

FIG. 1A

Tau Isoform		10	20	30	40	50	60	
3R0N (Seq. ID: 6)	NAEPHQEFVWEDHAGTYGLGDRKDQGGYTMHQDQEGDIDAGLK-----							44
3R1N (Seq. ID: 5)	NAEPHQEFVWEDHAGTYGLGDRKDQGGYTMHQDQEGDIDAGLKESPLQTPTEDGSEEPG							60
3R2N (Seq. ID: 4)	NAEPHQEFVWEDHAGTYGLGDRKDQGGYTMHQDQEGDIDAGLKESPLQTPTEDGSEEPG							60
4R0N (Seq. ID: 3)	NAEPHQEFVWEDHAGTYGLGDRKDQGGYTMHQDQEGDIDAGLK-----							44
4R1N (Seq. ID: 2)	NAEPHQEFVWEDHAGTYGLGDRKDQGGYTMHQDQEGDIDAGLKESPLQTPTEDGSEEPG							60
4R2N (Seq. ID: 1)	NAEPHQEFVWEDHAGTYGLGDRKDQGGYTMHQDQEGDIDAGLKESPLQTPTEDGSEEPG							60
Prim. cons.	NAEPHQEFVWEDHAGTYGLGDRKDQGGYTMHQDQEGDIDAGLKESPLQTPTEDGSEEPG							
		70	80	90	100	110	120	
3R0N (Seq. ID: 6)	-----AEEAGIGDTPSLEDEAAG							82
3R1N (Seq. ID: 5)	SETSDAKSTPTAE-----AEEAGIGDTPSLEDEAAG							91
3R2N (Seq. ID: 4)	SETSDAKSTPTAEDVTAPLVDEGAPCKQAAQPHTEIPEGTTAEAGIGDTPSLEDEAAG							120
4R0N (Seq. ID: 3)	-----AEEAGIGDTPSLEDEAAG							82
4R1N (Seq. ID: 2)	SETSDAKSTPTAE-----AEEAGIGDTPSLEDEAAG							91
4R2N (Seq. ID: 1)	SETSDAKSTPTAEDVTAPLVDEGAPCKQAAQPHTEIPEGTTAEAGIGDTPSLEDEAAG							120
Prim. cons.	SETSDAKSTPTAEDVTAPLVDEGAPCKQAAQPHTEIPEGTTAEAGIGDTPSLEDEAAG							
		130	140	150	160	170	180	
3R0N (Seq. ID: 6)	HVTQARMYSKSDGTGSDDKKAKGADGKTKIATPRCAAPPQGQGANATRIPAKTPPAPK							122
3R1N (Seq. ID: 5)	HVTQARMYSKSDGTGSDDKKAKGADGKTKIATPRCAAPPQGQGANATRIPAKTPPAPK							151
3R2N (Seq. ID: 4)	HVTQARMYSKSDGTGSDDKKAKGADGKTKIATPRCAAPPQGQGANATRIPAKTPPAPK							180
4R0N (Seq. ID: 3)	HVTQARMYSKSDGTGSDDKKAKGADGKTKIATPRCAAPPQGQGANATRIPAKTPPAPK							122
4R1N (Seq. ID: 2)	HVTQARMYSKSDGTGSDDKKAKGADGKTKIATPRCAAPPQGQGANATRIPAKTPPAPK							151
4R2N (Seq. ID: 1)	HVTQARMYSKSDGTGSDDKKAKGADGKTKIATPRCAAPPQGQGANATRIPAKTPPAPK							180
Prim. cons.	HVTQARMYSKSDGTGSDDKKAKGADGKTKIATPRCAAPPQGQGANATRIPAKTPPAPK							
		190	200	210	220	230	240	
3R0N (Seq. ID: 6)	TPPSSGEPPKSGDRSGYSSPGSPGTPGSRSRTPSLPTPTTREPKKVAVVRTPPKSPSSAK							182
3R1N (Seq. ID: 5)	TPPSSGEPPKSGDRSGYSSPGSPGTPGSRSRTPSLPTPTTREPKKVAVVRTPPKSPSSAK							211
3R2N (Seq. ID: 4)	TPPSSGEPPKSGDRSGYSSPGSPGTPGSRSRTPSLPTPTTREPKKVAVVRTPPKSPSSAK							240
4R0N (Seq. ID: 3)	TPPSSGEPPKSGDRSGYSSPGSPGTPGSRSRTPSLPTPTTREPKKVAVVRTPPKSPSSAK							182
4R1N (Seq. ID: 2)	TPPSSGEPPKSGDRSGYSSPGSPGTPGSRSRTPSLPTPTTREPKKVAVVRTPPKSPSSAK							211
4R2N (Seq. ID: 1)	TPPSSGEPPKSGDRSGYSSPGSPGTPGSRSRTPSLPTPTTREPKKVAVVRTPPKSPSSAK							240
Prim. cons.	TPPSSGEPPKSGDRSGYSSPGSPGTPGSRSRTPSLPTPTTREPKKVAVVRTPPKSPSSAK							

FIG. 1B

```

                250      260      270      280      290      300
                |        |        |        |        |
3R0N (Seq. ID: 6) SRLQTAPVFPDLKNVSKIGSTENLKHQPGGGK----- 216
3R1N (Seq. ID: 5) SRLQTAPVFPDLKNVSKIGSTENLKHQPGGGK----- 245
3R2N (Seq. ID: 4) SRLQTAPVFPDLKNVSKIGSTENLKHQPGGGK----- 274
4R0N (Seq. ID: 3) SRLQTAPVFPDLKNVSKIGSTENLKHQPGGGKVQI INKKLDLSNVQSKCGSKDNIKHV 242
4R1N (Seq. ID: 2) SRLQTAPVFPDLKNVSKIGSTENLKHQPGGGKVQI INKKLDLSNVQSKCGSKDNIKHV 271
4R2N (Seq. ID: 1) SRLQTAPVFPDLKNVSKIGSTENLKHQPGGGKVQI INKKLDLSNVQSKCGSKDNIKHV 300
*****
Prim. cons.      SRLQTAPVFPDLKNVSKIGSTENLKHQPGGGKVQI INKKLDLSNVQSKCGSKDNIKHV

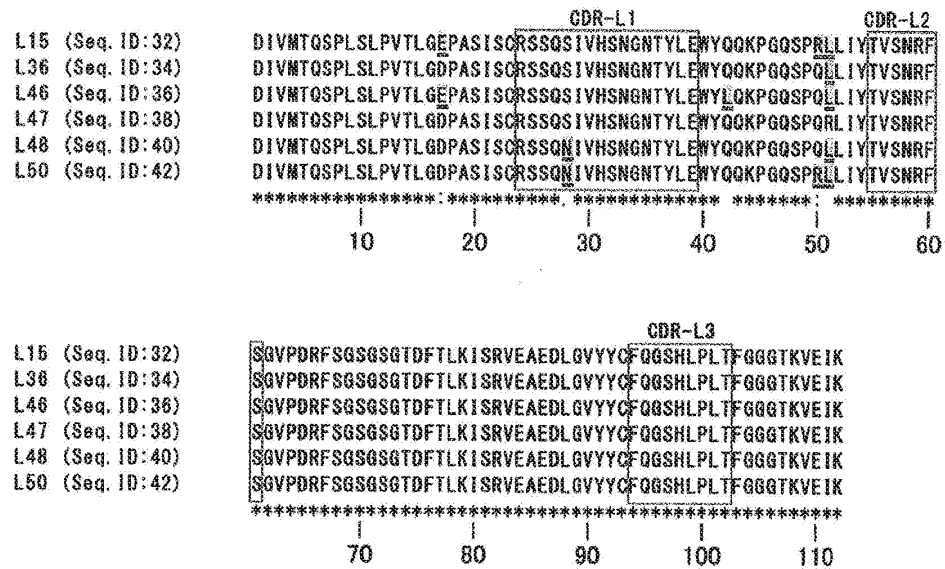
                310      320      330      340      350      360
                |        |        |        |        |
3R0N (Seq. ID: 6) -----VQIVVKPVDLSKVTSCGSLGNIHKKPGGGQVEVKSEKLDKDRVQSKIGSLDNI 271
3R1N (Seq. ID: 5) -----VQIVVKPVDLSKVTSCGSLGNIHKKPGGGQVEVKSEKLDKDRVQSKIGSLDNI 300
3R2N (Seq. ID: 4) -----VQIVVKPVDLSKVTSCGSLGNIHKKPGGGQVEVKSEKLDKDRVQSKIGSLDNI 329
4R0N (Seq. ID: 3) PGGGSVQIVVKPVDLSKVTSCGSLGNIHKKPGGGQVEVKSEKLDKDRVQSKIGSLDNI 302
4R1N (Seq. ID: 2) PGGGSVQIVVKPVDLSKVTSCGSLGNIHKKPGGGQVEVKSEKLDKDRVQSKIGSLDNI 331
4R2N (Seq. ID: 1) PGGGSVQIVVKPVDLSKVTSCGSLGNIHKKPGGGQVEVKSEKLDKDRVQSKIGSLDNI 360
*****
Prim. cons.      PGGGSVQIVVKPVDLSKVTSCGSLGNIHKKPGGGQVEVKSEKLDKDRVQSKIGSLDNI

                370      380      390      400      410      420
                |        |        |        |        |
3R0N (Seq. ID: 6) THVPGGGNKKIETHKLTFRENAKAKTDHGAEIVYKSPVVS GDTSPRHLSNVSSSTGSDMV 331
3R1N (Seq. ID: 5) THVPGGGNKKIETHKLTFRENAKAKTDHGAEIVYKSPVVS GDTSPRHLSNVSSSTGSDMV 360
3R2N (Seq. ID: 4) THVPGGGNKKIETHKLTFRENAKAKTDHGAEIVYKSPVVS GDTSPRHLSNVSSSTGSDMV 389
4R0N (Seq. ID: 3) THVPGGGNKKIETHKLTFRENAKAKTDHGAEIVYKSPVVS GDTSPRHLSNVSSSTGSDMV 362
4R1N (Seq. ID: 2) THVPGGGNKKIETHKLTFRENAKAKTDHGAEIVYKSPVVS GDTSPRHLSNVSSSTGSDMV 391
4R2N (Seq. ID: 1) THVPGGGNKKIETHKLTFRENAKAKTDHGAEIVYKSPVVS GDTSPRHLSNVSSSTGSDMV 420
*****
Prim. cons.      THVPGGGNKKIETHKLTFRENAKAKTDHGAEIVYKSPVVS GDTSPRHLSNVSSSTGSDMV

                430      440
                |        |
3R0N (Seq. ID: 1) DSPQLATLADEVSAASLAKQGL 352
3R1N (Seq. ID: 1) DSPQLATLADEVSAASLAKQGL 381
3R2N (Seq. ID: 1) DSPQLATLADEVSAASLAKQGL 410
4R0N (Seq. ID: 1) DSPQLATLADEVSAASLAKQGL 369
4R1N (Seq. ID: 1) DSPQLATLADEVSAASLAKQGL 412
4R2N (Seq. ID: 1) DSPQLATLADEVSAASLAKQGL 441
*****
Prim. cons.      DSPQLATLADEVSAASLAKQGL

