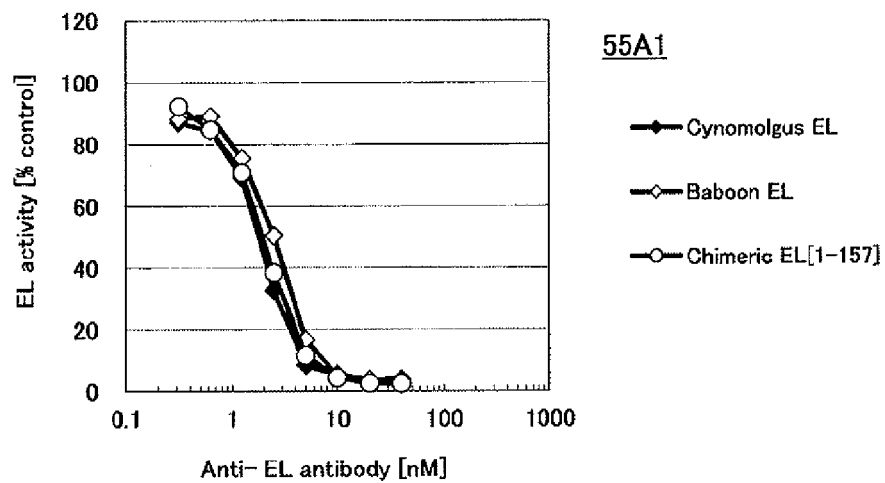
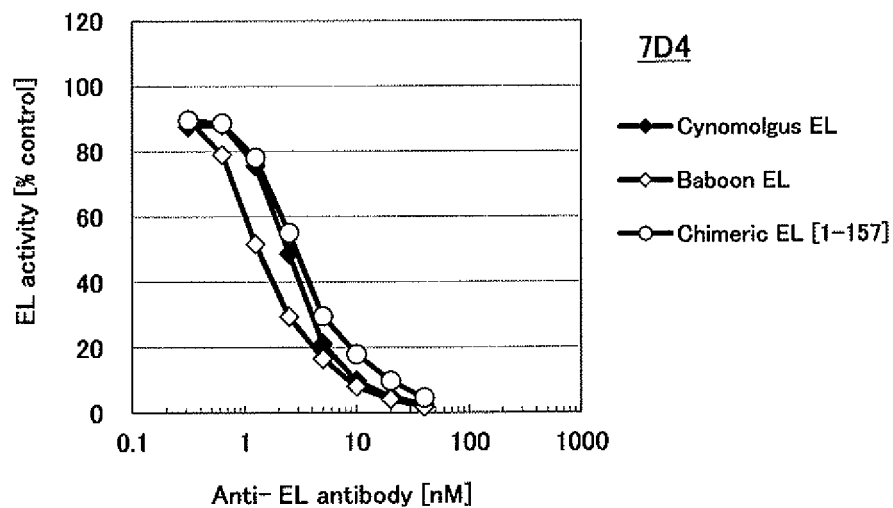


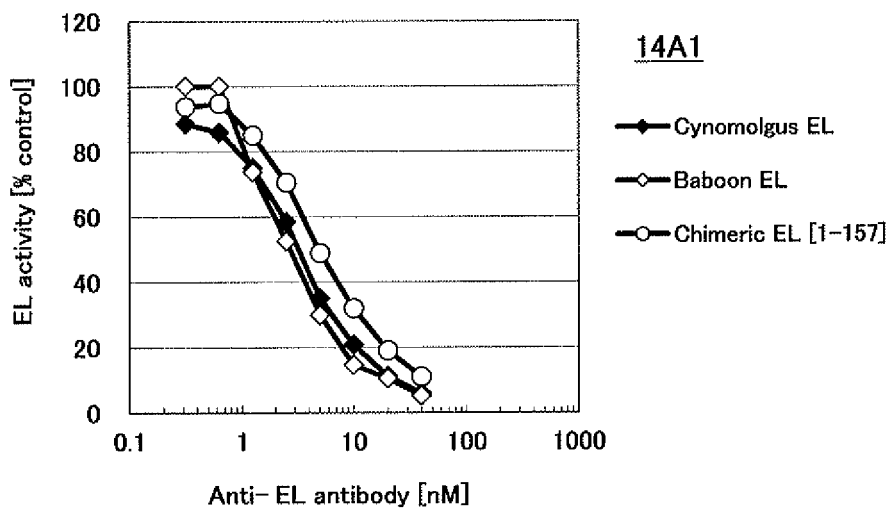
[1A]

