTTATGTCTTCGGAGGTGGGACCAAGGTCACCGTCCTAGGTCAGC
CCAAGGCCAACCCCACTGTCACTCTGTTCCCACCCTCGAGTGAGGAGCTTCAAGCCAACAAGGCCACACTGGTGTGTCTCATAA
GTGACTTCTACCCGGGAGCCGTGACAGTGGCCTGGAAGGCAGATAGCAGCCCCGTCAAGGCGGGAGTGGAGACCACCACACC
CTCCAAACAAAGCAACAACAAGTACGCGGCCAGCAGCTACCTGAGCCTGACGCCTGAGCAGTGGAAGTCCCACAGAAGCTACA
GCTGCCAGGTCACGCATGAAGGGAGCACCGTGGAGAAGACAGTGGCCCCTACAGAATGTTCA (SEQ ID NO: 161)

>AMM01 lambda variable light chain coding sequence in hu-emAb-AMM01-AAV
TCCTATGAGCTGACTCAGCCACCCTCAGTGTCAGTGGCCCCGGGGCAGAGGGCCACAATTACCTGTGGGGGACACAACATCGG
AGCTAAAAATGTCCACTGGTACCAGCAGAAGCCAGGCCAGGCCCCTGTCCTGGTCATCCAATATGATAGCGACCGGCCCTCAG
GGATCCCTGAGCGATTCTCTGGCTCCAACTCTGGGAGCACGGCCACCCTGACCATCAGCAGGGTCGAAGCCGGGGATGAGGC
CGACTATTACTGTCAGGTGTGGGATAGTGGTCGTGGGCATCCCCTTTATGTCTTCGGAGGTGGGACCAAGGTCACCGTCCTAGG
TCAGCCCAAGGCCAACCCCACTGTCACTCTGTTCCCACCC (SEQ ID NO: 162)

>lambda constant light chain coding sequence in hu-emAb-AMM01-AAV
TCGAGTGAGGAGCTTCAAGCCAACAAGGCCACACTGGTGTGTCTCATAAGTGACTTCTACCCGGGAGCCGTGACAGTGGCCTG
GAAGGCAGATAGCAGCCCCGTCAAGGCGGGAGTGGAGACCACCACACCCTCCAAACAAAGCAACAACAAGTACGCGGCCAGC
AGCTACCTGAGCCTGACGCCTGAGCAGTGGAAGTCCCACAGAAGCTACAGCTGCCAGGTCACGCATGAAGGGAGCACCGTGG
AGAAGACAGTGGCCCCTACAGAATGTTCA (SEQ ID NO: 163)

>GSSG-streptag linker coding sequence in hu-emAb-AMM01-AAV is SEQ ID NO: 116

FIG. 25G (cont'd)

>AMM01 variable heavy chain coding sequence in hu-emAb-AMM01-AAV
CAGGTTCAGCTGGTGCAGTCTGGAGCTGATGTGAAGAAGCCTGGGGCCTCAGTGAAGGTCTCCTGCAAGGCTTCTGGTTACAC
CTTTATTCATTTTGGTATCAGTTGGGTGCGGCAGGCCCCTGGACAAGGGCTTGAGTGGATGGGATGGATCGACACTAATAATGG
TAACACAAACTATGCACAGAGTCTCCAGGGCAGAGTCACCATGACCACAGATACATCCACGGGCACAGCCTACATGGAGCTGAG
GAGCCTCTCGACTGACGACACGGCCGTGTATTTCTGTGCGCGAGCTCTGGAAATGGGGCATAGAAGTGGCTTCCCATTTGACTA
CTGGGGCCAGGGAGTCCTGGTCACCGTCTCCCCA (SEQ ID NO: 164)

>Signal peptide amino acid sequence in hu-emAb-AMM01-AAV is SEQ ID NO: 118

>AMM01 light chain amino acid sequence in hu-emAb-AMM01-AAV
MATGSRTSLLLAFGLLCLPWLQEGSASYELTQPPSVSVAPGQRATITCGGHNIGAKNVHWYQQKPGQAPVLVIQYDSDRPSGIPERFS
GSNSGSTATLTISRVEAGDEADYYCQVWDSGRGHPLYVFGGGTKVTVLGQPKANPTVTLFPPSSEELQANKATLVCLISDFYPGAVTV
AWKADSSPVKAGVETTTPSKQSNNKYAASSYLSLTPEQWKSHRSYSCQVTHEGSTVEKTVAPTECS (SEQ ID NO: 165)

>AMM01 variable light chain amino acid sequence in hu-emAb-AMM01-AAV
SYELTQPPSVSVAPGQRATITCGGHNIGAKNVHWYQQKPGQAPVLVIQYDSDRPSGIPERFSGSNSGSTATLTISRVEAGDEADYYCQ
VWDSGRGHPLYVFGGGTKVTVLGQPKANPTVTLFPP (SEQ ID NO: 166)

>AMM01 lambda constant light chain amino acid sequence in hu-emAb-AMM01-AAV
SSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTTPSKQSNNKYAASSYLSLTPEQWKSHRSYSCQVTHEGSTVEKTVA
PTECS (SEQ ID NO: 167)

>GSSG-streptag linker amino acid sequence in hu-emAb-AMM01-AAV is SEQ ID NO: 122

>AMM01 variable heavy chain amino acid sequence in hu-emAb-AMM01-AAV
QVQLVQSGADVKKPGASVKVSCKASGYTFIHFGISWVRQAPGQGLEWMGWIDTNNGNTNYAQSLQGRVTMTTDTSTGTAYMELRSL
STDDTAVYFCARALEMGHRSGFPFDYWGQGVLVTVSP (SEQ ID NO: 168)

>splice junction with flanking sequence in hu-emAb-AMM01-AAV is SEQ ID NO: 151

>Human T7 downstream homology in hu-emAb-AMM01-AAV is SEQ ID NO: 125

FIG. 25G (cont'd)

>AMM01 light chain coding sequence without signal sequence in hu-emAb-AMM01-AAV
TCCTATGAGCTGACTCAGCCACCCTCAGTGTCAGTGGCCCCGGGGCAGAGGGCCACAATTACCTGTGGGGGACACAACATCGG
AGCTAAAAATGTCCACTGGTACCAGCAGAAGCCAGGCCAGGCCCCTGTCCTGGTCATCCAATATGATAGCGACCGGCCCTCAG
GGATCCCTGAGCGATTCTCTGGCTCCAACTCTGGGAGCACGGCCACCCTGACCATCAGCAGGGTCGAAGCCGGGGATGAGGC
CGACTATTACTGTCAGGTGTGGGATAGTGGTCGTGGGCATCCCCTTTATGTCTTCGGAGGTGGGACCAAGGTCACCGTCCTAGG
TCAGCCCAAGGCCAACCCCACTGTCACTCTGTTCCCACCCTCGAGTGAGGAGCTTCAAGCCAACAAGGCCACACTGGTGTGTCT
CATAAGTGACTTCTACCCGGGAGCCGTGACAGTGGCCTGGAAGGCAGATAGCAGCCCCGTCAAGGCGGGAGTGGAGACCACC
ACACCCTCCAAACAAAGCAACAACAAGTACGCGGCCAGCAGCTACCTGAGCCTGACGCCTGAGCAGTGGAAGTCCCACAGAAG
CTACAGCTGCCAGGTCACGCATGAAGGGAGCACCGTGGAGAAGACAGTGGCCCCTACAGAATGTTCA (SEQ ID NO: 284)

>AMM01 light chain amino acid sequence without signal peptide in hu-emAb-AMM01-AAV
SYELTQPPSVSVAPGQRATITCGGHNIGAKNVHWYQQKPGQAPVLVIQYDSDRPSGIPERFSGSNSGSTATLTISRVEAGDEADYYCQ
VWDSGRGHPLYVFGGGTKVTVLGQPKANPTVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTTPSKQSNNK
YAASSYLSLTPEQWKSHRSYSCQVTHEGSTVEKTVAPTECS (SEQ ID NO: 289)

FIG. 25H

Balb/C mRSV-Splice Integration (2261 bp)