```

FIG. 2A



[illegible]

FIG. 3

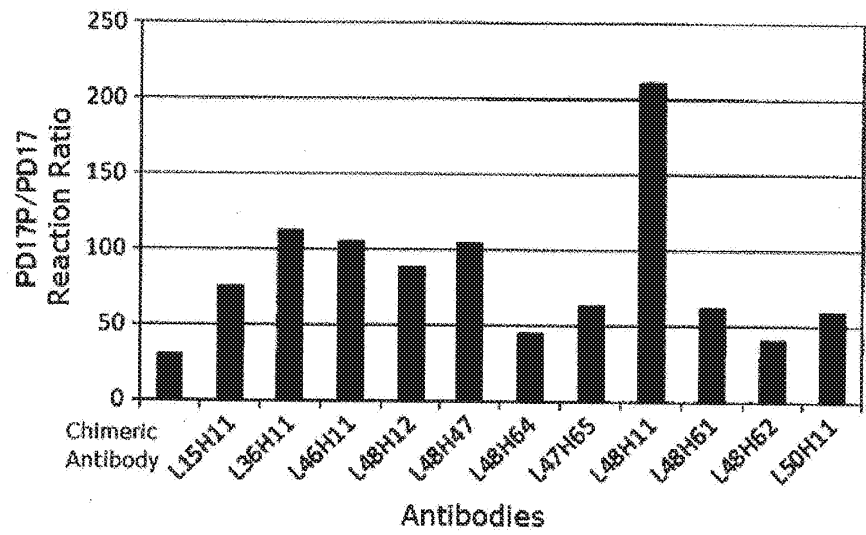
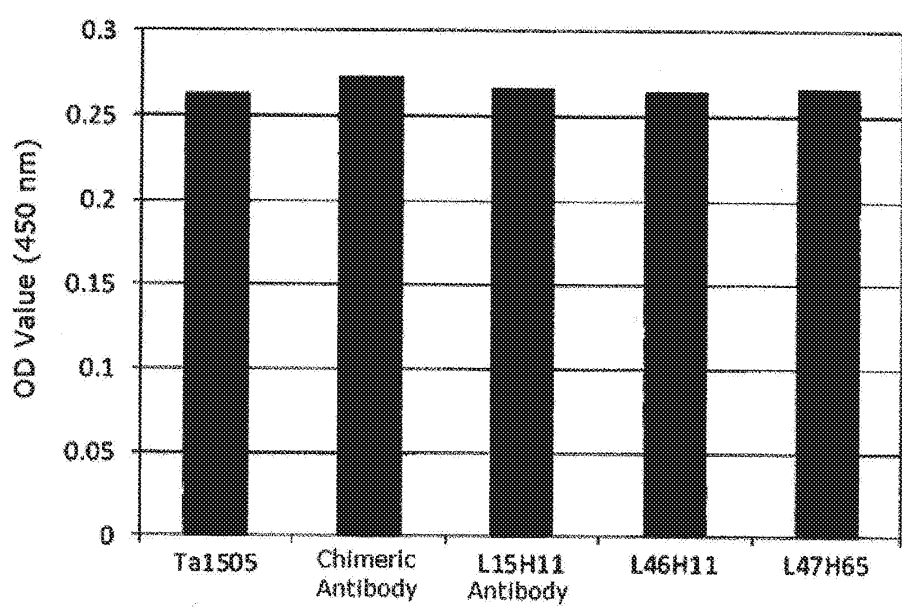


FIG. 4



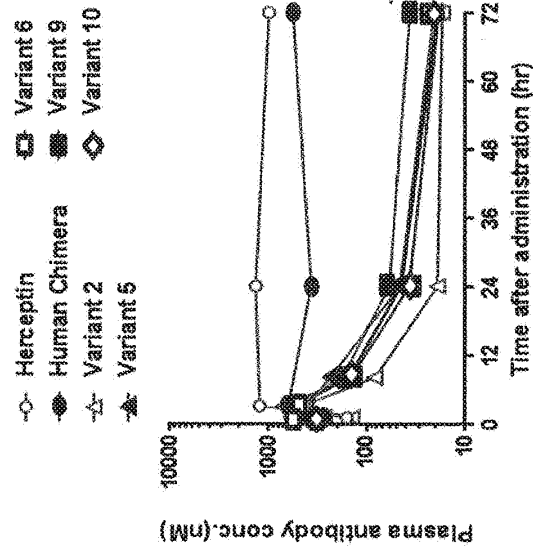
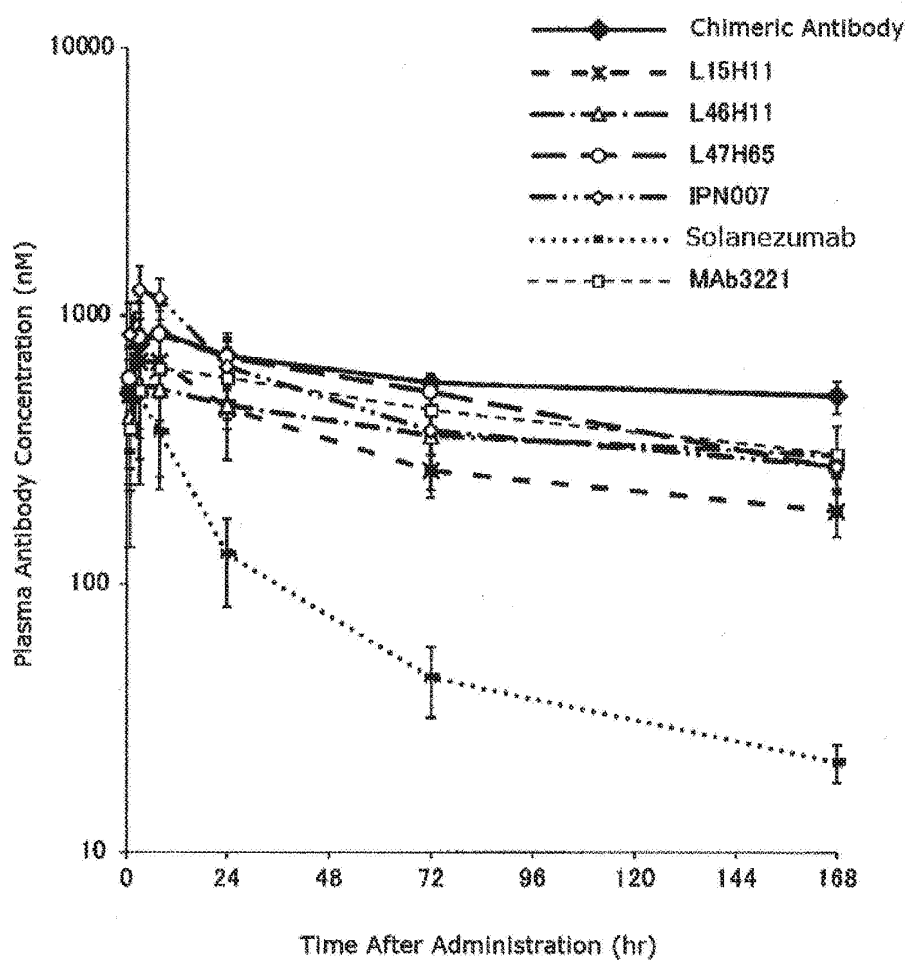