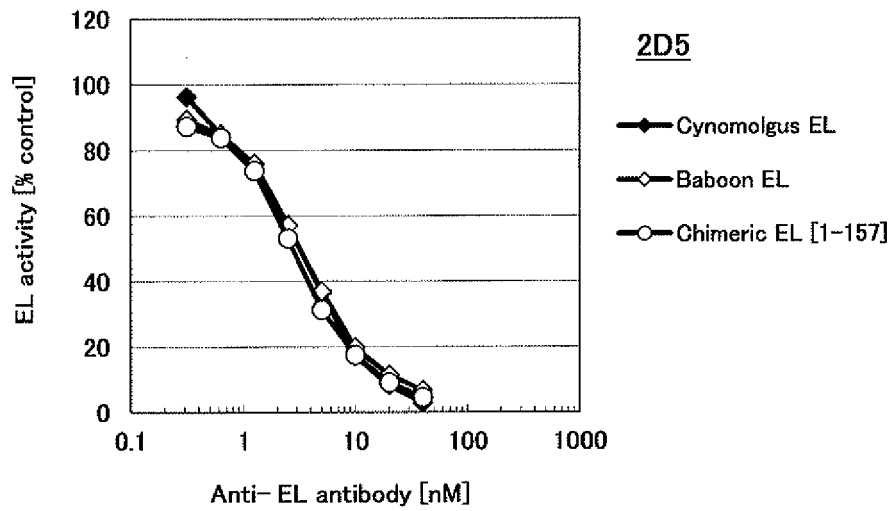
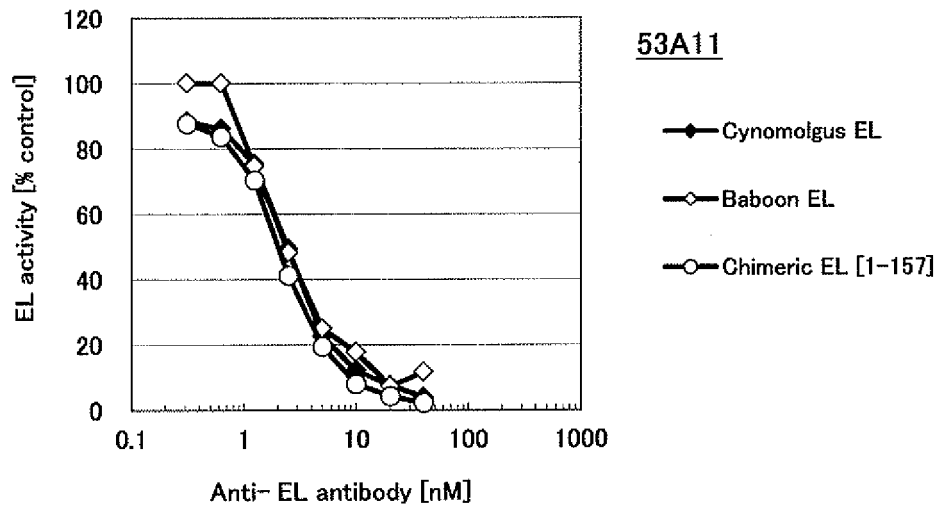
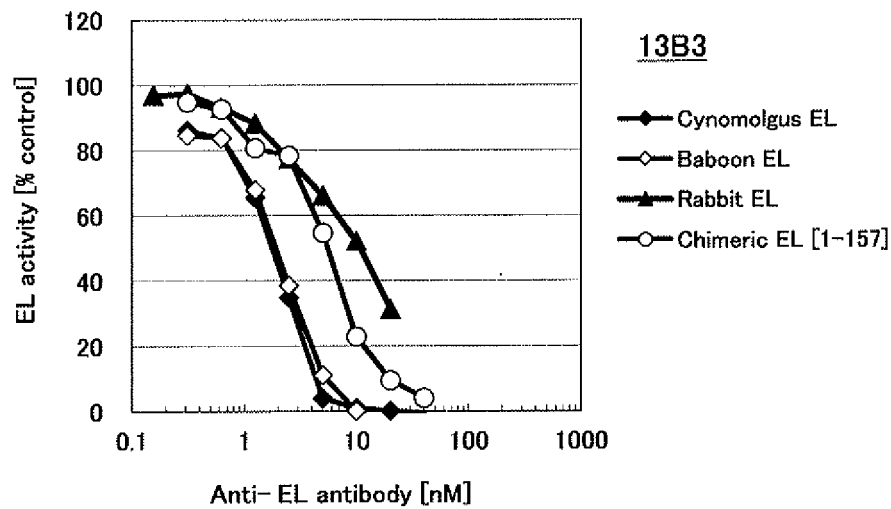


[1B]

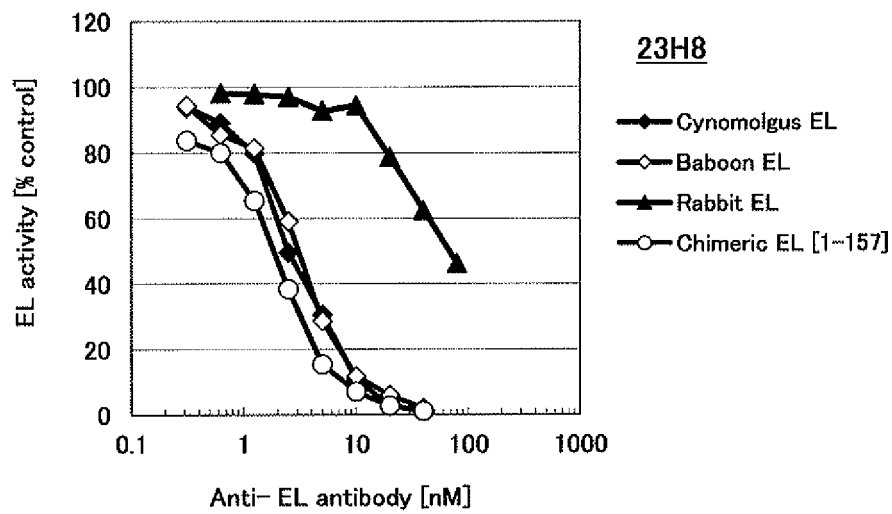


[1C]

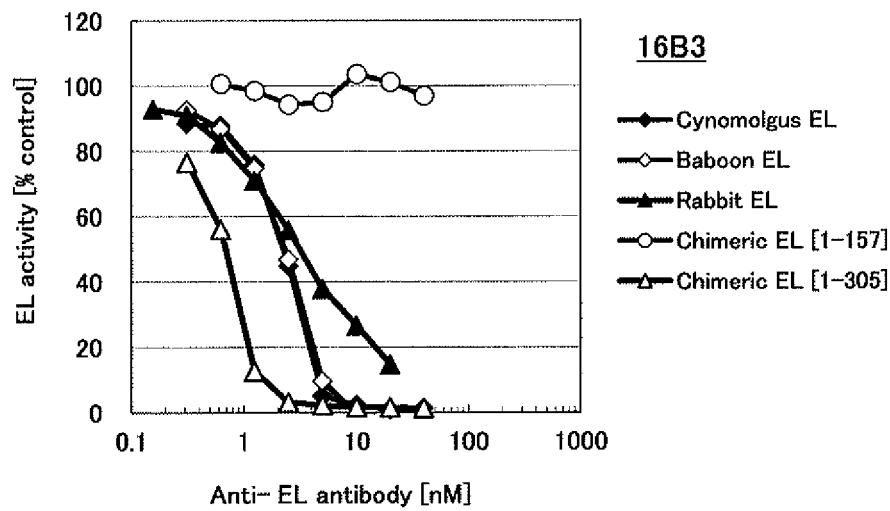


[ 1D][ 1E][ 1F]