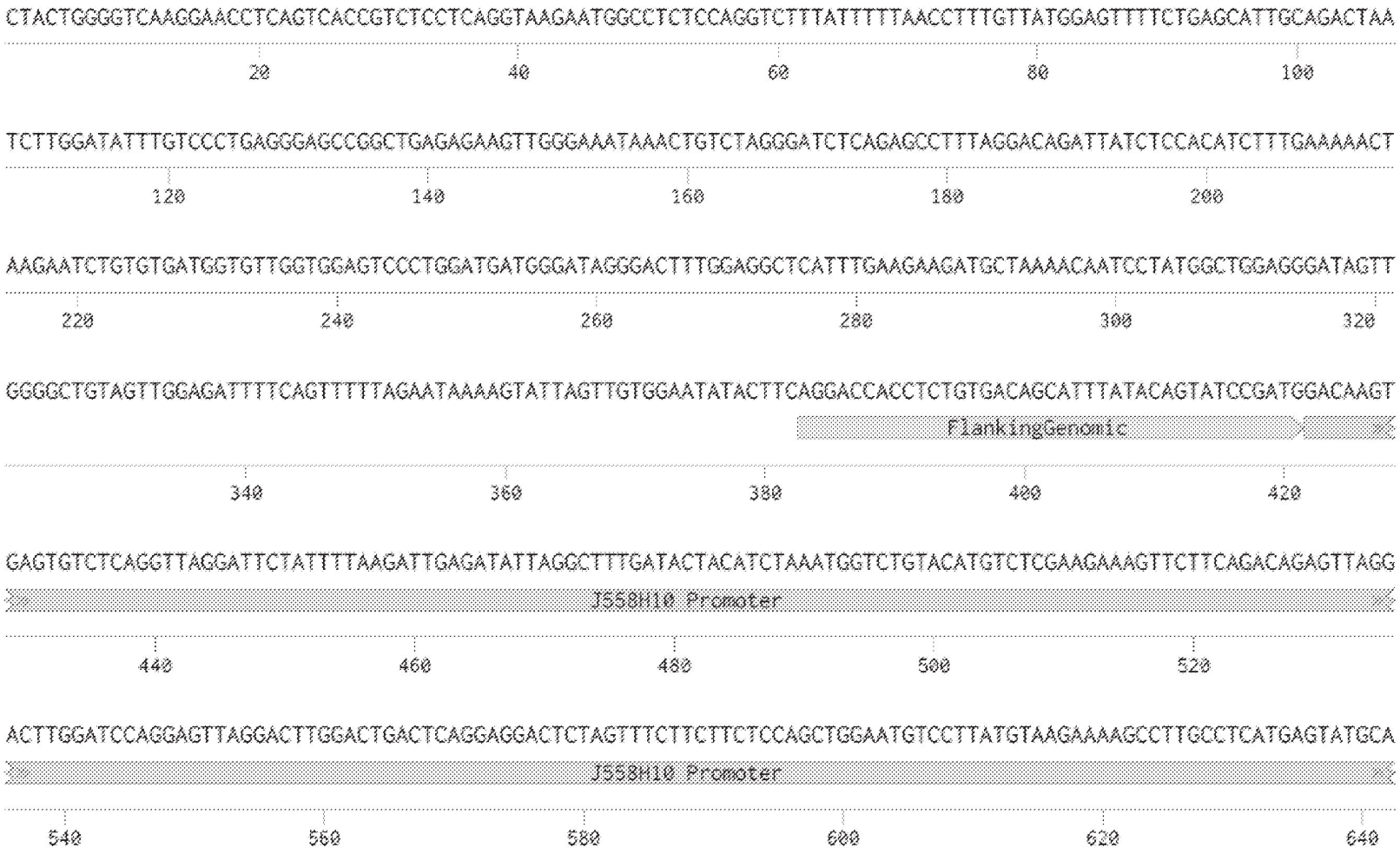


FIG. 25H (cont'd)

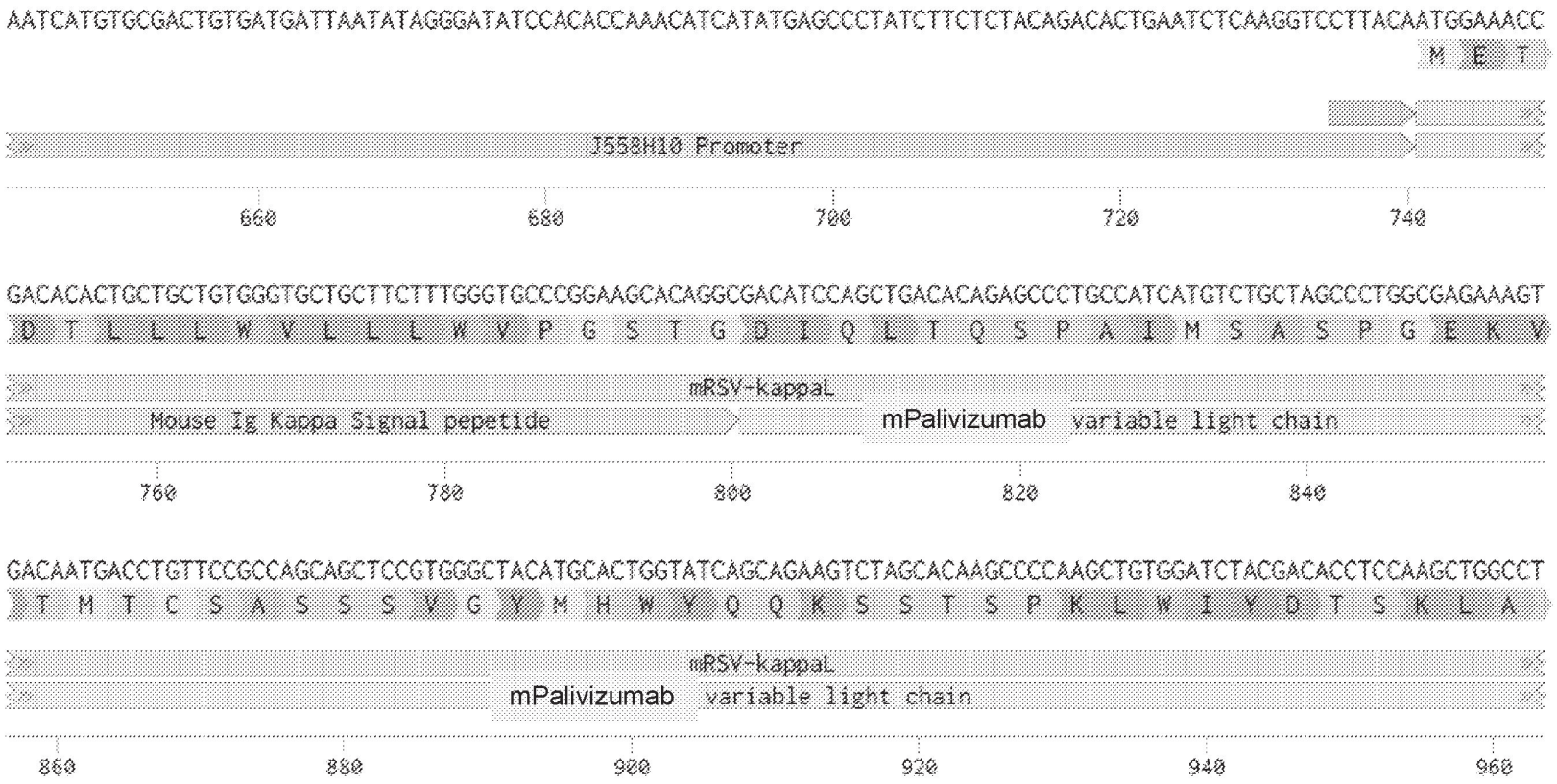


FIG. 25H (cont'd)

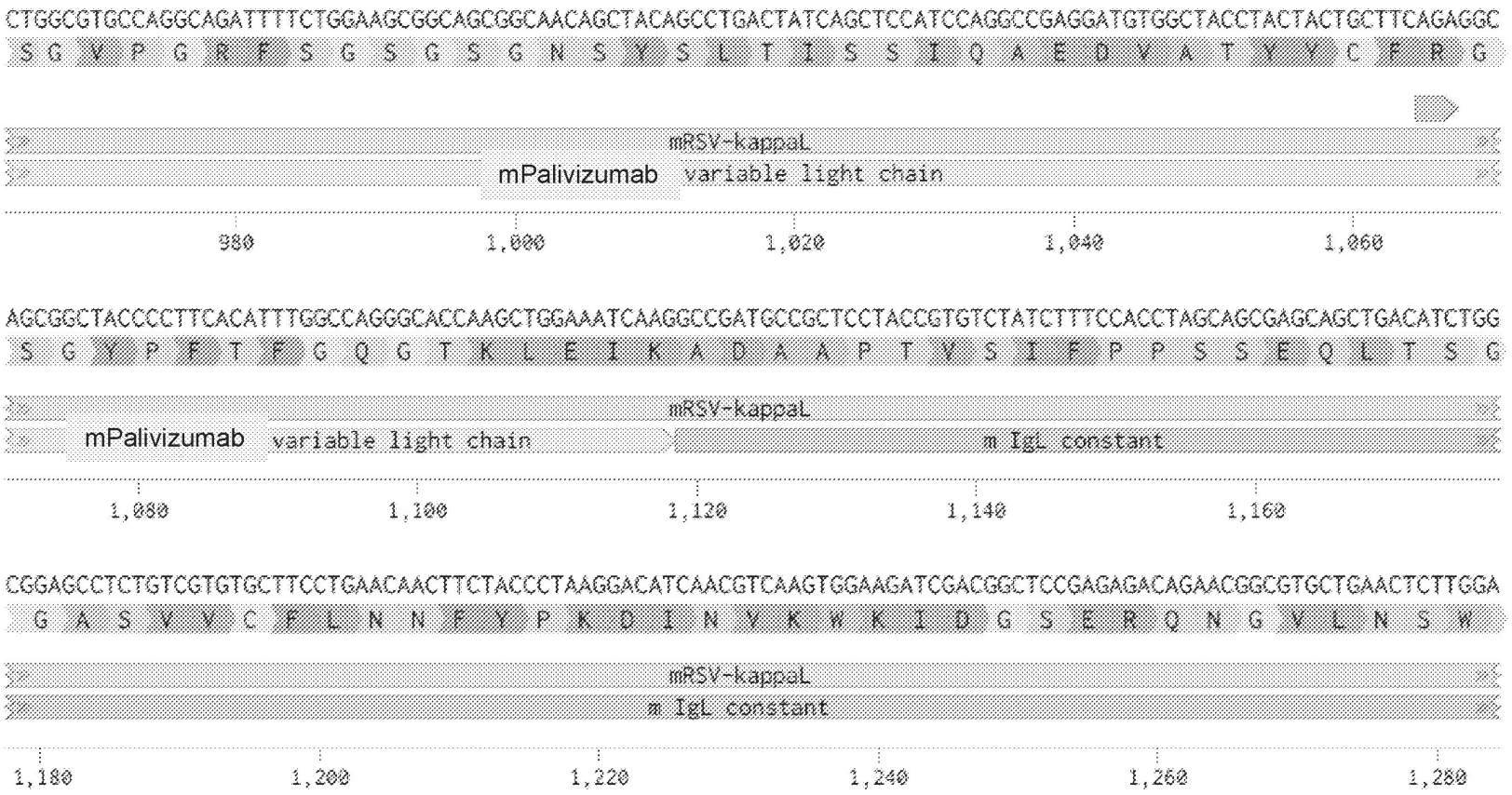


FIG. 25H (cont'd)