FIG. 5A

FIG. 5B



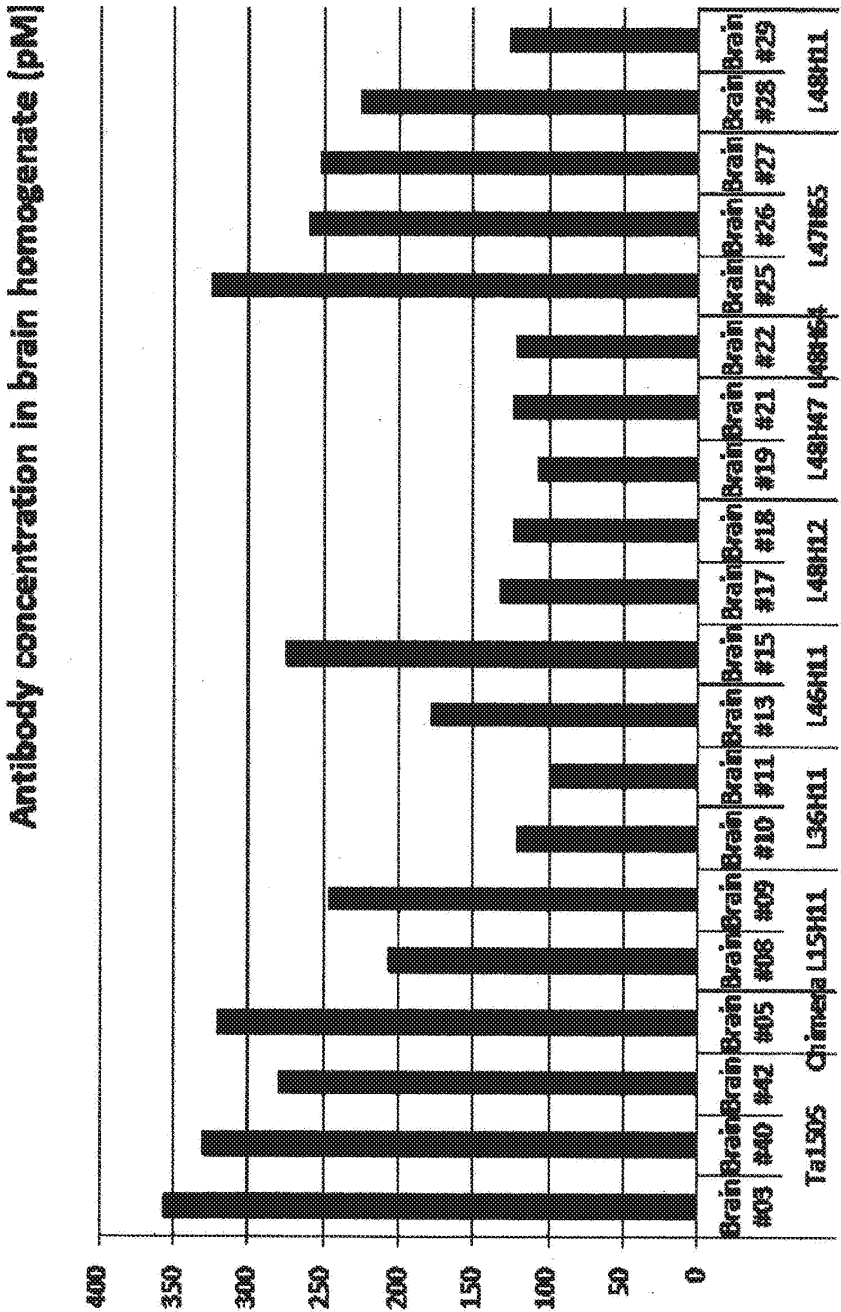
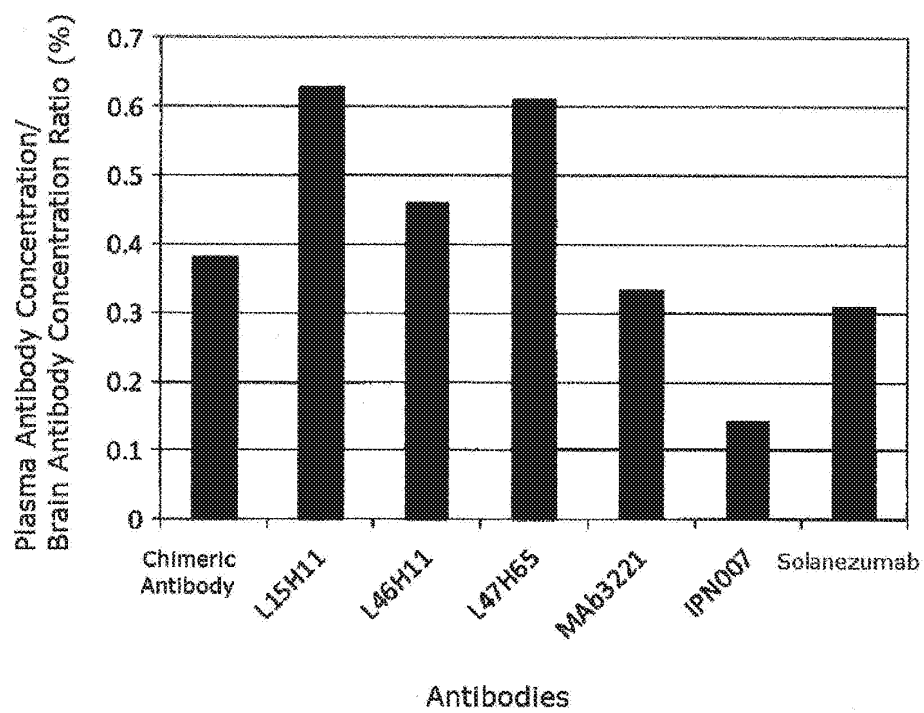


FIG. 6A

FIG. 6B



[illegible][illegible]

FIG. 7A

Ta336-VH0-40ose	EVQLV	ESGGGLVQPKGSLKLS	CAASGF	AFHS	FALNN	NRCA	PGVSL	EWYH	RSKTH	NYAT	FYAD	SVKDR	FTVSR	DDSSM
Ta336-VH1		G	R		I	S		G			A			NT
Ta336-VH5		G	R		I			G			A			NT

Ia1535-VH0-Muse	VYILQMNLLKTEDTGIYYCVRGRGPRDSWF	GYWGGQSTL	WT	VISA
Ia1535-VH11	A...	S...	AT...	S
Ia1535-VH65	A...	S...	AT...	S