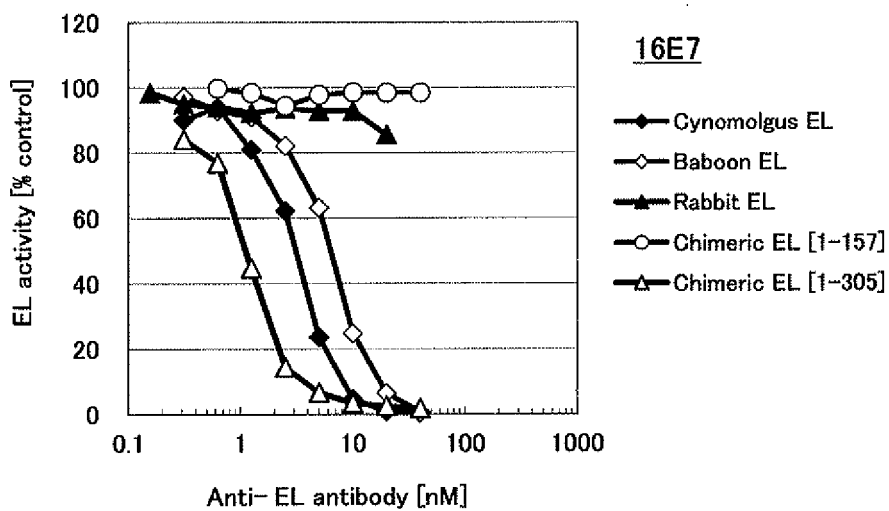
[1G]



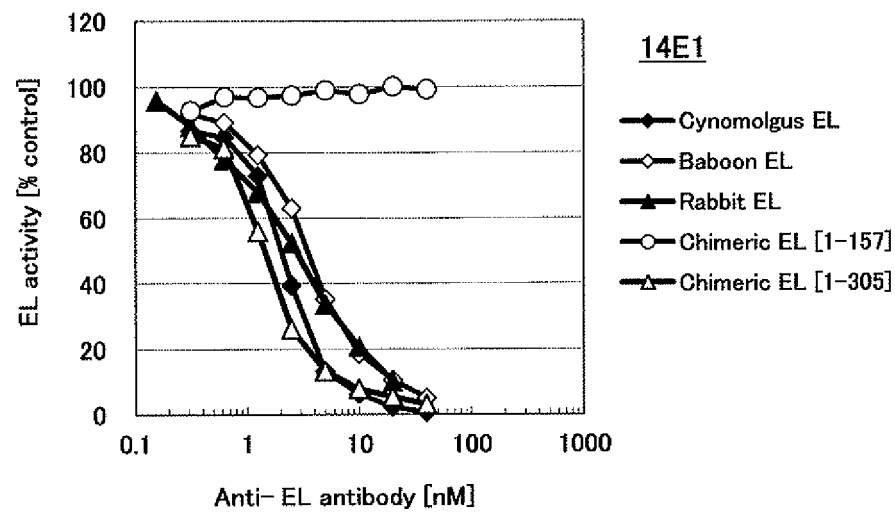
[1H]



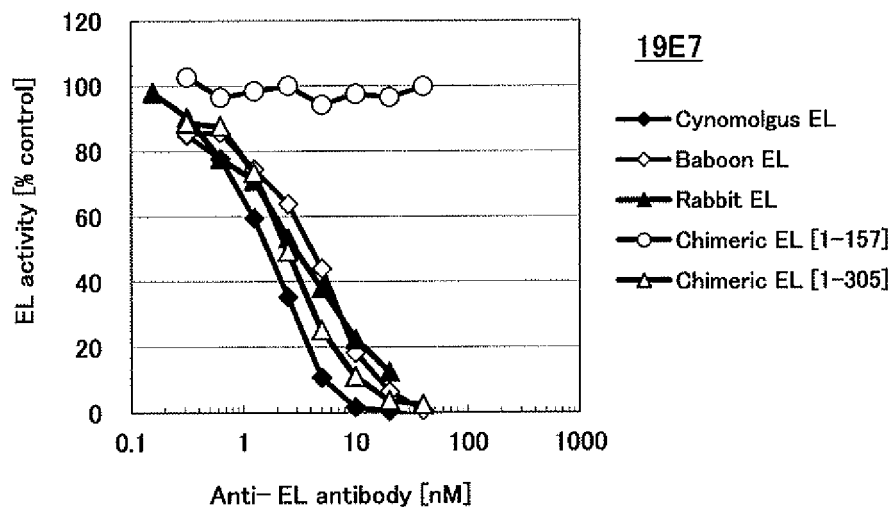
[1I]



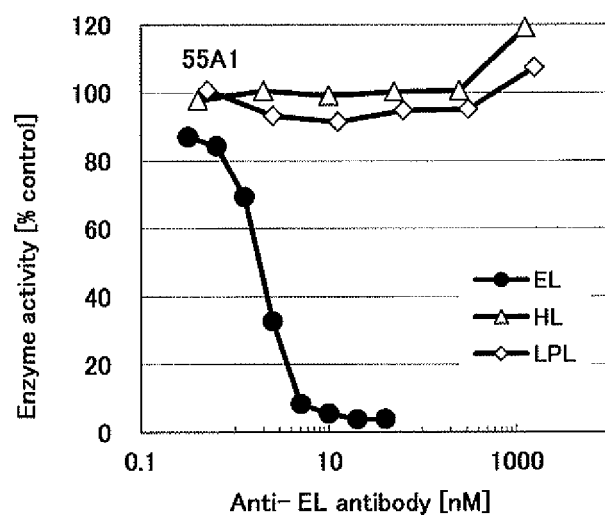
[図1J]



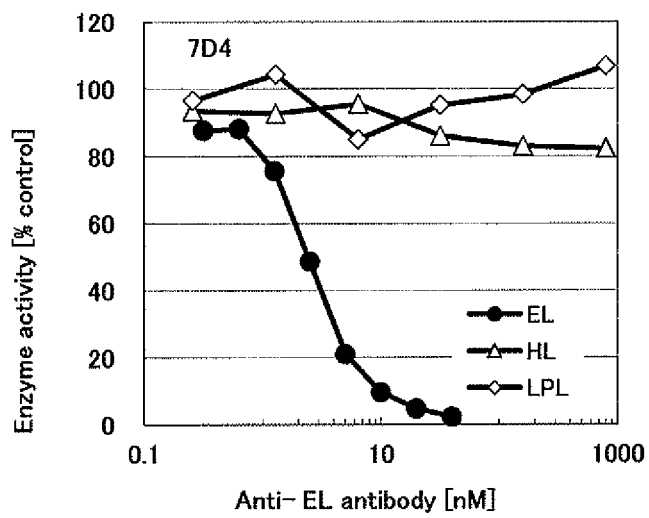
[図1K]