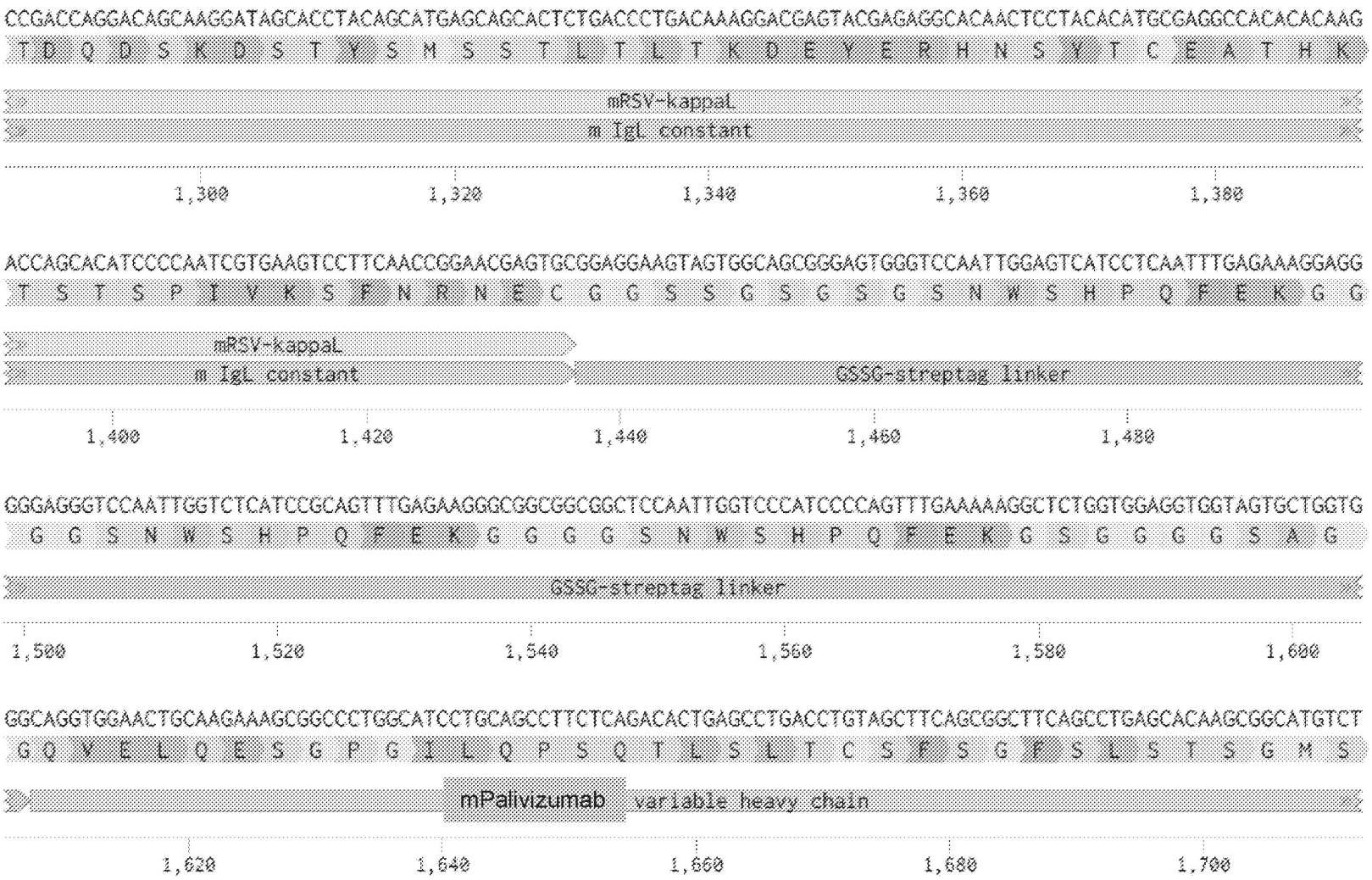


FIG. 25H (cont'd)

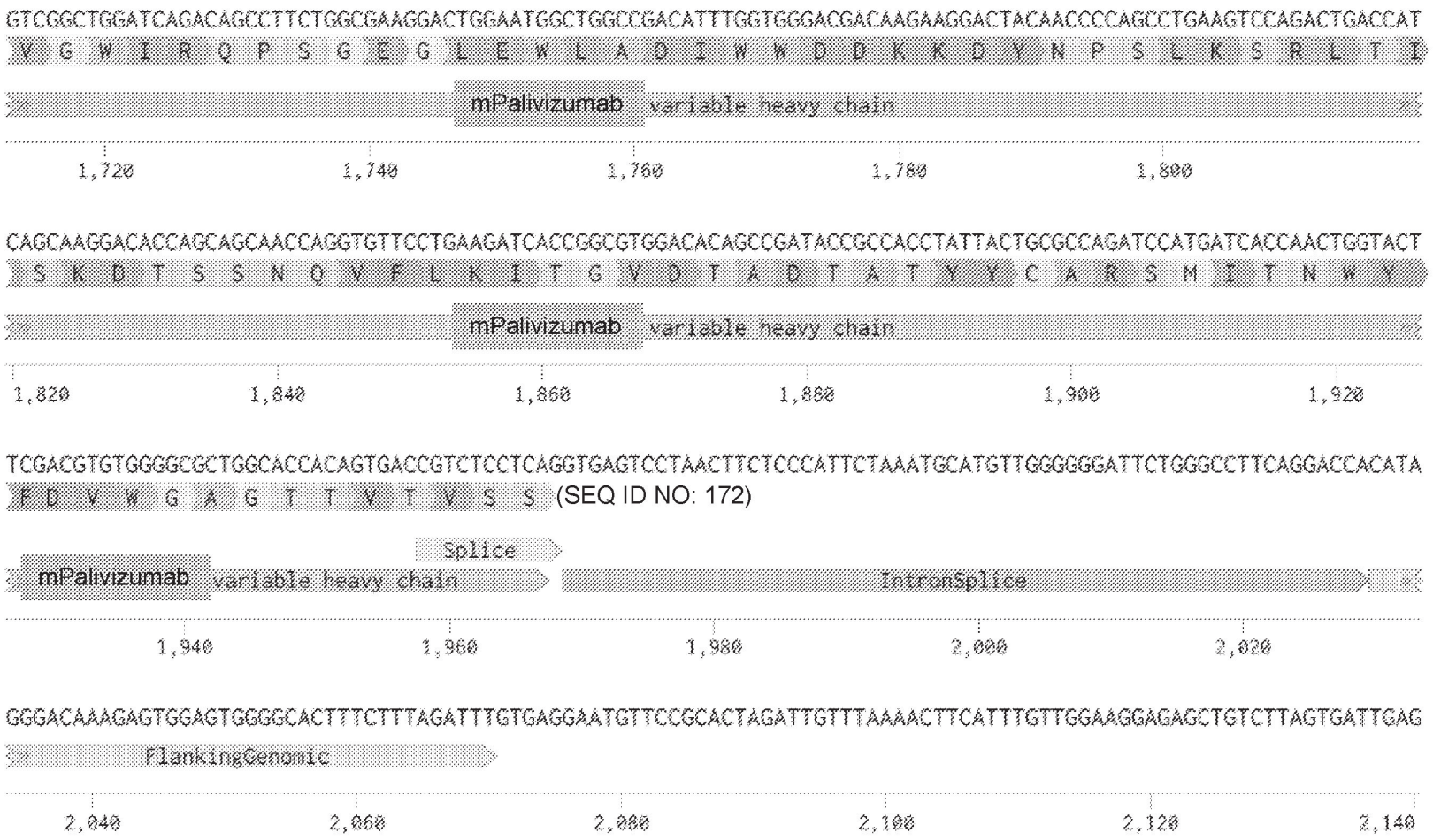
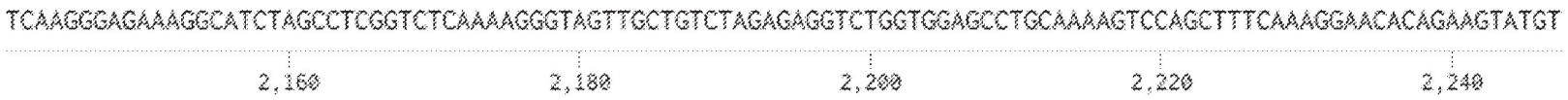


FIG. 25H (cont'd)



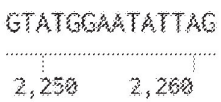


FIG. 25H (cont'd)

>upstream flanking genomic DNA in Balb/C mRSV-Splice Integration
AGGACCACCTCTGTGACAGCATTTATACAGTATCCGATG (SEQ ID NO: 170)

>J558H10 promoter in Balb/C mRSV-Splice Integration is SEQ ID NO: 128

>Signal peptide coding sequence in Balb/C mRSV-Splice Integration is SEQ ID NO: 129

>mPalivizumab light chain coding sequence in Balb/C mRSV-Splice Integration is SEQ ID NO: 130

>mPalivizumab variable light chain coding sequence in Balb/C mRSV-Splice Integration is SEQ ID NO: 131

>mPalivizumab kappa constant light chain coding sequence in Balb/C mRSV-Splice Integration is SEQ ID NO: 132

>GSSG-streptag linker coding sequence in Balb/C mRSV-Splice Integration is SEQ ID NO: 116

>mPalivizumab variable heavy chain coding sequence in Balb/C mRSV-Splice Integration is SEQ ID NO: 133

>Signal peptide amino acid sequence in Balb/C mRSV-Splice Integration is SEQ ID NO: 134

>mPalivizumab light chain amino acid sequence in Balb/C mRSV-Splice Integration is SEQ ID NO: 135

>mPalivizumab variable light chain amino acid sequence in Balb/C mRSV-Splice Integration is SEQ ID NO: 136

>mPalivizumab kappa constant light chain amino acid sequence in Balb/C mRSV-Splice Integration is SEQ ID NO: 137

>GSSG-streptag linker amino acid sequence in Balb/C mRSV-Splice Integration is SEQ ID NO: 122