FIG. 7B

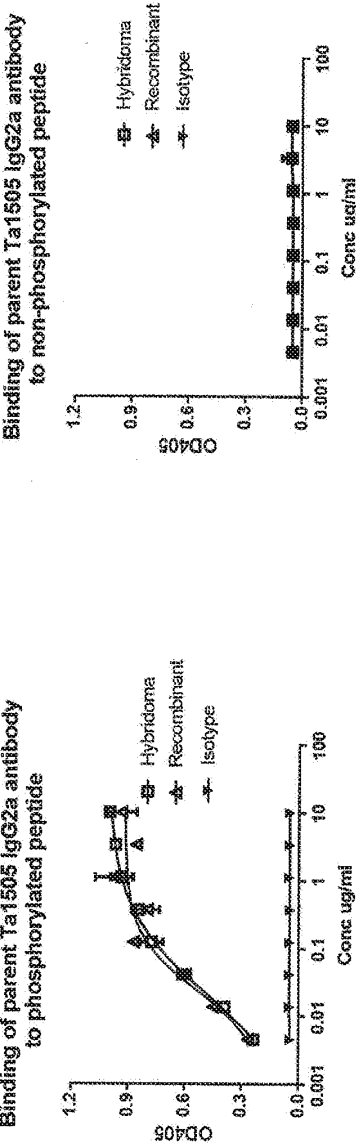


FIG. 8A

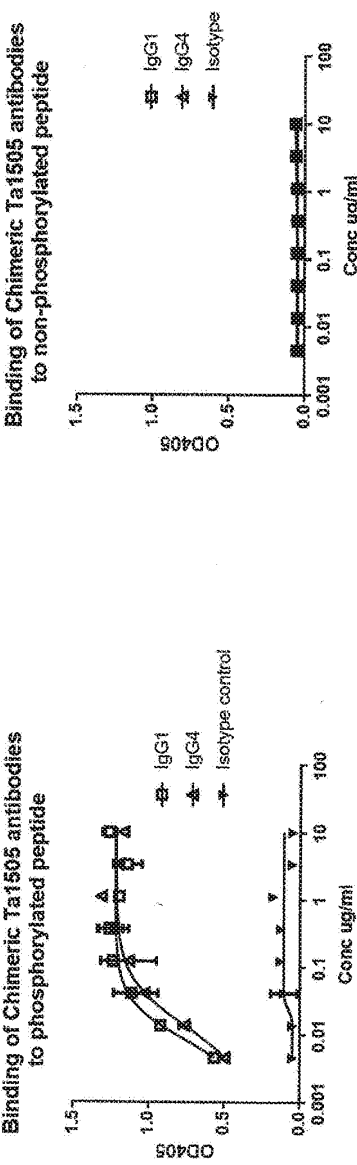


FIG. 8C

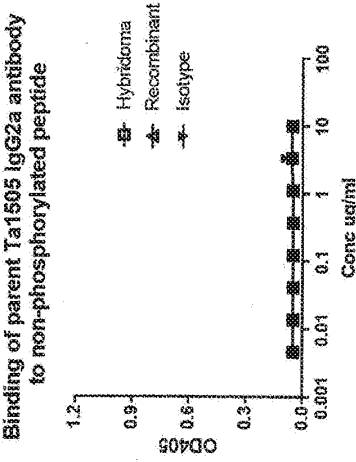


FIG. 8B

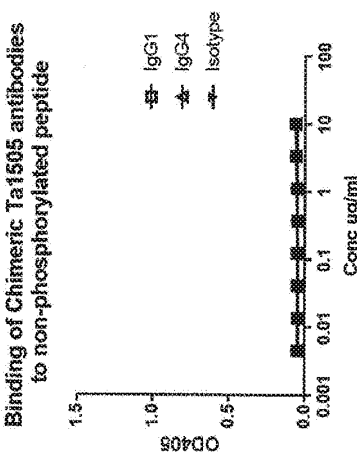


FIG. 8D

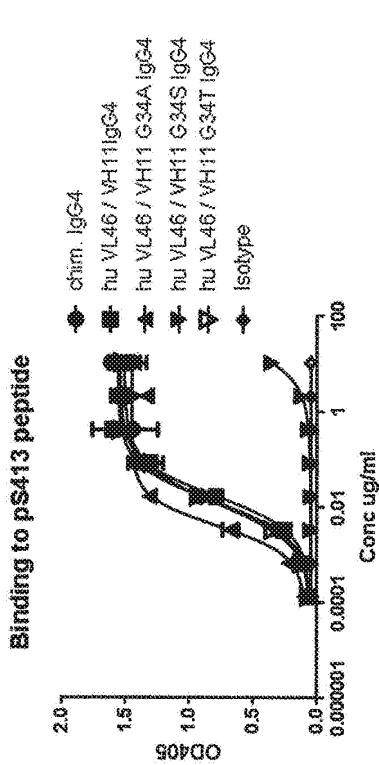


FIG. 9A

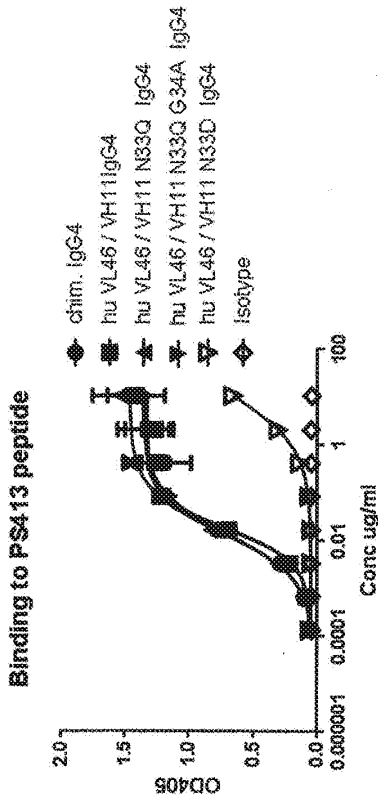


FIG. 9B

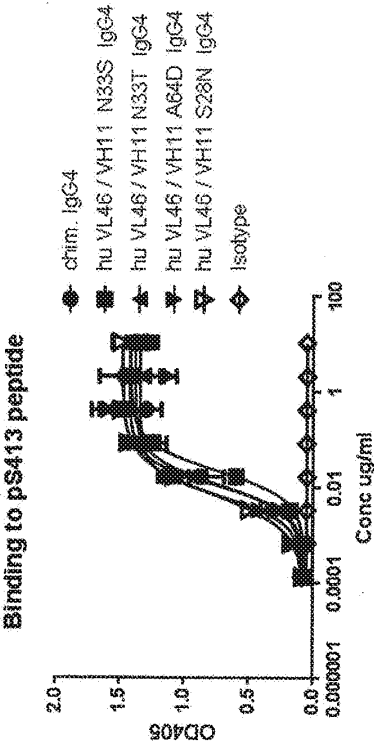


FIG. 9C

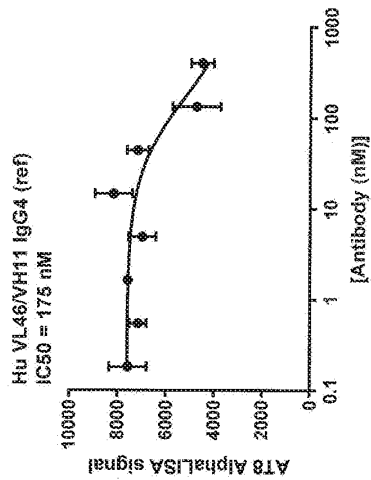


FIG. 10A

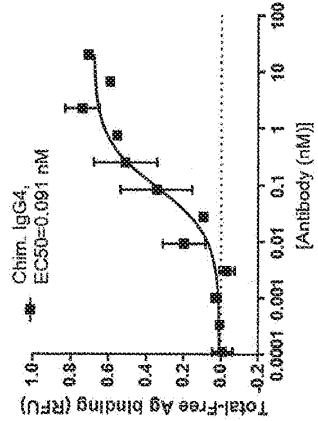


FIG. 10B

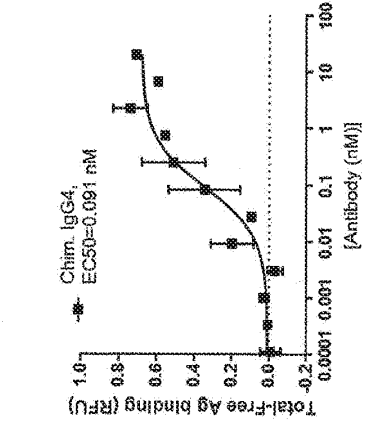


FIG. 10C

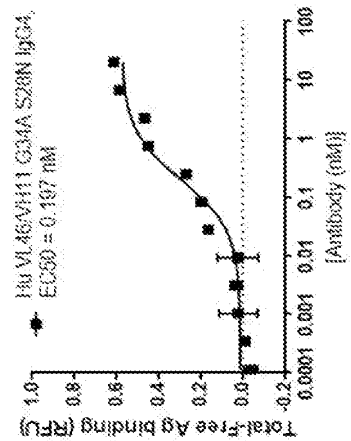


FIG. 10D

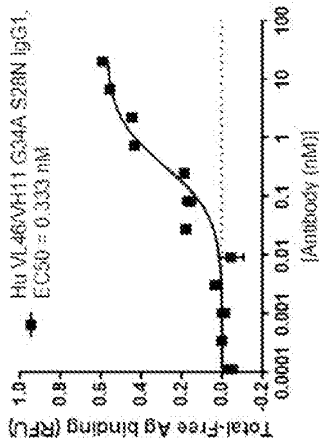


FIG. 10E

FIG. 11A

>Ta1505-VL00-Mouse SEQ ID NO:84
DILMTQTPLSLPVSILGDAQASISCRSSQNIHSHNGNTYLEWYLQKPGQSPKVLIVTVSNRFSGVDRFSGSGSGTDFTLKISRVEAEDLGVVYCFQGSHLPLTFGGGKLELK

vicDR1 RSSQNIHSHNGNTYLE SEQ ID NO:81

vicDR2 TVSNRFSG SEQ ID NO:82

vicDR3 FQGSHLPLT SEQ ID NO:83

>Ta1505-VL46 SEQ ID NO:103
DIVMTQSPSLPVTLGEPASISCRSSQSIHSHNGNTYLEWYLQKPGQSPQLLIVTVSNRFSGVDRFSGSGSGTDFTLKISRVEAEDLGVVYCFQGSHLPLTFGGGKVEIK

vicDR1 RSSQSIHSHNGNTYLE SEQ ID NO:91

vicDR2 TVSNRFSG SEQ ID NO:82

vicDR3 FQGSHLPLT SEQ ID NO:83

>Ta1505-VL47 SEQ ID NO:104
DIVMTQSPSLPVTLGDPASISCRSSQSIHSHNGNTYLEWYQQKPGQSPQRLIVTVSNRFSGVDRFSGSGSGTDFTLKISRVEAEDLGVVYCFQGSHLPLTFGGGKVEIK

vicDR1 RSSQSIHSHNGNTYLE SEQ ID NO:92

vicDR2 TVSNRFSG SEQ ID NO:82

vicDR3 FQGSHLPLT SEQ ID NO:83

FIG. 11B

>Ta1505-VL46_G34A SEQ ID NO:105
DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}SNANTYLEWYLQKPGQSPQ^{LL}IYTVSNR^{FS}GV^{PD}R^{FS}GS^{GS}GTDFTLKISRVEAEDLG^{VV}YCFQGS^{HL}PLTFFGGG^{TK}VEIK
VICDR1 RSSQSI^{VH}SNANTYLE SEQ ID NO:93
VICDR2 TVSNR^{FS}G SEQ ID NO:82
VICDR3 FQGS^{HL}PLT SEQ ID NO:83