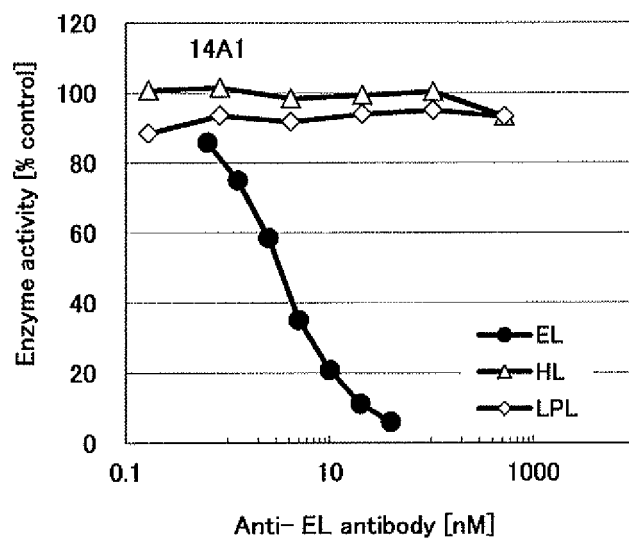
[図2A]



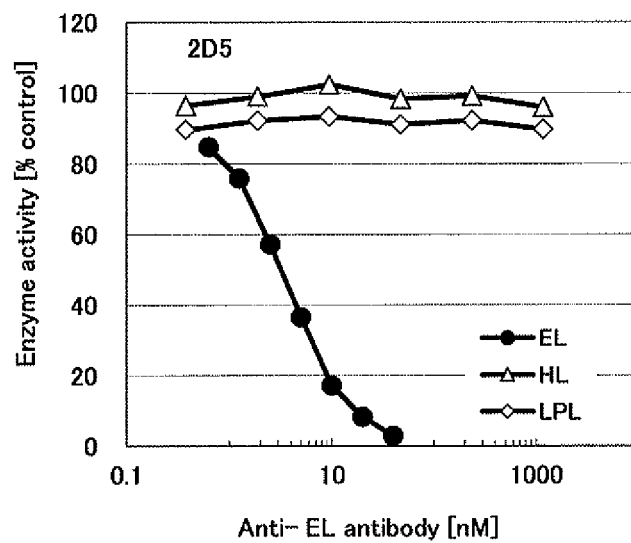
[図2B]



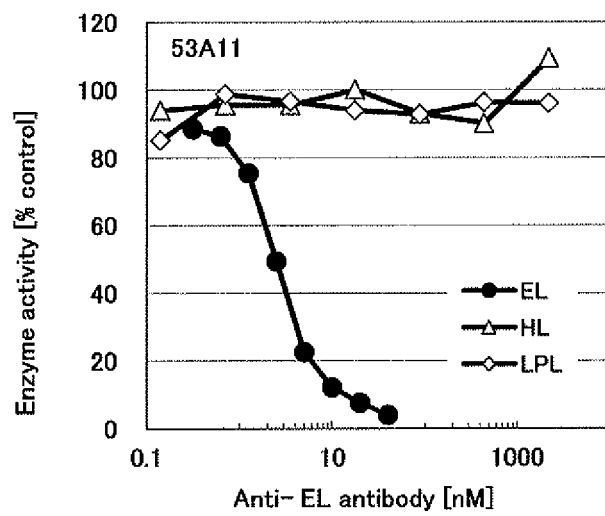
[図2C]



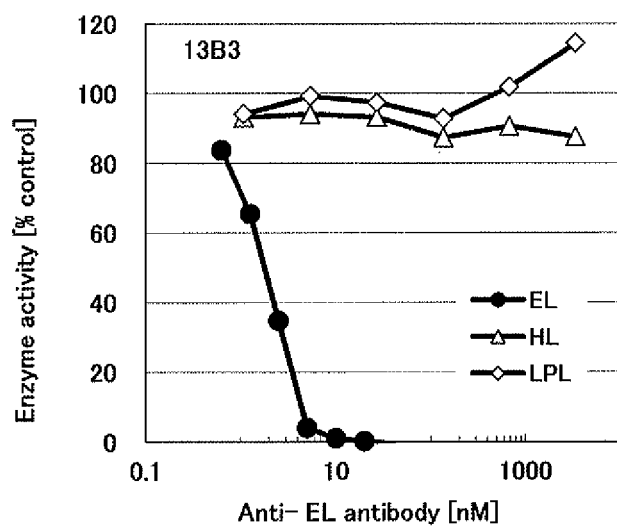
[図2D]



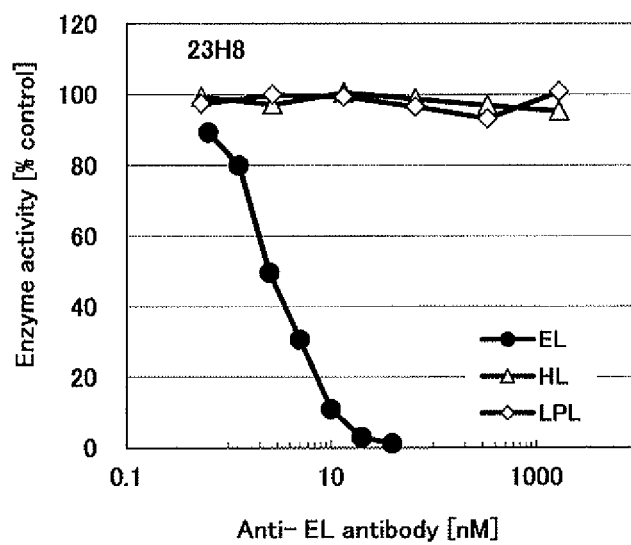
[図2E]



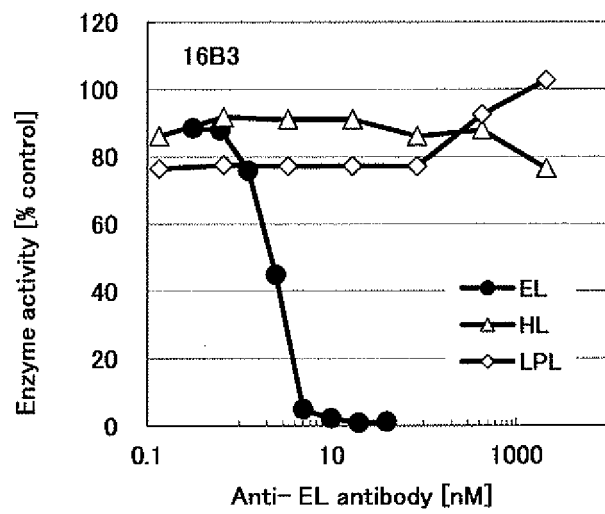
[図2F]