>mPalivizumab variable heavy chain amino acid sequence in Balb/C mRSV-Splice Integration is SEQ ID NO: 138

>splice junction with flanking sequence in in Balb/C mRSV-Splice Integration is SEQ ID NO: 139

>downstream flanking genomic DNA in Balb/C mRSV-Splice Integration
CATAGGGACAAAGAGTGGAGTGGGGCACTTTCTTTAGATTT (SEQ ID NO: 171)

>mPalivizumab light chain coding sequence without signal sequence in Balb/C mRSV-Splice Integration is SEQ ID NO: 281

>mPalivizumab light chain amino acid sequence without signal peptide in Balb/C mRSV-Splice Integration is SEQ ID NO: 286

FIG. 25I

TT-hRSV-T7-integrated (1707 bp)

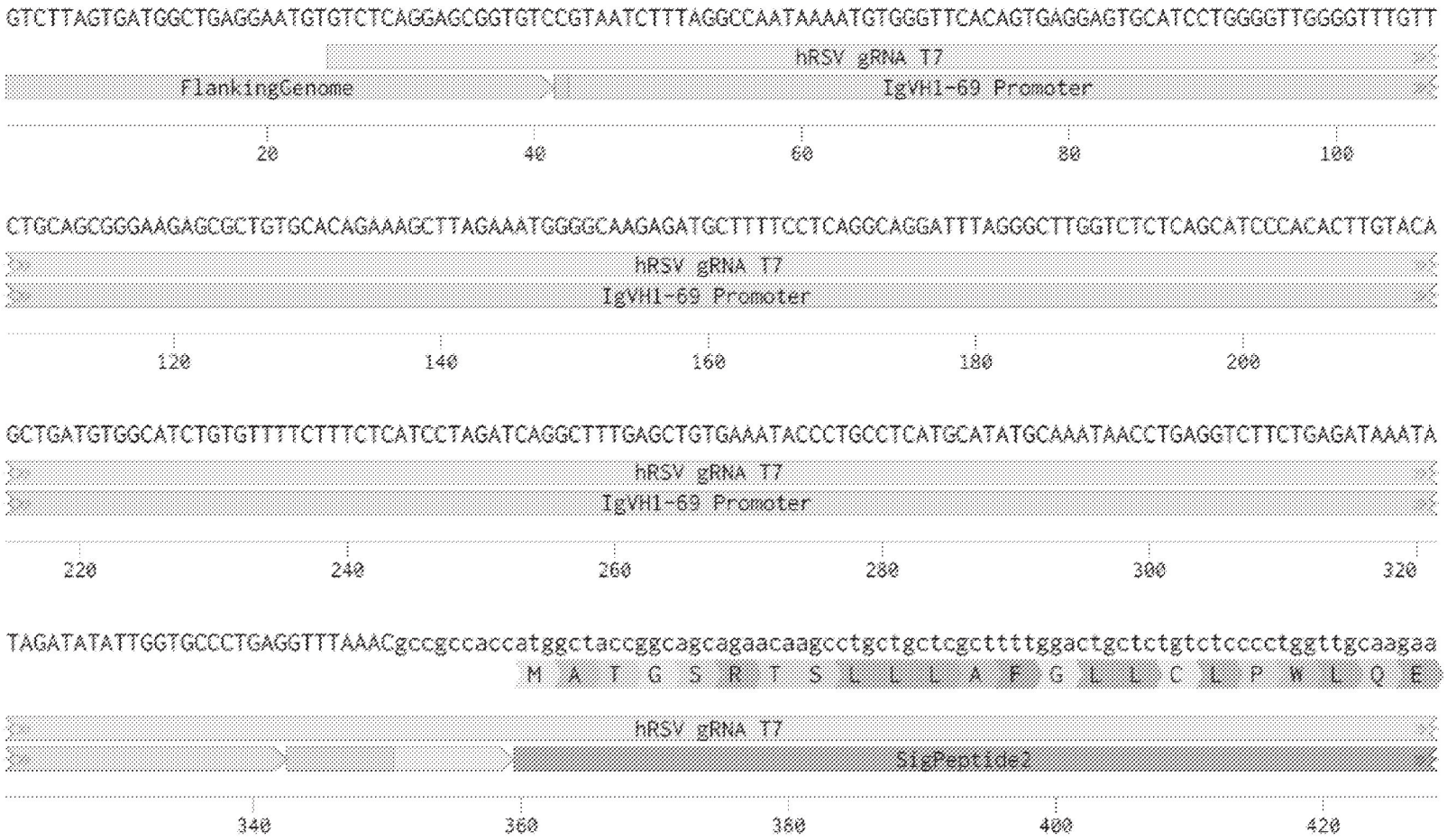


FIG. 25I (cont'd)

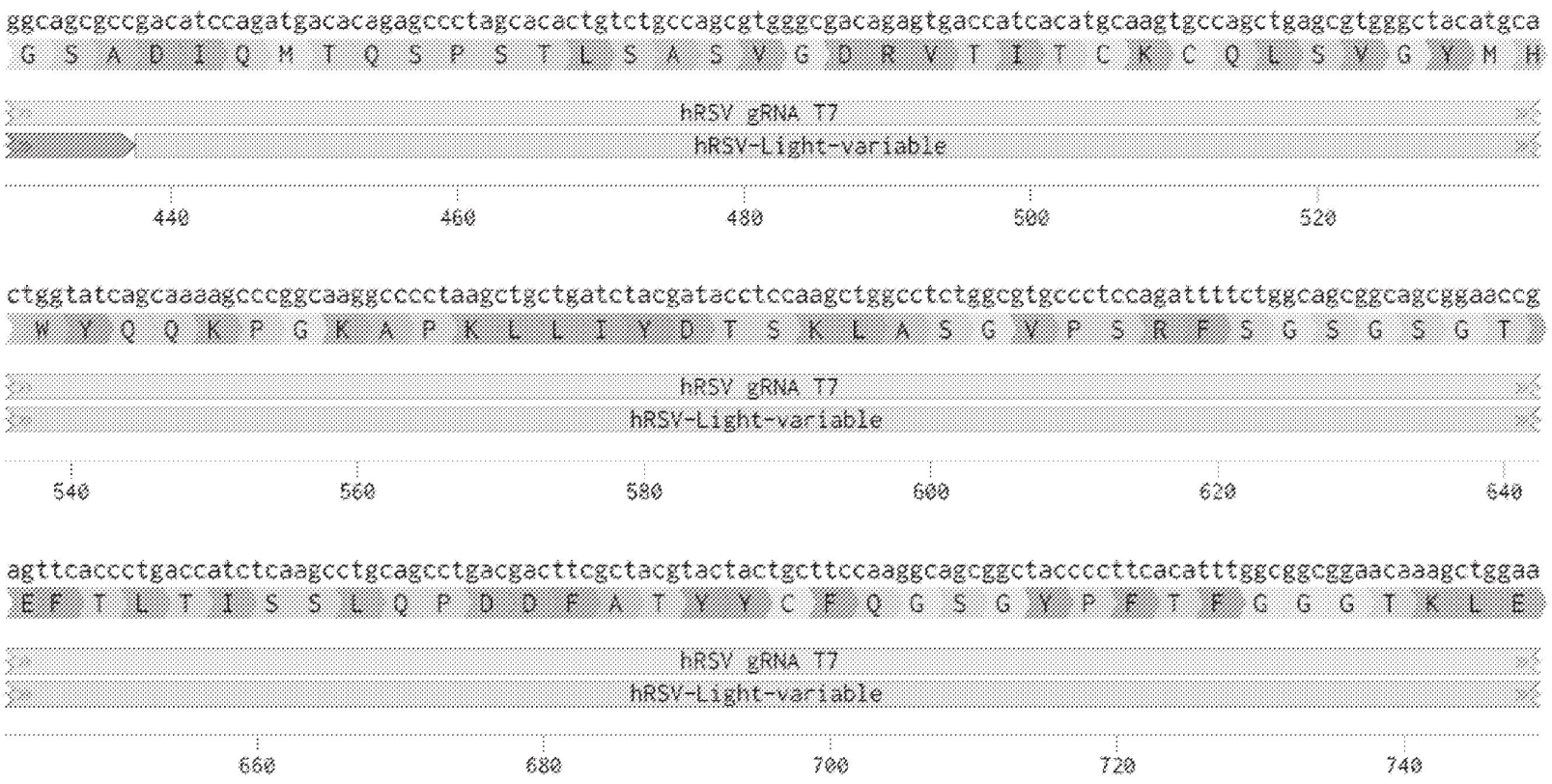


FIG. 25I (cont'd)