>Ta1505-VL46_G34S SEQ ID NO:106
DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}SNANTYLEWYLQKPGQSPQ^{LL}IYTVSNR^{FS}GV^{PD}R^{FS}GS^{GS}GTDFTLKISRVEAEDLG^{VV}YCFQGS^{HL}PLTFFGGG^{TK}VEIK
VICDR1 RSSQSI^{VH}SNANTYLE SEQ ID NO:94
VICDR2 TVSNR^{FS}G SEQ ID NO:82
VICDR3 FQGS^{HL}PLT SEQ ID NO:83

>Ta1505-VL46_G34T SEQ ID NO:107
DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}SNANTYLEWYLQKPGQSPQ^{LL}IYTVSNR^{FS}GV^{PD}R^{FS}GS^{GS}GTDFTLKISRVEAEDLG^{VV}YCFQGS^{HL}PLTFFGGG^{TK}VEIK
VICDR1 RSSQSI^{VH}SNANTYLE SEQ ID NO:95
VICDR2 TVSNR^{FS}G SEQ ID NO:82
VICDR3 FQGS^{HL}PLT SEQ ID NO:83

>Ta1505-VL46_N33Q SEQ ID NO:108
DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}SQGNANTYLEWYLQKPGQSPQ^{LL}IYTVSNR^{FS}GV^{PD}R^{FS}GS^{GS}GTDFTLKISRVEAEDLG^{VV}YCFQGS^{HL}PLTFFGGG^{TK}VEIK
VICDR1 RSSQSI^{VH}SQGNANTYLE SEQ ID NO:96
VICDR2 TVSNR^{FS}G SEQ ID NO:82

FIG. 11C

VICDR3 FQGSHLPLT SEQ ID NO:83

>Ta1505-VL46_N33Q_G34A SEQ ID NO:109
DIVMTQSP^{LS}LPVTLGEPASISCRSSQSIVHSQANTYLEWYLQKPGQSPQLLIYTVSNRFSGV^{PD}RFSGSGGTDFTLKISRVEAEDLG^{VY}YCFQGSHLPLTFGGGTKVEIK

VICDR1 RSSQSIVHSQANTYLE SEQ ID NO:97

VICDR2 TVSNRFSG SEQ ID NO:82

VICDR3 FQGSHLPLT SEQ ID NO:83

>Ta1505-VL46_N33D SEQ ID NO:110
DIVMTQSP^{LS}LPVTLGEPASISCRSSQSIVHSDGNTYLEWYLQKPGQSPQLLIYTVSNRFSGV^{PD}RFSGSGGTDFTLKISRVEAEDLG^{VY}YCFQGSHLPLTFGGGTKVEIK

VICDR1 RSSQSIVHSDGNTYLE SEQ ID NO:98

VICDR2 TVSNRFSG SEQ ID NO:82

VICDR3 FQGSHLPLT SEQ ID NO:83

>Ta1505-VL46_N33S SEQ ID NO:111
DIVMTQSP^{LS}LPVTLGEPASISCRSSQSIVHSSGNTYLEWYLQKPGQSPQLLIYTVSNRFSGV^{PD}RFSGSGGTDFTLKISRVEAEDLG^{VY}YCFQGSHLPLTFGGGTKVEIK

VICDR1 RSSQSIVHSSGNTYLE SEQ ID NO:99

VICDR2 TVSNRFSG SEQ ID NO:82

VICDR3 FQGSHLPLT SEQ ID NO:83

>Ta1505-VL46_N33T SEQ ID NO:112
DIVMTQSP^{LS}LPVTLGEPASISCRSSQSIVHSTGNTYLEWYLQKPGQSPQLLIYTVSNRFSGV^{PD}RFSGSGGTDFTLKISRVEAEDLG^{VY}YCFQGSHLPLTFGGGTKVEIK

FIG. 11D

νCDR1 RSSQIVHSTGNTYLE SEQ ID NO:100
νCDR2 TVSNRFSG SEQ ID NO:82
νCDR3 FQGSHLPLT SEQ ID NO:83

>Ta1505-VL46_S28N SEQ ID NO:113
DIVMTQSP_{LS}LPVTILGEPASISCRSSQIVHSNGNTYLEWYLQKPGQSPQLLTVSNRFSGVPDRFSGSGGTFTLKISRVEAEDLGVVYCFQGSHLPLTFGGGTKVEIK

νCDR1 RSSQIVHSNGNTYLE SEQ ID NO:101
νCDR2 TVSNRFSG SEQ ID NO:82
νCDR3 FQGSHLPLT SEQ ID NO:83

*Ta1505-VL46_G34A_S28N SEQ ID NO:114
DIVMTQSP_{LS}LPVTILGEPASISCRSSQIVHSNANTYLEWYLQKPGQSPQLLTVSNRFSGVPDRFSGSGGTFTLKISRVEAEDLGVVYCFQGSHLPLTFGGGTKVEIK

νCDR1 RSSQIVHSNANTYLE SEQ ID NO:102
νCDR2 TVSNRFSG SEQ ID NO:82
νCDR3 FQGSHLPLT SEQ ID NO:83

>Ta1505-VH00-Mouse SEQ ID NO:89
EVQLVESGGGLVQPKGSLKLSCAASGFAFNSFALNWVRQAPGKSLEWVWVHIRSKTNNYATFYADSVKDRFTVSRDSDSQSMVYLQMNNLKTEDTGIYYCVRRGPRDS
WFGYWGQGTLVTVSA

νCDR1 SFALN SEQ ID NO:86
νCDR2 HIRSKTNNYATFYADSVKD SEQ ID NO:87
νCDR3 RGPRDSWFGY SEQ ID NO:88

FIG. 11E

>Ta1505-VH11 SEQ ID NO:116
EVQLVESGGGLVQPGGSLRLSCAASGFTFSFALNWVRQAPGKGLEWVGHIRSKTNNYATFYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDS
WFGYWGQGTLVTVSS

vhCDR1 SFALN SEQ ID NO:86
vhCDR2 HIRSKTNNYATFYAASVKD SEQ ID NO:115
vhCDR3 RGPRDSWFGY SEQ ID NO:88

>Ta1505-VH65 SEQ ID NO:117
EVQLVESGGGLVQPGGSLRLSCAASGFAFNSFALNWVRQAPGKGLEWVGHIRSKTNNYATFYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDSW
FGYWGQGTLVTVSS

vhCDR1 SFALN SEQ ID NO:86
vhCDR2 HIRSKTNNYATFYAASVKD SEQ ID NO:115
vhCDR3 RGPRDSWFGY SEQ ID NO:88

FIG. 12A

>Human_IgG1_P01857 SEQ ID NO:135
ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTPVSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHHTCPPC
PAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVSVLTVLIHQDWLNGKEYKCKVSNKALPAPIEKTISKA
KGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSEFFLYSKLTVDKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPGK

>Human_IgG1_P01857_L234A_L235A SEQ ID NO:136
ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTPVSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHHTCPPC
PAPEaaGGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVSVLTVLIHQDWLNGKEYKCKVSNKALPAPIEKTISKA
KGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSEFFLYSKLTVDKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPGK

>Human_IgG1_P01857_L234A_L235A_D265S SEQ ID NO:137
ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTPVSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHHTCPPC
PAPEaaGGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVSVLTVLIHQDWLNGKEYKCKVSNKALPAPIEKTISKA
KGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSEFFLYSKLTVDKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPGK

>Human_IgG1_YTE_P01857_(M252Y_S254T_T256E) SEQ ID NO:138
ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTPVSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHHTCPPC
PAPELLGGPSVFLFPPKPKDTLIrRePEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVSVLTVLIHQDWLNGKEYKCKVSNKALPAPIEKTISKAK
GQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSEFFLYSKLTVDKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPGK

>Human_IgG1_N297A_P01857 SEQ ID NO:139

FIG. 12B

ASTKGPSVFLAPSSKSTGGTAALGCLVKDYFPEPVTWNSGALTSGVHTFPAVLQSSGLYSLSSVTPVSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPC
 PAPELLGGPSVFLFPPPKDITLMISRTPEVTCVVDVSHEDPEVKFNWVVDGVEVHNAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYCKVSNKALPAPIEKTISKA
 KGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