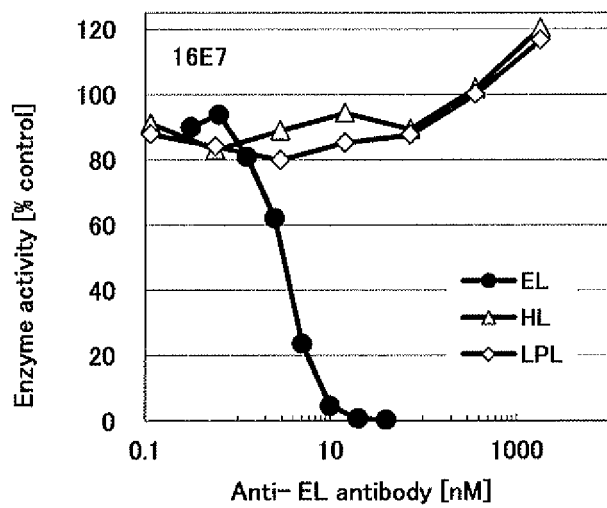
[図2G]



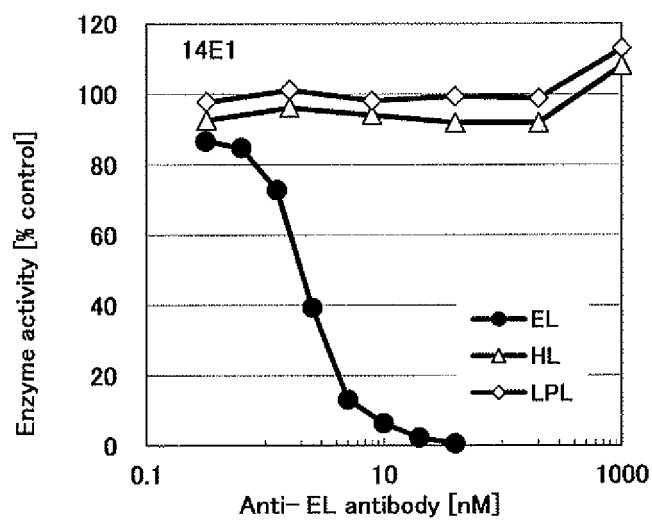
[図2H]



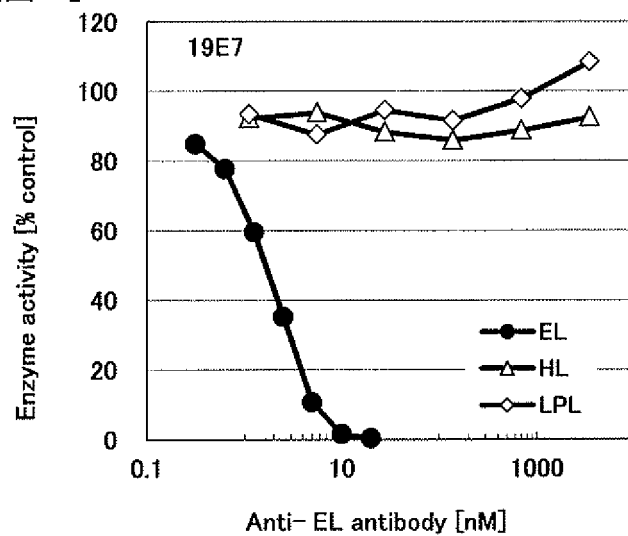
[図2I]



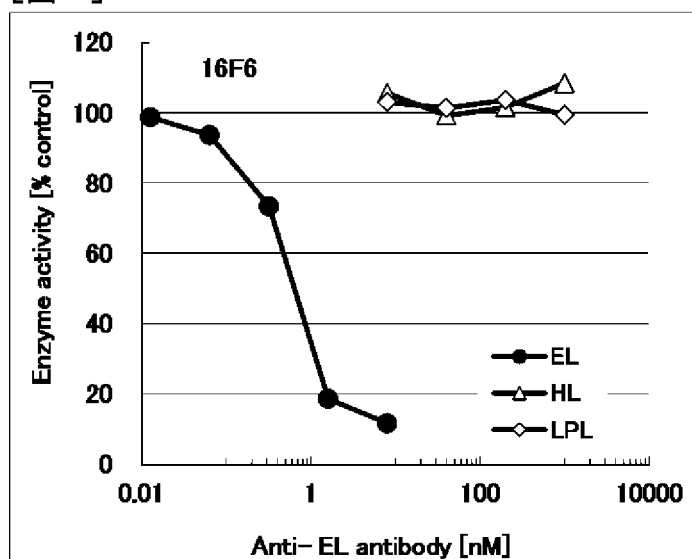
[図2J]



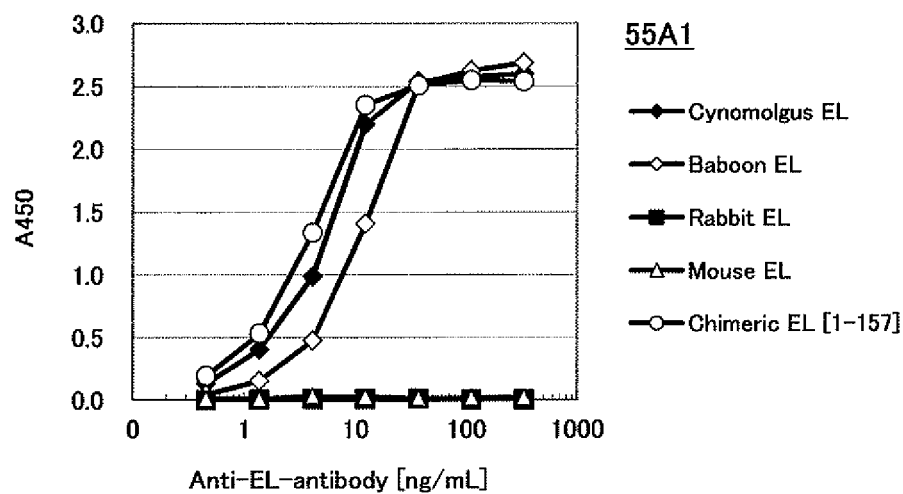
[2K]