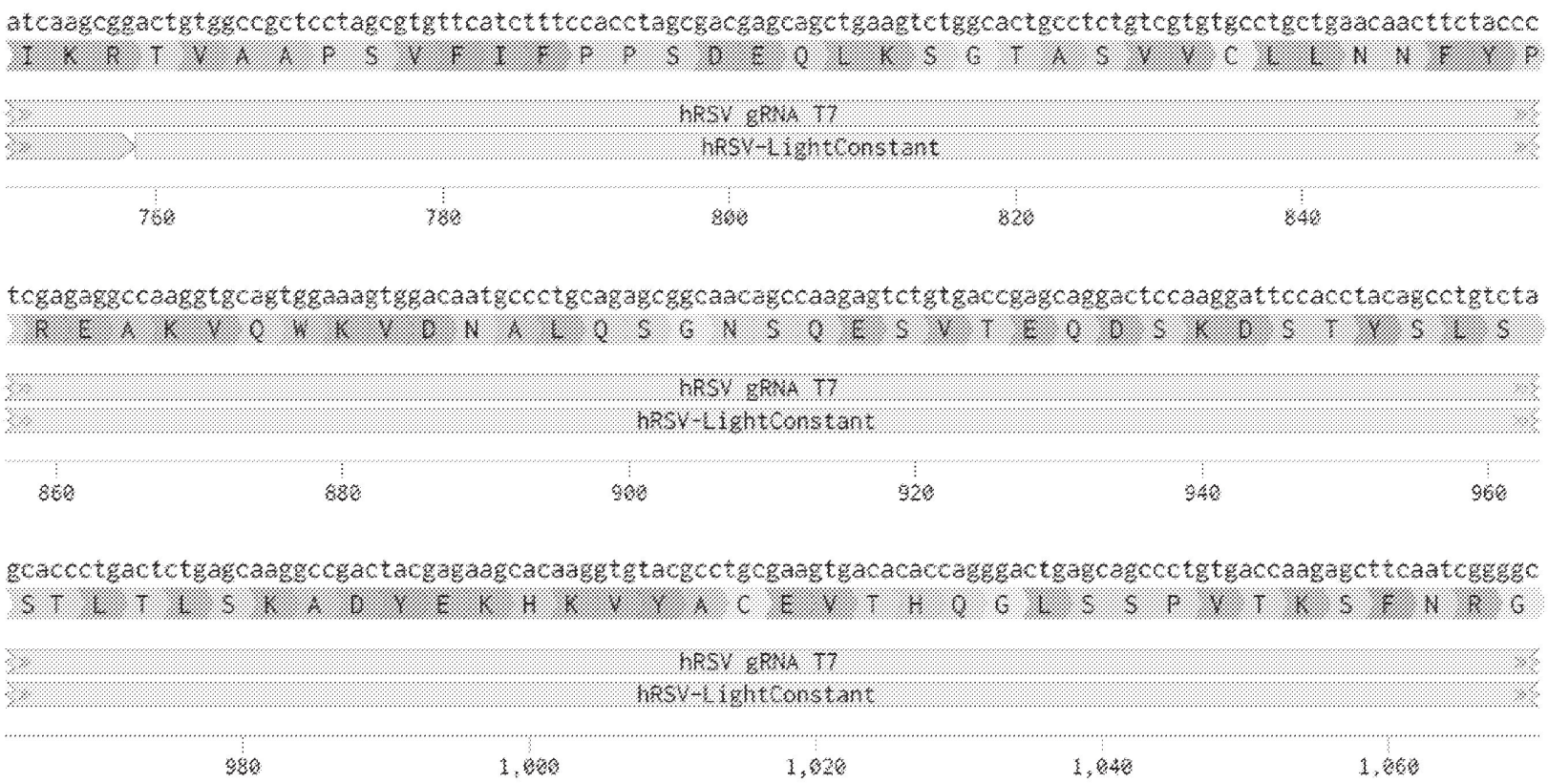


FIG. 25I (cont'd)

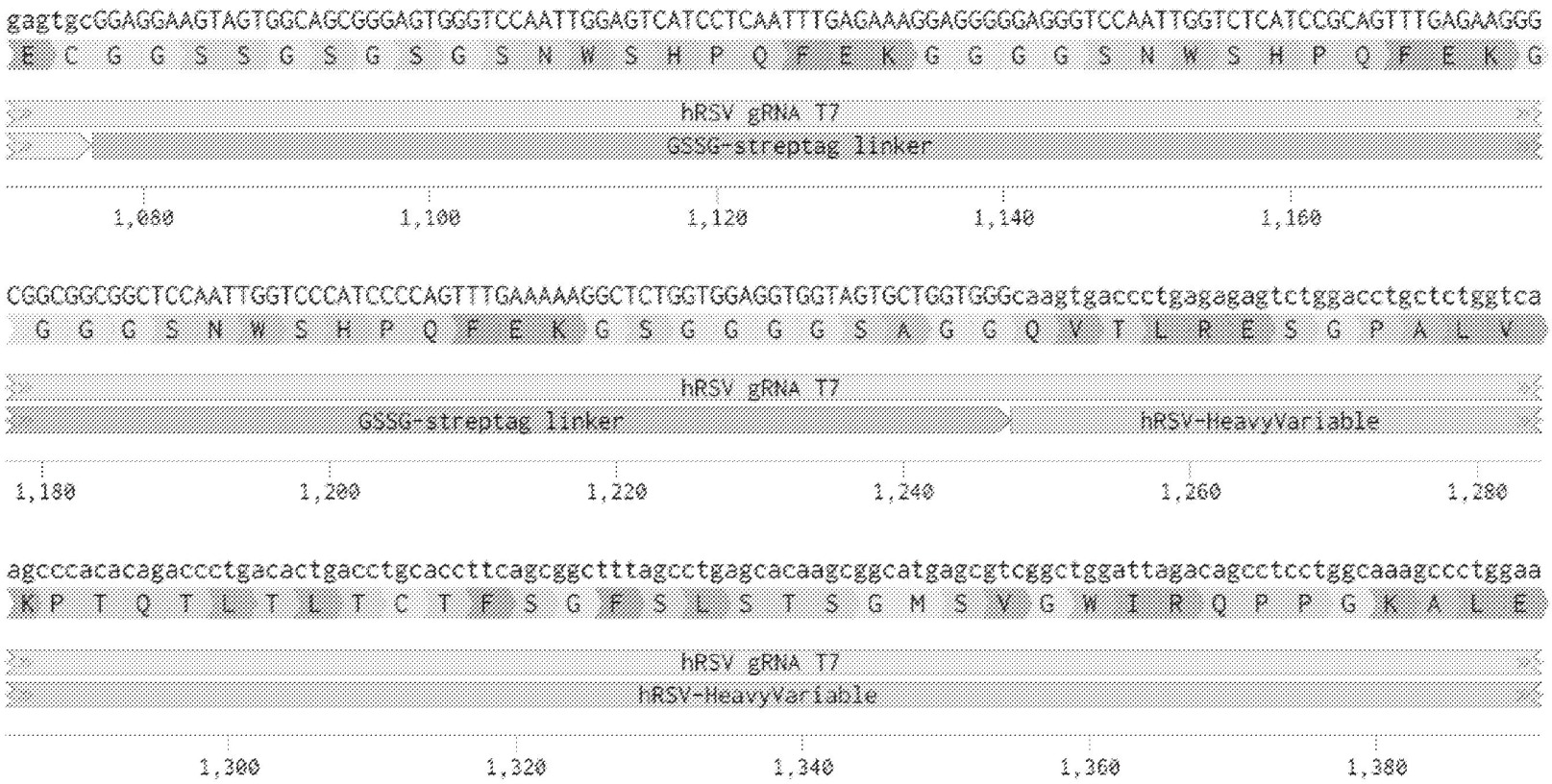


FIG. 25I (cont'd)

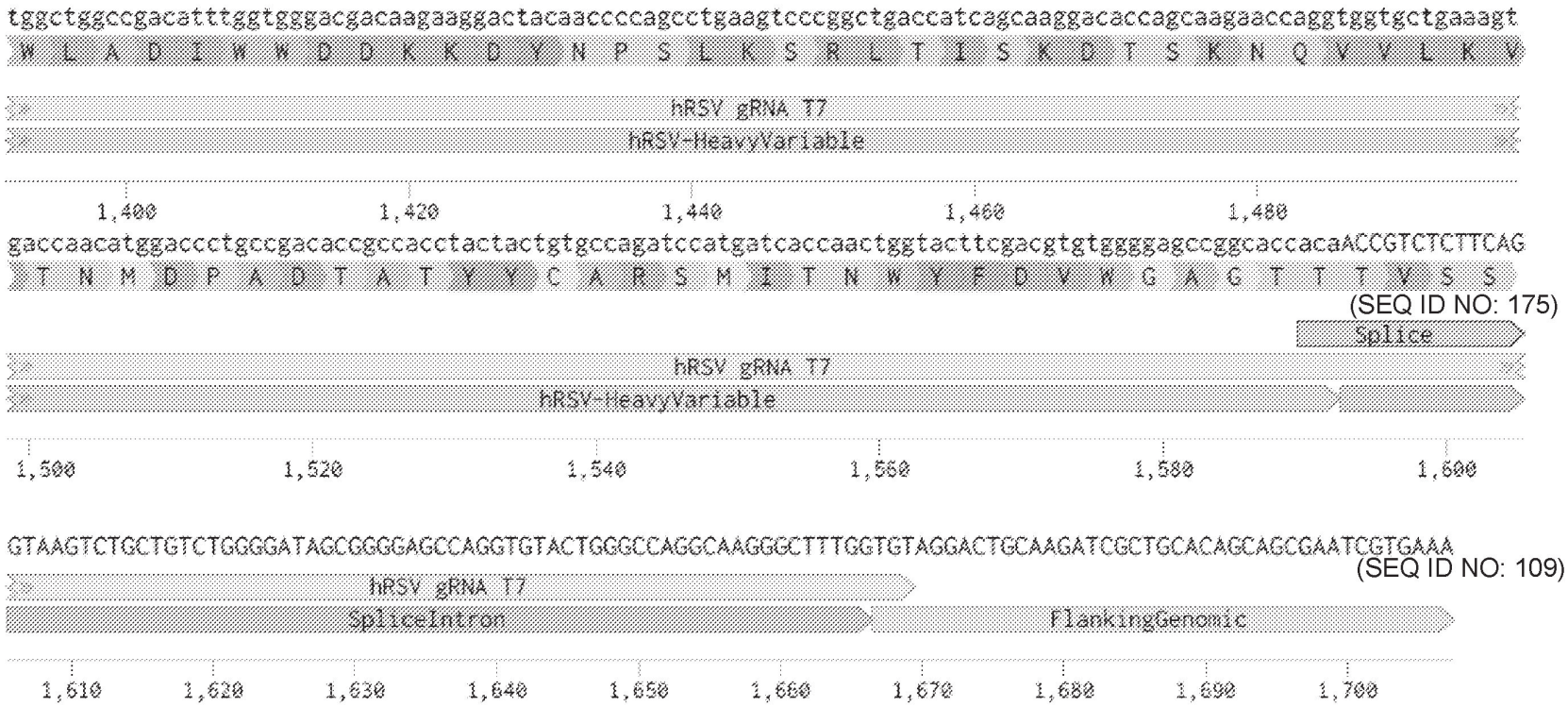


FIG. 25I (cont'd)