>Human_IgG1_N297Q_P01857 SEQ ID NO:140

ASTKGPSVFLAPSSKSTGGTAALGCLVKDYFPEPVTWNSGALTSGVHTFPAVLQSSGLYSLSSVTPVSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPC
 PAPELLGGPSVFLFPPPKDITLMISRTPEVTCVVDVSHEDPEVKFNWVVDGVEVHNAKTKPREEQYqSTYRVVSVLTVLHQDWLNGKEYCKVSNKALPAPIEKTISKA
 KGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

>P01859_Human_IgG2 SEQ ID NO:141

ASTKGPSVFLAPCSRSTSESTAALGCLVKDYFPEPVTWNSGALTSGVHTFPAVLQSSGLYSLSSVTPVSSNFGTQTYTCNVDHKPSNTKVDKTVKCCVCCPPCPA
 PPVAGPSVFLFPPPKDITLMISRTPEVTCVVDVSHEDPEVQFNWVVDGVEVHNAKTKPREEQFNSTFRVSVLTVLHQDWLNGKEYCKVSNKGLPAPIEKTISKTKG
 QPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDISEVESNGQPENNYKTTTPMILDSGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

>P01861_Human_IgG4 SEQ ID NO:142

ASTKGPSVFLAPCSRSTSESTAALGCLVKDYFPEPVTWNSGALTSGVHTFPAVLQSSGLYSLSSVTPVSSSLGTQTYTCNVDHKPSNTKVDKRVESKYGPPCPSCPAP
 EFLGGPSVFLFPPPKDITLMISRTPEVTCVVDVSDQEDPEVQFNWVVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYCKVSNKGLPSSIEKTISKAKG
 QPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSRLTVDKSRWQEGNVFCSCVMHEALHNHYTQKSLSLSLIGK

>Human_IgG4_S228P_P01861 SEQ ID NO:143

ASTKGPSVFLAPCSRSTSESTAALGCLVKDYFPEPVTWNSGALTSGVHTFPAVLQSSGLYSLSSVTPVSSSLGTQTYTCNVDHKPSNTKVDKRVESKYGPPCPCPAP
 EFLGGPSVFLFPPPKDITLMISRTPEVTCVVDVSDQEDPEVQFNWVVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYCKVSNKGLPSSIEKTISKAKG
 QPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSRLTVDKSRWQEGNVFCSCVMHEALHNHYTQKSLSLSLIGK

FIG. 12C

Human kappa light constant domain SEQ ID NO:79

RTVAAPSVFIFFPPSDEQLKSGTASVWCCLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSSTLSLTLSKADYEEKHKVYACEVTHQGLSSPVTKSFNRGEC

Human lambda light constant domain SEQ ID NO:80

GQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTTPTSKQSNKNNKYAASSVLSLTPEQWKSHRYSVCQVTHEGSTVEKTVAPTECS

FIG. 13A

H11 HC IgG1: SEQ ID NO:144

EVQLVESGGGLVQPGGSLRLSCAASGFTFSFALNWVRQAPGKGLEWVGHIRSKTNNYATFYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDS
WFGYWGQGTLVTVSS/ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTQTYICNVNHKPSNTKV
 DKKVEPKSCDKTHTCPPCPAPELGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYK
 CKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCFSVMHE
 ALHNHYTQKSLSLSPGK

H11 Human_IgG1_L234A_L235A SEQ ID NO:145

EVQLVESGGGLVQPGGSLRLSCAASGFTFSFALNWVRQAPGKGLEWVGHIRSKTNNYATFYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDS
WFGYWGQGTLVTVSS/ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTQTYICNVNHKPSNTKV
 DKKVEPKSCDKTHTCPPCPAPEaaGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEY
 KCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCFSVMH
 EALHNHYTQKSLSLSPGK

H11 Human_IgG1_L234A_L235A_D265S SEQ ID NO:146

EVQLVESGGGLVQPGGSLRLSCAASGFTFSFALNWVRQAPGKGLEWVGHIRSKTNNYATFYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDS
WFGYWGQGTLVTVSS/STKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTQTYICNVNHKPSNTKVD
 KKVEPKSCDKTHTCPPCPAPEaaGGPSVFLFPPKPKDTLMISRTPEVTCVVAVSSEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYK
 KVSNAKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCFSVMHEA
 LHNHYTQKSLSLSPGK

H11 Human_IgG1_YTE_(M252Y_S254T_T256E) SEQ ID NO:147

FIG. 13B

EVQLVESGGGLVQPGGSLRLSCAASGFTFSFALNWWROAPGKGLEWVGHIRSKTNNVATFYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDS
WFGYWGQGTLVTVSS/STKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSWVTPSSSLGTQTYICNVNHKPSNTKVD
 KKVEPKSCDKTHITCPCPAPELLGGPSVFLFPPKPKDTLIRRePEVTCVAVDVSHEDPEVKFNWVYDGVGVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYCK
 VSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCFSVMHEAL
 HNHYTQKSLSPGK

H11 Human_IgG1_N297A SEQ ID NO:148

EVQLVESGGGLVQPGGSLRLSCAASGFTFSFALNWWROAPGKGLEWVGHIRSKTNNVATFYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDS
WFGYWGQGTLVTVSS/ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSWVTPSSSLGTQTYICNVNHKPSNTKV
 DKVEPKSCDKTHITCPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVAVDVSHEDPEVKFNWVYDGVGVHNAKTKPREEQYASTYRVVSVLTVLHQDWLNGKEYK
 CKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCFSVMHE
 ALHNHYTQKSLSPGK

H11 Human_IgG1_N297Q SEQ ID NO:149

EVQLVESGGGLVQPGGSLRLSCAASGFTFSFALNWWROAPGKGLEWVGHIRSKTNNVATFYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDS
WFGYWGQGTLVTVSS/STKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSWVTPSSSLGTQTYICNVNHKPSNTKVD
 KKVEPKSCDKTHITCPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVAVDVSHEDPEVKFNWVYDGVGVHNAKTKPREEQYqSTYRVVSVLTVLHQDWLNGKEYKC
 KVSNAKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCFSVMHEA
 LHNHYTQKSLSPGK

H11 Human_IgG2 SEQ ID NO:150

EVQLVESGGGLVQPGGSLRLSCAASGFTFSFALNWWROAPGKGLEWVGHIRSKTNNVATFYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDS
WFGYWGQGTLVTVSS/ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSWVTPSSNFGTQTYTCNVDHKPSNTKV
 DKTVERKCCVCPCPAPPVAGPSVFLFPPKPKDTLMISRTPEVTCVAVDVSHEDPEVQFNWVYDGVGVHNAKTKPREEQFNSTFRVSVLTVVHQDWLNGKEYCKV
 SNKGLPAPIEKTISKAKGQPREPQVYTLPPSREEMITKNQVSLTCLVKGFYPSDISVEWESNGQPENNYKTPPMLDSDGSFFLYSKLTVDKSRWQQGNVFCFSVMHEAL
 HNHYTQKSLSPGK

FIG. 13C

H11 Human_IgG4 SEQ ID NO:151

EVQLVESGGGLVQPGGSLRLSCAASGFTFSFALNWVRQAPGKGLEWVGHIRSKTNNVATFYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDS
WFGYWGQGTLVTVSS/STKGPSVFPPLAPCSRSTSESTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTQTYICNVNHKPSNTKVDK
 RVESKYGPPCPAPCFEFLGGPSVFLFPPKPKDTLMISRTPEVTCWVDVSEQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKV
 NKGLPSSIEKTIKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSRLTVDKSRWQEGNVFSCSVMHEALH
 NHYTKQKSLSLGK

H11 Human_IgG4_S228P SEQ ID NO:152

EVQLVESGGGLVQPGGSLRLSCAASGFTFSFALNWVRQAPGKGLEWVGHIRSKTNNVATFYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDS
WFGYWGQGTLVTVSS/ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTQTYICNVNHKPSNTKV
 DKRVESKYGPPCPAPCFEFLGGPSVFLFPPKPKDTLMISRTPEVTCWVDVSEQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCK
 VSNKGLPSSIEKTIKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSRLTVDKSRWQEGNVFSCSVMHEAL
 HNHYTKQKSLSLGK

H65 Human_IgG1 SEQ ID NO:153

EVQLVESGGGLVQPGGSLRLSCAASGFAFNSEFALNWVRQAPGKGLEWVGHIRSKTNNVATFYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDSW
FGYWGQGTLVTVSS/STKGPSVFPLAPSSKSTSGGTAAAGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTQTYICNVNHKPSNTKVDKK
 VEPKSCDKTHITCPPAPCFEFLGGPSVFLFPPKPKDTLMISRTPEVTCWVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKV
 SNKALPAPIEKTIKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSRLTVDKSRWQQQGNVFSCSVMHEALH
 NHYTKQKSLSLSPGK