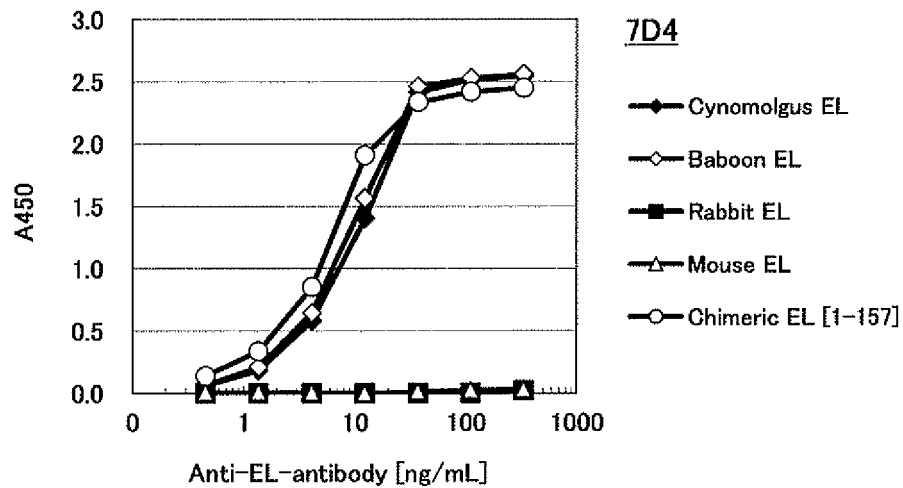
[2L]



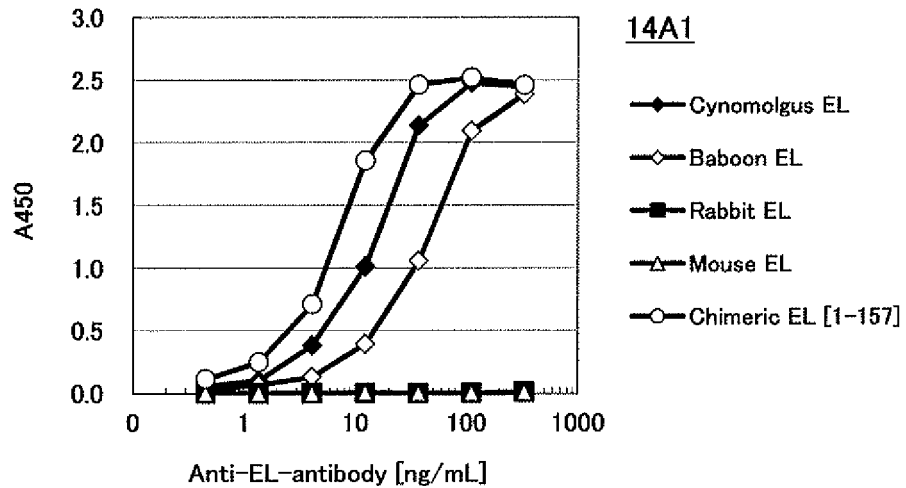
[3A]



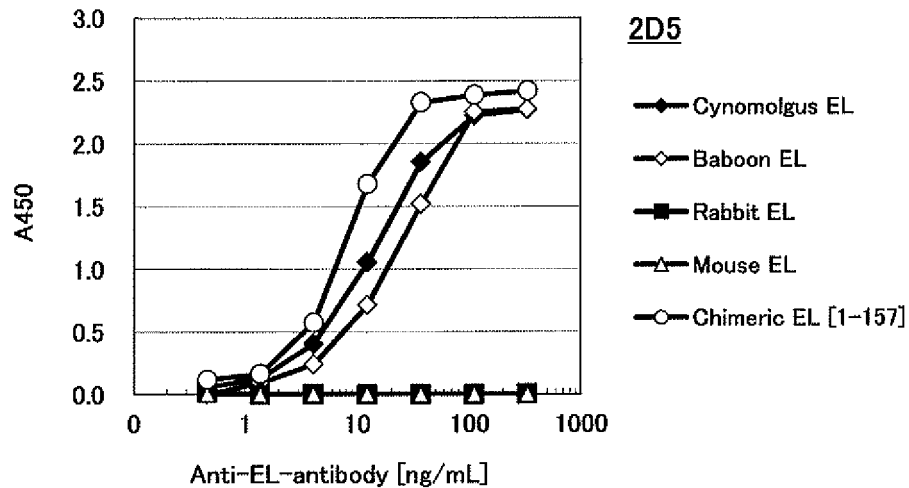
[図3B]

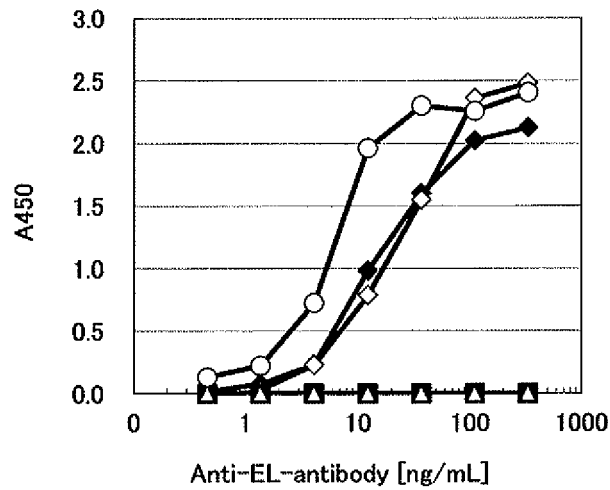


[図3C]



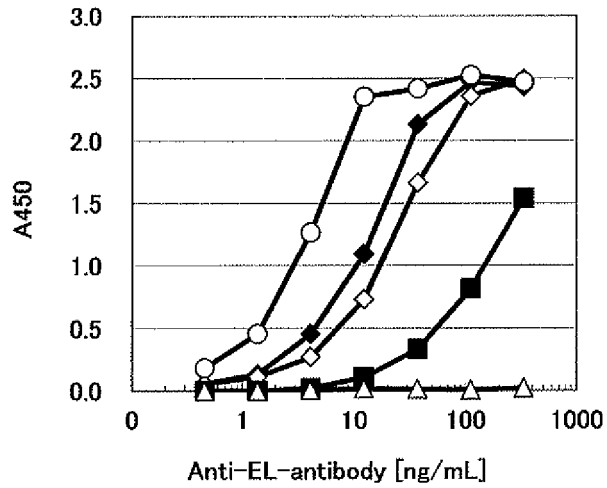
[図3D]



[3E]