>upstream flanking genomic DNA sequence in TT-hRSV-T7-integrated
GTCTTAGTGATGGCTGAGGAATGTGTCTCAGGAGCGGTGTC (SEQ ID NO: 173)

>IgVH1-69 promoter in TT-hRSV-T7-integrated is SEQ ID NO: 111

>Signal peptide coding sequence in TT-hRSV-T7-integrated is SEQ ID NO: 112

>hRSV light chain coding sequence in TT-hRSV-T7-integrated is SEQ ID NO: 113

>hRSV variable light chain coding sequence in TT-hRSV-T7-integrated is SEQ ID NO: 114

>kappa constant light chain coding sequence in TT-hRSV-T7-integrated is SEQ ID NO: 115

>GSSG-streptag linker coding sequence in TT-hRSV-T7-integrated is SEQ ID NO: 116

>hRSV variable heavy chain coding sequence in TT-hRSV-T7-integrated is SEQ ID NO: 117

>signal peptide amino acid sequence in TT-hRSV-T7-integrated is SEQ ID NO: 118

>hRSV light chain amino acid sequence in TT-hRSV-T7-integrated is SEQ ID NO: 119

>hRSV variable light chain amino acid sequence in TT-hRSV-T7-integrated is SEQ ID NO: 120

>kappa constant light chain amino acid sequence in TT-hRSV-T7-integrated is SEQ ID NO: 121

>GSSG-streptag linker amino acid sequence in TT-hRSV-T7-integrated is SEQ ID NO: 122

>hRSV variable heavy chain amino acid sequence in TT-hRSV-T7-integrated is SEQ ID NO: 123

>splice junction with flanking sequence in TT-hRSV-T7-integrated is SEQ ID NO: 124

>downstream flanking genomic DNA sequence in TT-hRSV-T7-integrated
TGTAGGACTGCAAGATCGCTGCACAGCAGCGAATCGTGAAA (SEQ ID NO: 174)

FIG. 25I (cont'd)

>hRSV light chain coding sequence without signal sequence in TT-hRSV-T7-integrated is SEQ ID NO: 280

>hRSV light chain amino acid sequence without signal sequence in TT-hRSV-T7-integrated is SEQ ID NO: 285