H65 Human_IgG1_P01857_L234A_L235A SEQ ID NO:154

EVQLVESGGGLVQPGGSLRLSCAASGFAFNSEFALNWVRQAPGKGLEWVGHIRSKTNNVATFYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDSW
FGYWGQGTLVTVSS/ASTKGPSVFPLAPSSKSTSGGTAAAGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTQTYICNVNHKPSNTKVDK
 KVEPKSCDKTHITCPPAPCFEaaGGPSVFLFPPKPKDTLMISRTPEVTCWVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCK

FIG. 13D

VSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEAL
HNHYTQKSLSLSPGK

H65 Human_IgG1_L234A_L235A_D265S SEQ ID NO:155

EVQLVESGGGLVQPGGSLRLSCAASGFAFNSEFALNWVRQAPGKGLEWVVRQAPGKLEWVHIRSKTNINNYATEYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDSW
FGYWGQGTLLVTVSS/ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTV/PSSSLGTQTYICNVNHKPSNTKVKDK
KVEPKSCDKTHITCPCPAPEaaGGPSVFLFPPKPKDTLMISRTPEVTCVVVSVSHEDPEVKFNWVVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCK
VSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEAL
HNHYTQKSLSLSPGK

H65 Human_IgG1_YTE_(M252Y_S254T_T256E) SEQ ID NO:156

EVQLVESGGGLVQPGGSLRLSCAASGFAFNSEFALNWVRQAPGKGLEWVVRQAPGKLEWVHIRSKTNINNYATEYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDSW
FGYWGQGTLLVTVSS/ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTV/PSSSLGTQTYICNVNHKPSNTKVKDK
KVEPKSCDKTHITCPCPAPELLGGPSVFLFPPKPKDTLIRPEVTCVVVDVSHEDPEVKFNWVVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKV
SNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALH
NHYTQKSLSLSPGK

H65 human_IgG1_N297A SEQ ID NO:157

EVQLVESGGGLVQPGGSLRLSCAASGFAFNSEFALNWVRQAPGKGLEWVVRQAPGKLEWVHIRSKTNINNYATEYAASVKDRFTVSRDDSQNTAYLQMNSLKTEDTATYYCVRRGPRDSW
FGYWGQGTLLVTVSS/ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTV/PSSSLGTQTYICNVNHKPSNTKVKDK
KVEPKSCDKTHITCPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWVVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCK
VSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEAL
HNHYTQKSLSLSPGK

H65 Human_IgG1_N297Q_SEQ ID NO:158

FIG. 13E

EVQLVESGGGLVQPGGSLRLSCAASGFAFNSFALNWVRQAPGKGLEWVVRQAPGKGFYPSDIQVDSGFFLYSLKLTVDKSRWQQGNVFSCSVMEALH
 FGYWGQGTLLTVSS/ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHHKPSNTKVDK
 KVEPKSCDKTHTCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVQFNWVDGVEVHNAKTKPREEQFNSTYRVSVLTVHQQDWLNGKEYCKVS
 VSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIQVDSGFFLYSLKLTVDKSRWQQGNVFSCSVMEALH
 HNHYTQKSLSLSPGK

H65 Human_IgG2 SEQ ID NO:159

EVQLVESGGGLVQPGGSLRLSCAASGFAFNSFALNWVRQAPGKGLEWVVRQAPGKGFYPSDIQVDSGFFLYSLKLTVDKSRWQQGNVFSCSVMEALH
 FGYWGQGTLLTVSS/ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHHKPSNTKVDK
 TVERKCCVCPAPPVAGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVQFNWVDGVEVHNAKTKPREEQFNSTYRVSVLTVHQQDWLNGKEYCKVS
 KGLPAPIEKTISKAKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIQVDSGFFLYSLKLTVDKSRWQQGNVFSCSVMEALH
 HNTQKSLSLSPGK

H65_Human_IgG4 SEQ ID NO:160

EVQLVESGGGLVQPGGSLRLSCAASGFAFNSFALNWVRQAPGKGLEWVVRQAPGKGFYPSDIQVDSGFFLYSLKLTVDKSRWQQGNVFSCSVMEALH
 FGYWGQGTLLTVSS/ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHHKPSNTKVDK
 RVESKYGPPCPAPCEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVQFNWVDGVEVHNAKTKPREEQFNSTYRVSVLTVHQQDWLNGKEYCKVS
 NKGLPSSIEKTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIQVDSGFFLYSLKLTVDKSRWQQGNVFSCSVMEALH
 NHYTQKSLSLSPGK

H65 Human_IgG4_S228P_P01861 SEQ ID NO:161

EVQLVESGGGLVQPGGSLRLSCAASGFAFNSFALNWVRQAPGKGLEWVVRQAPGKGFYPSDIQVDSGFFLYSLKLTVDKSRWQQGNVFSCSVMEALH
 FGYWGQGTLLTVSS/ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHHKPSNTKVDK
 RVESKYGPPCPAPCEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVQFNWVDGVEVHNAKTKPREEQFNSTYRVSVLTVHQQDWLNGKEYCKVS
 NKGLPSSIEKTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIQVDSGFFLYSLKLTVDKSRWQQGNVFSCSVMEALH
 NHYTQKSLSLSPGK

FIG. 14A

VL46_kappa SEQ. ID NO:162

DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}SN^{GN}TYLEWY^{LQ}KPGQSPQLLYTVSNR^{FS}GV^{PD}RFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTIFGGG^{TK}VEIK
/RTVAAPSVFIFPPSDEQLKSGTASV^{VCL}LN^{FP}YFPAK^{VQ}WKVDNALQSGNSQESVTEQDSKDS^{TS}LSSTLTLSKADYEKHKVYACEVTHQGLSSP^{VT}KS^{FN}RGEK

VL46_lambda SEQ. ID NO:163

DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}SN^{GN}TYLEWY^{LQ}KPGQSPQLLYTVSNR^{FS}GV^{PD}RFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTIFGGG^{TK}VEIK
/GQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTPSKQSN^{NY}KYAASSYLSLTPEQWKSHRYS^{SC}QVTHEGSTVEK^{TV}APTECS

VL47_kappa SEQ. ID NO:164

DIVMTQSP^{LS}LPVTLGDPASISCRSSQSI^{VH}SN^{GN}TYLEWY^{QK}PGQSPQRLIYTVSNR^{FS}GV^{PD}RFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTIFGGG^{TK}VEIK
K/RTVAAPSVFIFPPSDEQLKSGTASV^{VCL}LN^{FP}YFPAK^{VQ}WKVDNALQSGNSQESVTEQDSKDS^{TS}LSSTLTLSKADYEKHKVYACEVTHQGLSSP^{VT}KS^{FN}RGEK

VL47_lambda SEQ. ID NO:165

DIVMTQSP^{LS}LPVTLGDPASISCRSSQSI^{VH}SN^{GN}TYLEWY^{QK}PGQSPQRLIYTVSNR^{FS}GV^{PD}RFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTIFGGG^{TK}VEIK
K/ GQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTPSKQSN^{NY}KYAASSYLSLTPEQWKSHRYS^{SC}QVTHEGSTVEK^{TV}APTECS

VL46_G34A_kappa SEQ. ID NO:166

DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}SN^{AN}TYLEWY^{LQ}KPGQSPQLLYTVSNR^{FS}GV^{PD}RFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTIFGGG^{TK}VEIK/
RTVAAPSVFIFPPSDEQLKSGTASV^{VCL}LN^{FP}YFPAK^{VQ}WKVDNALQSGNSQESVTEQDSKDS^{TS}LSSTLTLSKADYEKHKVYACEVTHQGLSSP^{VT}KS^{FN}RGEK

VL46_G34A_lambda SEQ. ID NO:167

DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}SN^{AN}TYLEWY^{LQ}KPGQSPQLLYTVSNR^{FS}GV^{PD}RFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTIFGGG^{TK}VEIK/
GQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTPSKQSN^{NY}KYAASSYLSLTPEQWKSHRYS^{SC}QVTHEGSTVEK^{TV}APTECS

VL46_G34S_kappa SEQ. ID NO:168

DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}SN^{NT}YLEWY^{LQ}KPGQSPQLLYTVSNR^{FS}GV^{PD}RFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTIFGGG^{TK}VEIK/
RTVAAPSVFIFPPSDEQLKSGTASV^{VCL}LN^{FP}YFPAK^{VQ}WKVDNALQSGNSQESVTEQDSKDS^{TS}LSSTLTLSKADYEKHKVYACEVTHQGLSSP^{VT}KS^{FN}RGEK

FIG. 14B

VL46_G34S lambda SEQ ID NO:169
 DIVMTQSP^{LS}LPVTLGEPASISCRSSQ^{SI}VS^{HS}QANTYLEWYLQKPGQSPQLLIYTVSNRFS^GVPDRFSGSGGTDFTLKISRVEAEDLG^VVYCFQ^{GS}HLPLTFGGG^TKVEIK/
 GQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTTPSKQSN^NKYAASSVLSLTPEQWKS^HRSYSCQVTHEGSTVEKTVAPTECS