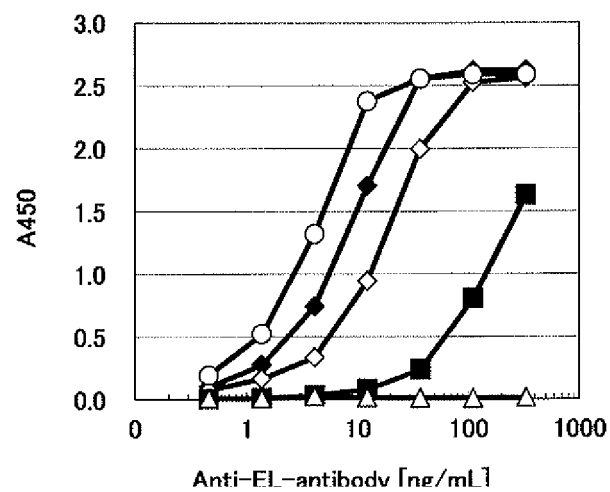
53A11

- ◆ Cynomolgus EL
- ◇ Baboon EL
- Rabbit EL
- △ Mouse EL
- Chimeric EL [1-157]

[3F]

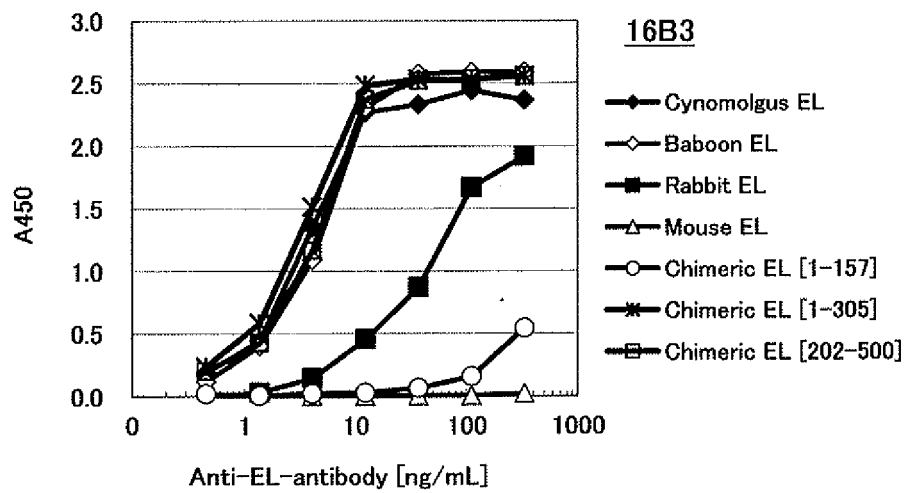
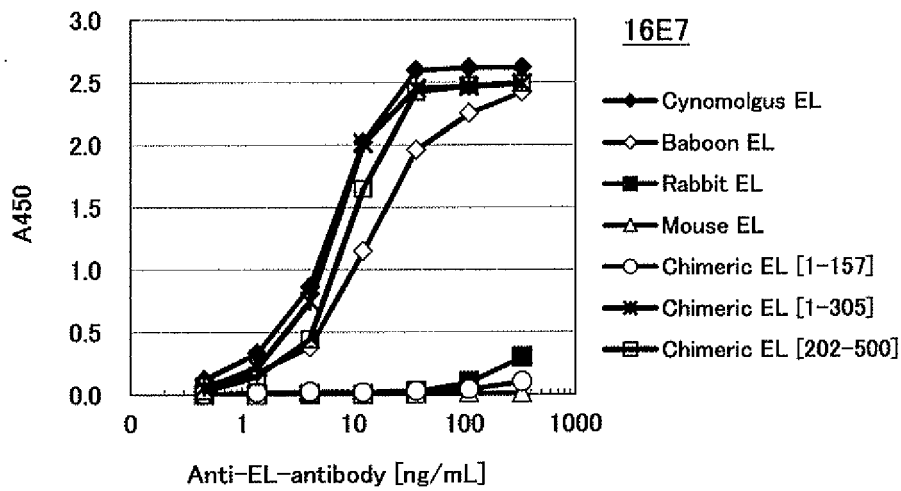
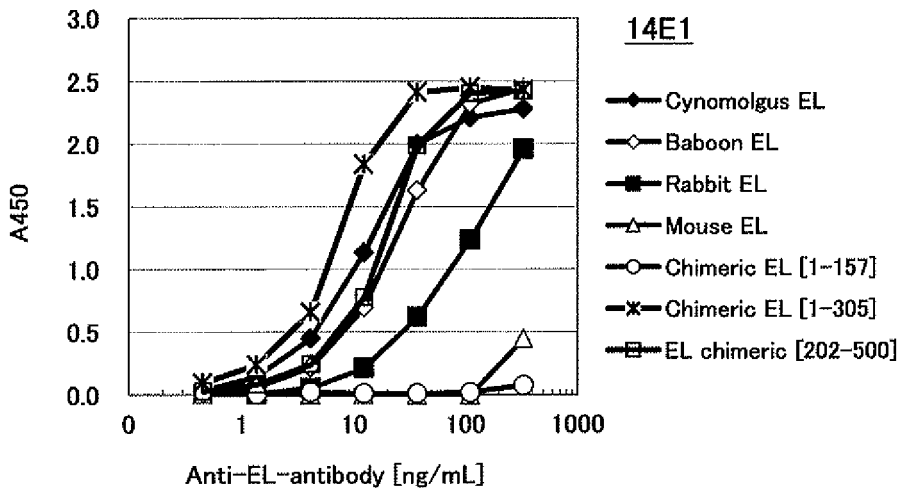
13B3

- ◆ Cynomolgus EL
- ◇ Baboon EL
- Rabbit EL
- △ Mouse EL
- Chimeric EL [1-157]