FIG. 26A

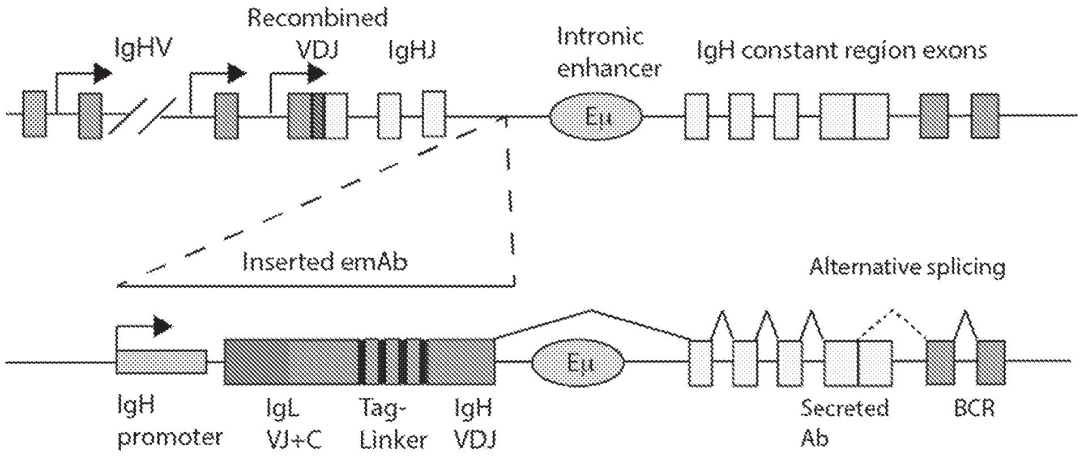


FIG. 26B

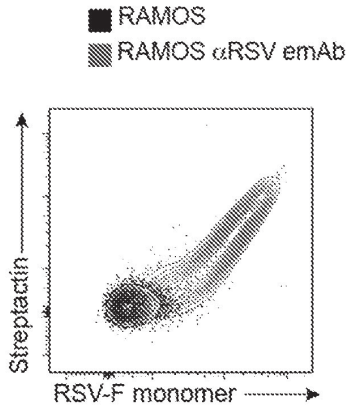


FIG. 26C

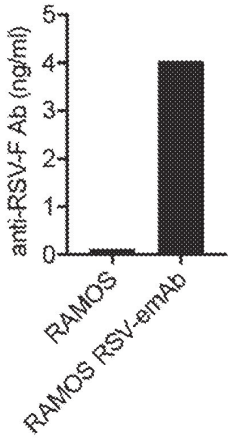


FIG. 26D

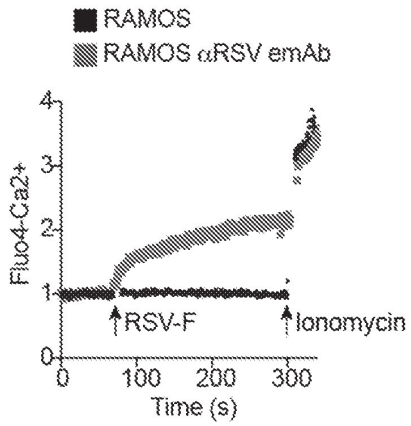


FIG. 27A

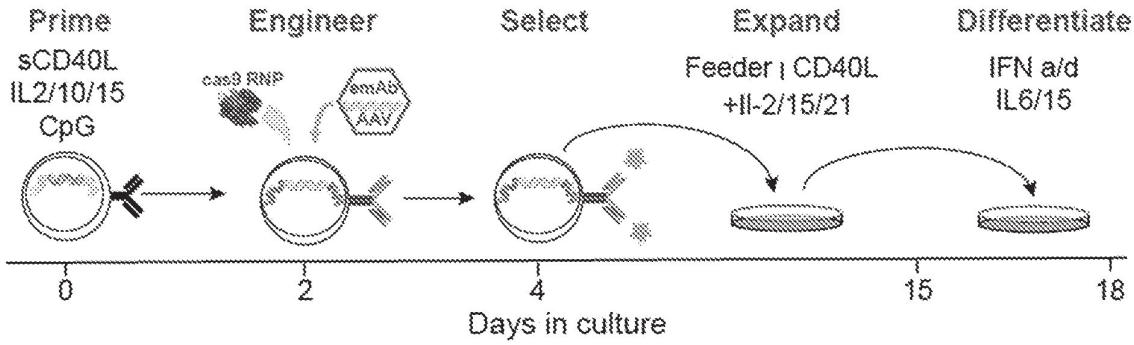


FIG. 27B

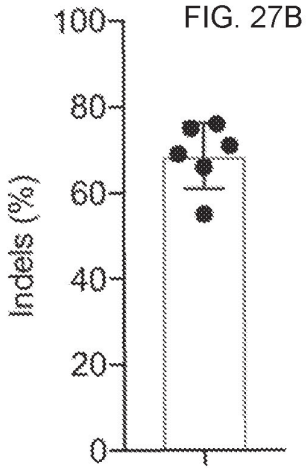


FIG. 27C

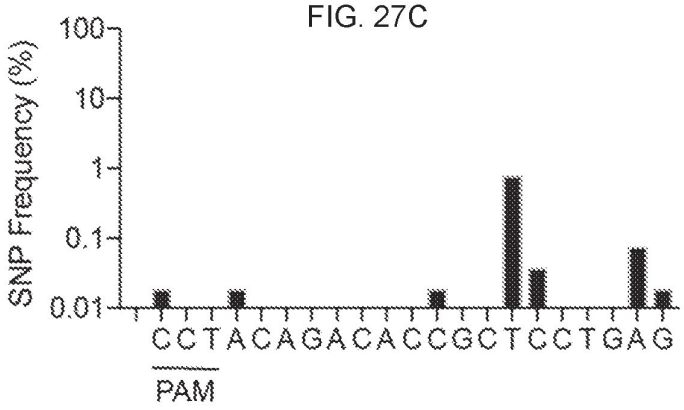


FIG. 27D

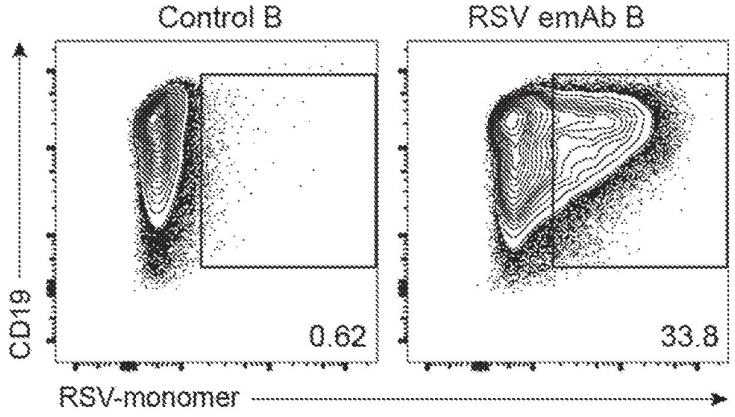


FIG. 27E

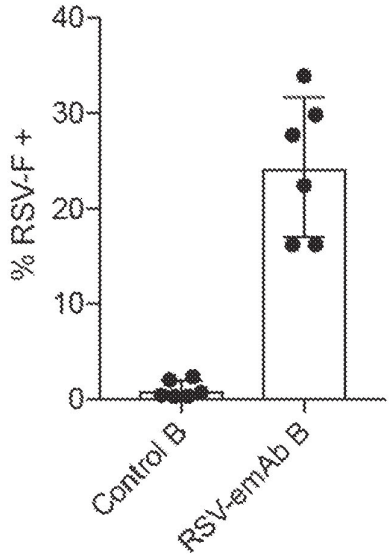


FIG. 27F

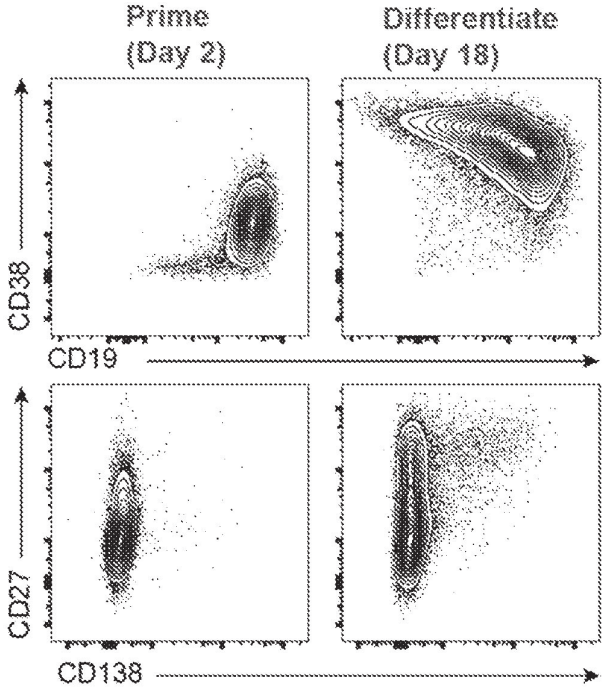


FIG. 27G

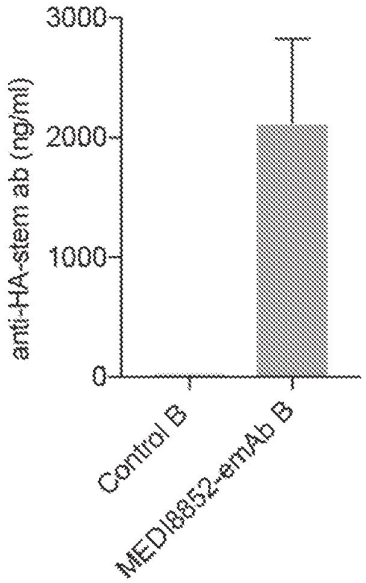


FIG. 28

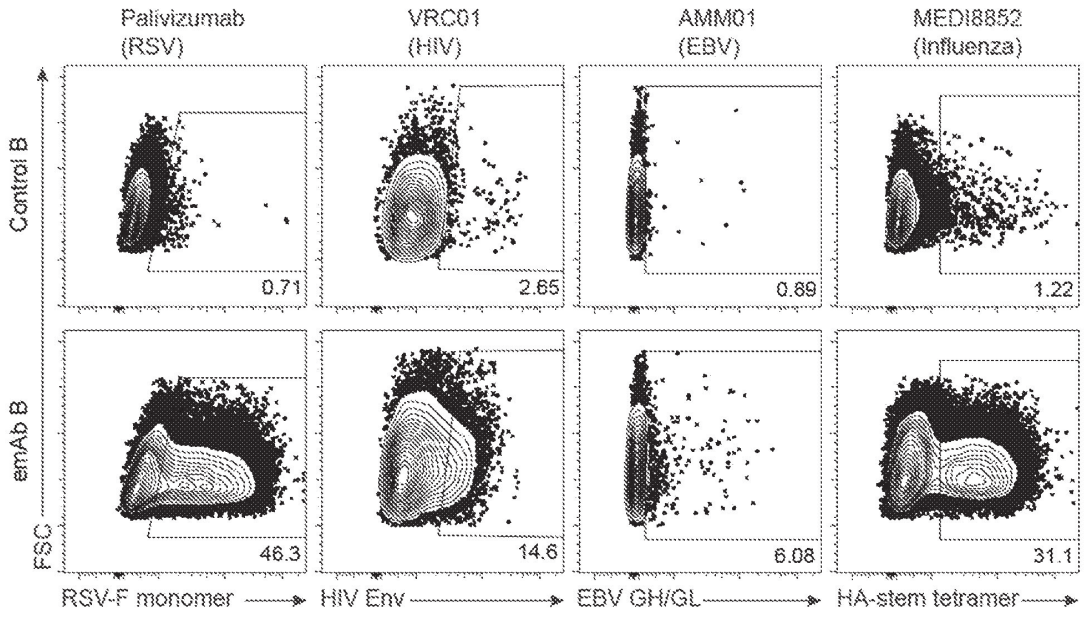

Palivizumab
(RSV)
VRC01
(HIV)
AMM01
(EBV)
MEDI8852
(Influenza)
Control B
emAb B
FSC
0.71
2.65
0.89
1.22
46.3
14.6
6.08
31.1
RSV-F monomer
HIV Env
EBV GH/GL
HA-stem tetramer