VL46_G34T kappa SEQ ID NO:170
 DIVMTQSP^{LS}LPVTLGEPASISCRSSQ^{SI}VS^{HS}QANTYLEWYLQKPGQSPQLLIYTVSNRFS^GVPDRFSGSGGTDFTLKISRVEAEDLG^VVYCFQ^{GS}HLPLTFGGG^TKVEIK/
 RTVAAPSVFIFPPSDEQLKSGTASV^VCLLN^NFYPREAKVQWKVDNALQSGNSQESVTEQDSK^DSTYSLS^TLTLSKADY^EKHKVYACEVTHQGLSSPVTKSFNRGEC

VL46_G34T lambda SEQ ID NO:171
 DIVMTQSP^{LS}LPVTLGEPASISCRSSQ^{SI}VS^{HS}QANTYLEWYLQKPGQSPQLLIYTVSNRFS^GVPDRFSGSGGTDFTLKISRVEAEDLG^VVYCFQ^{GS}HLPLTFGGG^TKVEIK/
 GQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTTPSKQSN^NKYAASSVLSLTPEQWKS^HRSYSCQVTHEGSTVEKTVAPTECS

VL46_N33Q kappa SEQ ID NO:172
 DIVMTQSP^{LS}LPVTLGEPASISCRSSQ^{SI}VS^{HS}QANTYLEWYLQKPGQSPQLLIYTVSNRFS^GVPDRFSGSGGTDFTLKISRVEAEDLG^VVYCFQ^{GS}HLPLTFGGG^TKVEIK/
 /RTVAAPSVFIFPPSDEQLKSGTASV^VCLLN^NFYPREAKVQWKVDNALQSGNSQESVTEQDSK^DSTYSLS^TLTLSKADY^EKHKVYACEVTHQGLSSPVTKSFNRGEC

VL46_N33Q lambda SEQ ID NO:173
 DIVMTQSP^{LS}LPVTLGEPASISCRSSQ^{SI}VS^{HS}QANTYLEWYLQKPGQSPQLLIYTVSNRFS^GVPDRFSGSGGTDFTLKISRVEAEDLG^VVYCFQ^{GS}HLPLTFGGG^TKVEIK/
 /GQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTTPSKQSN^NKYAASSVLSLTPEQWKS^HRSYSCQVTHEGSTVEKTVAPTECS

VL46_N33Q_G34A kappa SEQ ID NO:174
 DIVMTQSP^{LS}LPVTLGEPASISCRSSQ^{SI}VS^{HS}QANTYLEWYLQKPGQSPQLLIYTVSNRFS^GVPDRFSGSGGTDFTLKISRVEAEDLG^VVYCFQ^{GS}HLPLTFGGG^TKVEIK/
 /RTVAAPSVFIFPPSDEQLKSGTASV^VCLLN^NFYPREAKVQWKVDNALQSGNSQESVTEQDSK^DSTYSLS^TLTLSKADY^EKHKVYACEVTHQGLSSPVTKSFNRGEC

VL46_N33Q_G34A lambda SEQ ID NO:175
 DIVMTQSP^{LS}LPVTLGEPASISCRSSQ^{SI}VS^{HS}QANTYLEWYLQKPGQSPQLLIYTVSNRFS^GVPDRFSGSGGTDFTLKISRVEAEDLG^VVYCFQ^{GS}HLPLTFGGG^TKVEIK/
 /GQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTTPSKQSN^NKYAASSVLSLTPEQWKS^HRSYSCQVTHEGSTVEKTVAPTECS

FIG. 14C

VL46_N33D kappa SEQ ID NO:176

DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}SDGNTYLEWYLQKPGQSPQ^{LI}YTVSNRFS^{GP}DRFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTFFGGG^{TK}VEIK
/RTVAAPSVFIFPPSDEQLKSGTASV^VCLLNINFPYREAKVQWKVDNALQSGNSQESVTEQDSKDS^{TS}LSSTLTLSKADYEKHKVYACEVTHQGLSSP^{VT}TKSFNRGEC

VL46_N33D lambda SEQ ID NO:177

DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}SDGNTYLEWYLQKPGQSPQ^{LI}YTVSNRFS^{GP}DRFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTFFGGG^{TK}VEIK
/GQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTPSKQSN^{NY}AAASSYLSLTPEQWKS^{HR}SYSCQVTHEGSTVEK^{TV}APTECS

VL46_N33S kappa SEQ ID NO:178

DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}SSGNTYLEWYLQKPGQSPQ^{LI}YTVSNRFS^{GP}DRFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTFFGGG^{TK}VEIK/
RTVAAPSVFIFPPSDEQLKSGTASV^VCLLNINFPYREAKVQWKVDNALQSGNSQESVTEQDSKDS^{TS}LSSTLTLSKADYEKHKVYACEVTHQGLSSP^{VT}TKSFNRGEC

VL46_N33S lambda SEQ ID NO:179

DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}SSGNTYLEWYLQKPGQSPQ^{LI}YTVSNRFS^{GP}DRFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTFFGGG^{TK}VEIK/
GQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTPSKQSN^{NY}AAASSYLSLTPEQWKS^{HR}SYSCQVTHEGSTVEK^{TV}APTECS

VL46_N33T kappa SEQ ID NO:180

DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}STGNTYLEWYLQKPGQSPQ^{LI}YTVSNRFS^{GP}DRFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTFFGGG^{TK}VEIK/
RTVAAPSVFIFPPSDEQLKSGTASV^VCLLNINFPYREAKVQWKVDNALQSGNSQESVTEQDSKDS^{TS}LSSTLTLSKADYEKHKVYACEVTHQGLSSP^{VT}TKSFNRGEC

VL46_N33T lambda SEQ ID NO:181

DIVMTQSP^{LS}LPVTLGEPASISCRSSQSI^{VH}STGNTYLEWYLQKPGQSPQ^{LI}YTVSNRFS^{GP}DRFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTFFGGG^{TK}VEIK/
GOPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTPSKQSN^{NY}AAASSYLSLTPEQWKS^{HR}SYSCQVTHEGSTVEK^{TV}APTECS

VL46_S28N kappa SEQ ID NO:182

DIVMTQSP^{LS}LPVTLGEPASISCRSSQNI^{VH}SN^{GN}TYLEWYLQKPGQSPQ^{LI}YTVSNRFS^{GP}DRFSGSGSGTDFTLKISRVEAEDLGVVYCFQGS^{HL}PLTFFGGG^{TK}VEIK
/RTVAAPSVFIFPPSDEQLKSGTASV^VCLLNINFPYREAKVQWKVDNALQSGNSQESVTEQDSKDS^{TS}LSSTLTLSKADYEKHKVYACEVTHQGLSSP^{VT}TKSFNRGEC

FIG. 14D

VL46_S28N lambda SEQ ID NO:183

DIVMTQSPILSLPVTILGEPASISCRSSQNIVHSNANTYLEWYLQKPGQSPQLLINTVSNRFGVDPDRFSGSGGTDFTLKISRVEAEDLGVVYCFQGSHPILPTFGGGTKVEIK
/GQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTTTPSKQSNINNYAASSYLSLTPEQWKSRSYSCQVTHEGSTVEKTVAPTECS

*VL46_G34A_S28N kappa SEQ ID NO:184

DIVMTQSPILSLPVTILGEPASISCRSSQNIVHSNANTYLEWYLQKPGQSPQLLINTVSNRFGVDPDRFSGSGGTDFTLKISRVEAEDLGVVYCFQGSHPILPTFGGGTKVEIK
/RTVAAPSVFIFPPSDEQLKSGTASVCLINNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSTLSSTLTLSKADYKHKVYACEVTHQGLSSPVTKSFNRGEC

VL46_G34A_S28N lambda SEQ ID NO:185

DIVMTQSPILSLPVTILGEPASISCRSSQNIVHSNANTYLEWYLQKPGQSPQLLINTVSNRFGVDPDRFSGSGGTDFTLKISRVEAEDLGVVYCFQGSHPILPTFGGGTKVEIK
/GQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTTTPSKQSNINNYAASSYLSLTPEQWKSRSYSCQVTHEGSTVEKTVAPTECS

FIG. 15

Variable light domain/variable heavy domain	VH11	VH65
VL46-kappa	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46-lambda	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL47-kappa	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL47-lambda	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_G34A-kappa	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46-G34A-lambda	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_G34S-kappa	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_G34S-lambda	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_G34T-kappa	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46-G34T-lambda	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_N33Q-kappa	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46-N33Q-lambda	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_N33Q_G34A-kappa	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46-N33Q-lambda	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_N33D-kappa	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_N33D-lambda	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_N33S-kappa	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_N33S-lambda	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_N33T-kappa	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_N33T-lambda	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_S28N-kappa	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46-S28N-lambda	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_G34A_S28N-kappa	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J
VL46_G34A_S28N-lambda	A, B, C, D, E, F, G, H, I, J	A, B, C, D, E, F, G, H, I, J