FIG. 29A

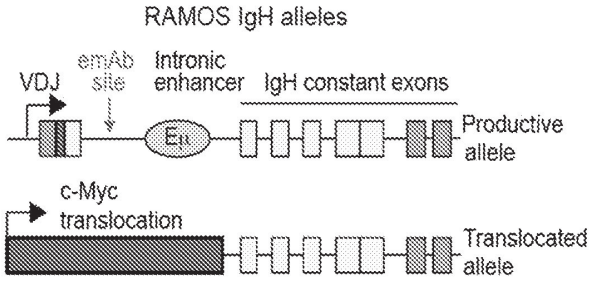


FIG. 29B

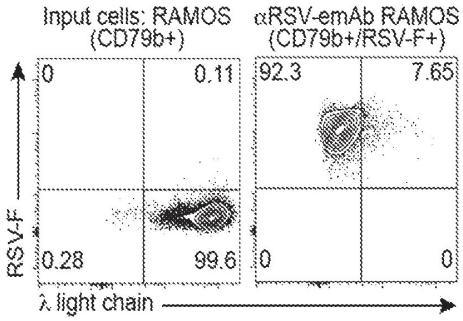


FIG. 29C

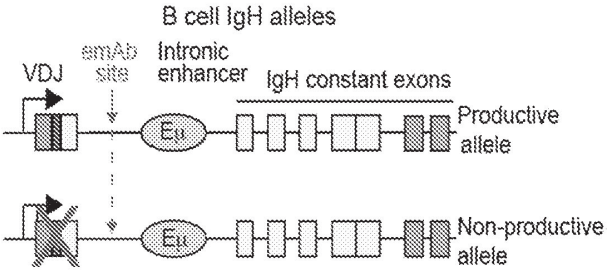


FIG. 29D

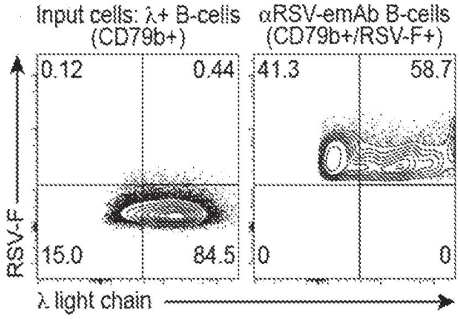


FIG. 30A

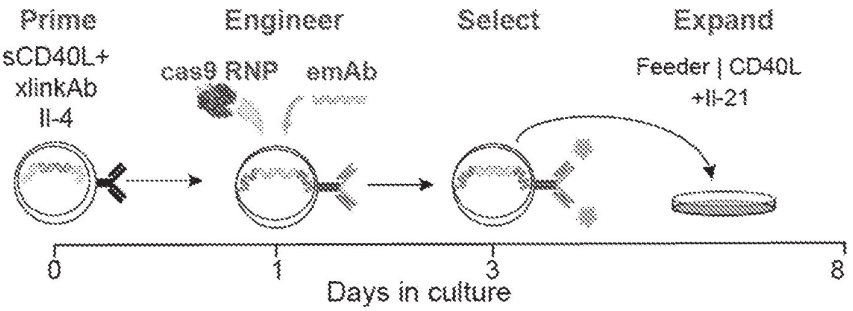


FIG. 30B

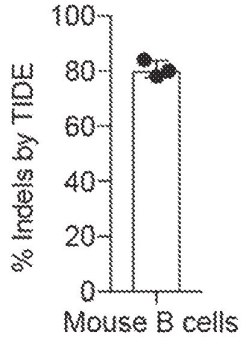


FIG. 30C

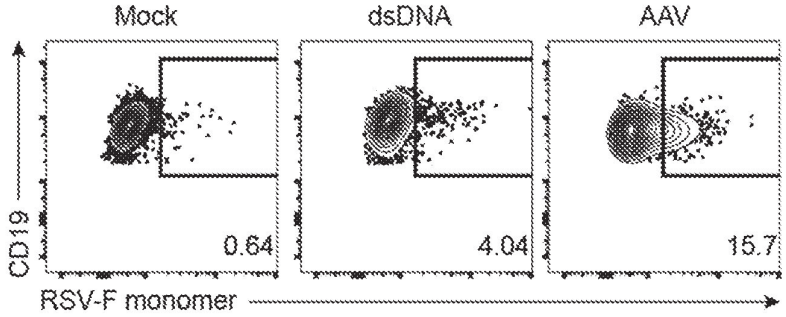


FIG. 30D

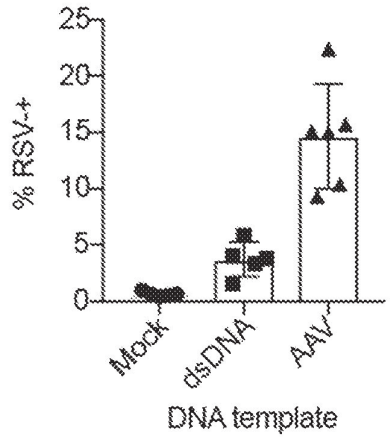


FIG. 30E

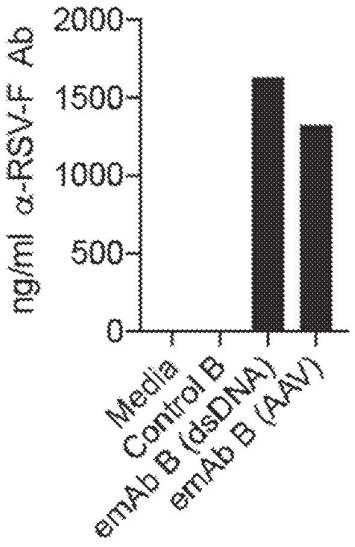


FIG. 31A

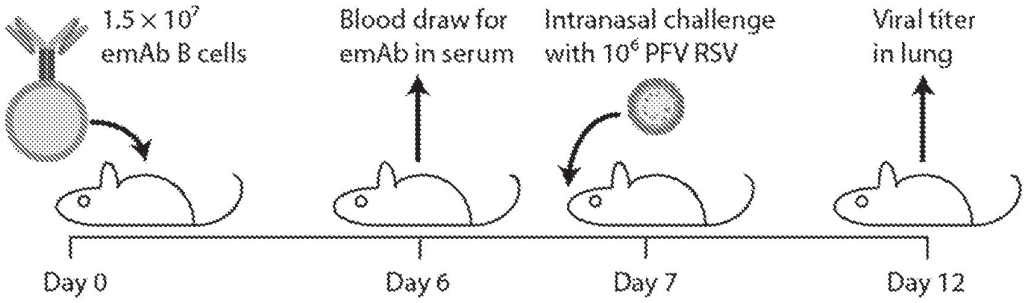


FIG. 31B

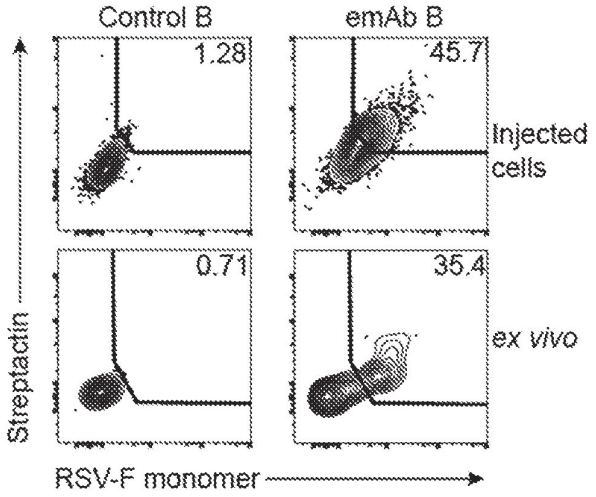


FIG. 31C

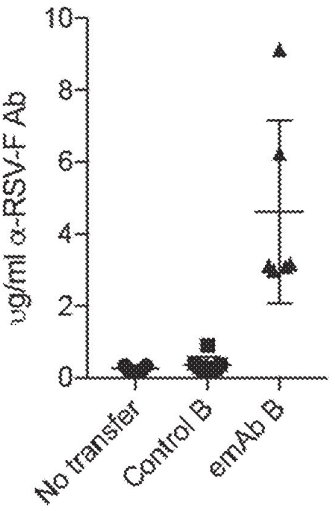


FIG. 31D

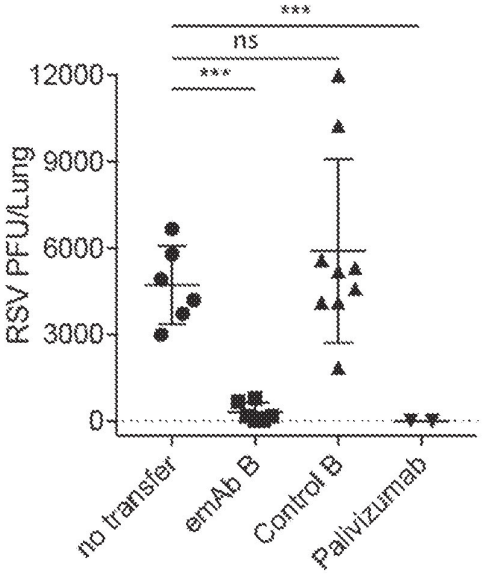


FIG. 32A

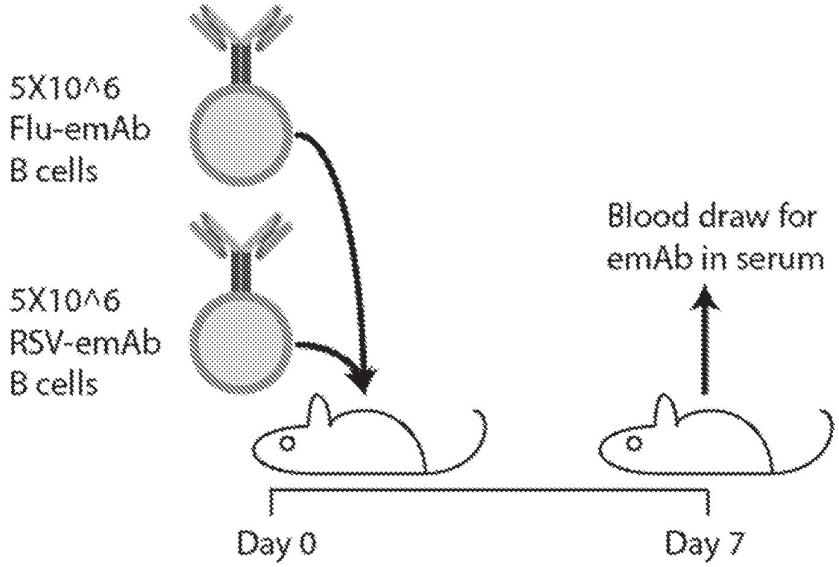


FIG. 32B

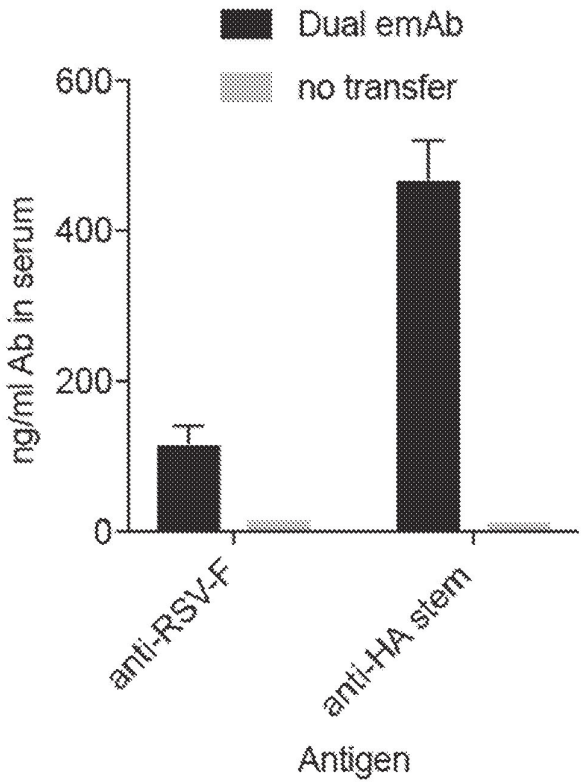


FIG. 33A

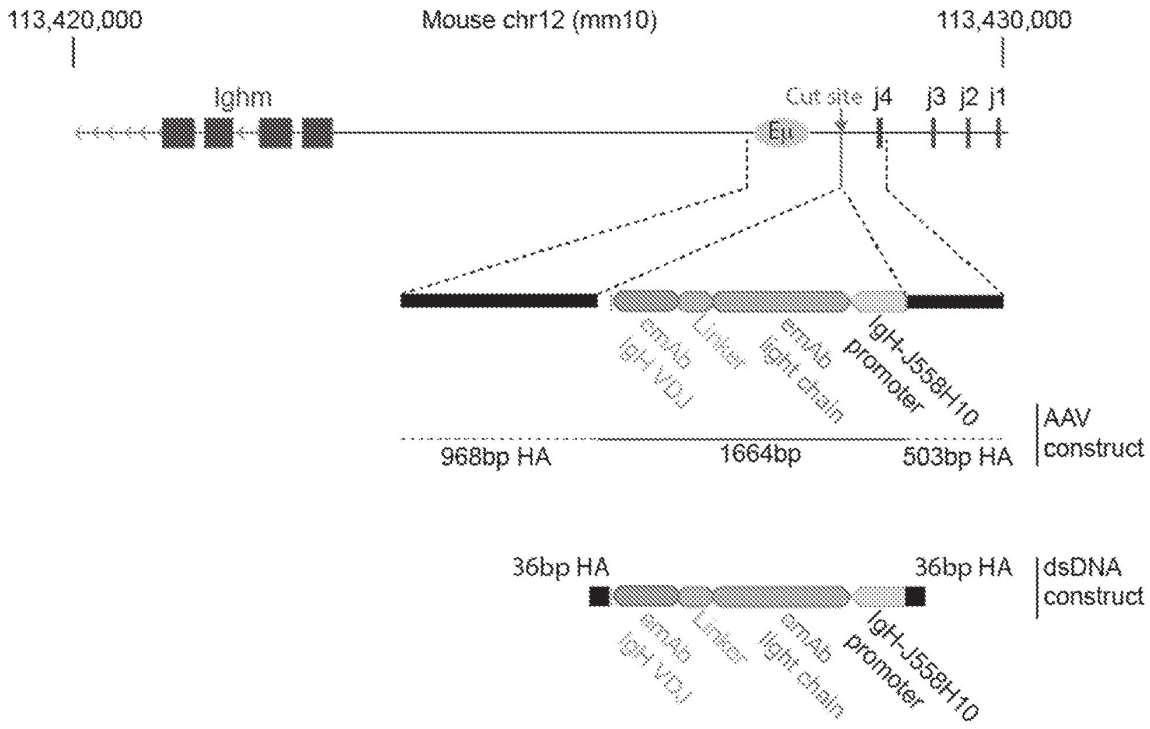


FIG. 33B