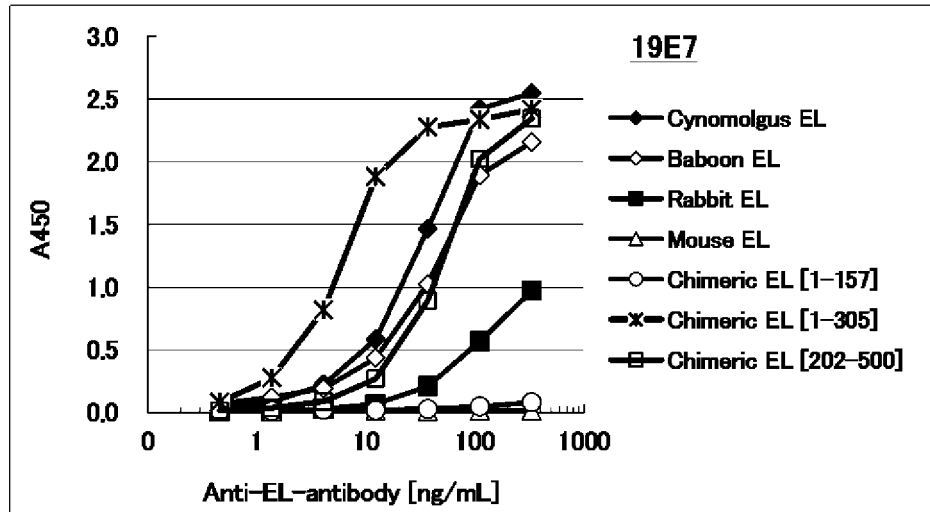
[3G]

23H8

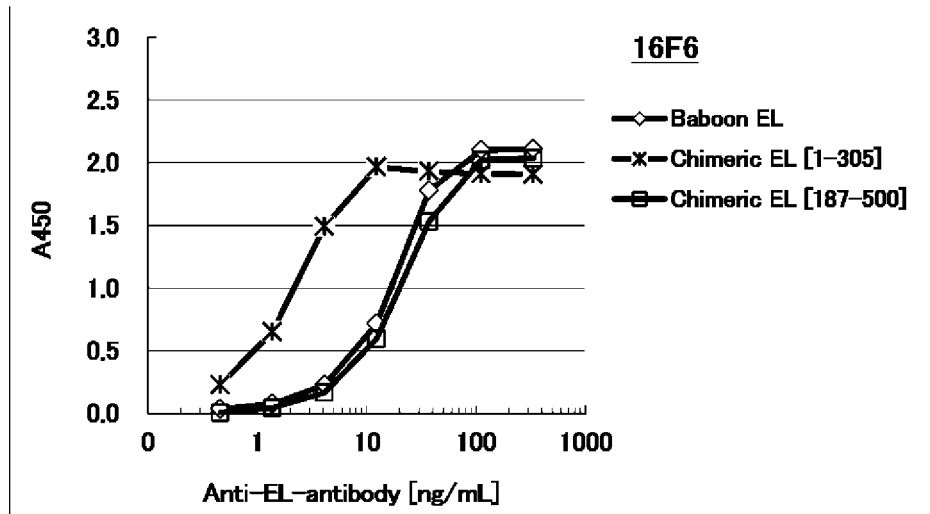
- ◆ Cynomolgus EL
- ◇ Baboon EL
- Rabbit EL
- △ Mouse EL
- Chimeric EL [1-157]

[3H][3I][3J]

[図3K]



[図3L]



[図4A]

Heavy chain of 55A1

CDR1

CDR2

QIHLVQSGPELKKPGETVKISCKASGYTFTNYGMNWKQAPGKGLKWMGWINTYSGVPTYAGDF

KGRFAFSLETSASTAYLQINNLLKNEDTATYFCARRGYYGRRYFDVWGTGTTVTVSS

CDR3

Light chain of 55A1

CDR1

CDR2

DIVLTQSPASLAVSLGQRATISCKASQSVDDYDVDSYMHWYQQKPGQPPKLLIYAASNLASGI

PARFSGGGSGTDFTLNIHPVEEEDVATYYCQQTIEDPPTFGGGTKLEIK

CDR3

WO 2016/039402

PCT/JP2015/075668

[4B]

Heavy chain of 7D4

CDR1

CDR2

QIQLVQSGPELKKPGETVKISCKASGYTFTNYGMNWVKQAPGKDLKWMGWINTYSGVPTYADDF
KGRFAFSLETSASTAYLQINNLKNEDTATYFCARFSYYGRHYFDYWGQGTTLTVSS

CDR3

Light chain of 7D4

CDR1

CDR2

DIVLTQSPASLAVSLGQRATISCKASQSVDDYDGDSYMNWYQQKPGQPPQLLIYAASNLGSGI
 PARFSGSGSGTDFTLNHPVEEEDAATYYCHQSTDDPPWTFGGGTKLEIK

CDR3

[4C]

Heavy chain of 14A1

CDR1

CDR2

QIQLVQSGPELKKPGETVKISCKASGYTFTNYGMNWVKQAPGKGLKWMGWINTYSGVPTYADDF
KGRFAFSLETSASTAYLQINNFKNEDTATYFCARFSYYGRHYFDYWGQGTALTASS

CDR3

Light chain of 14A1

CDR1

CDR2

DIVLTQSPASLAVSLGQRATISCKASQSVDDYDGDSYMNWYQQKPGQPPKLLIYAASNLSGI
 PARFSGSGSGTDFTLNHPVEEEDAATYYCQQTDDPPWTFGGGTKLEIK

CDR3

[4D]

Heavy chain of 2D5

CDR1

CDR2

QIQLVQSGPELKKPGETVKISCKASGYTFTNYGMNWVKQAPGKGLKWMGWINTYSGVPTYTDDF
KGRFAFSLETSASTAFLQINNLKNEDTATYFCARFSYYGRHYFDYWGQGTTLTVSS

CDR3

Light chain of 2D5

CDR1

CDR2

DIVLTQSPASLAVSLGQRATISCKASQSVDDYDGDSYMHWYQQKPGQPPKLLIYAASNLESIGI
 PARFSGSGSGTDFTLNHPVEEEDAATYYCQQTNDPPWTFGGGTKLEIK

CDR3

[4E]

Heavy chain of 53A11

	CDR1	CDR2
EVQLQQSGPELLKPGASVKISCKASGYTFTD	<u>YTMHWVKQSHGKSLEWIGGINPYYGGTTYNEKF</u>	
<u>KDKATLTVDKSSSTAYMELRSLTSEDS</u>	<u>AVYYCAKGDYYGGSYNYWGQGTTLTVSS</u>	
	CDR3	

Light chain of 53A11

	CDR1	CDR2
DIVLTQSLATLSVTPGDSVSLSCRASQDISNSLHWYQQKSHESPRLLIKYASQ	<u>SISGIPSRF</u>	
<u>SGSGSGTDFTLSINSVETEDFGMYFCQQS</u>	<u>NSWPYTFGGG</u>	<u>TKLEIK</u>
	CDR3	

[4F]

Heavy chain of 13B3

	CDR1	CDR2
EVQLQQSGPELLKPGASVKISCKASGYTFTE	<u>YTMHWVKQSHGKSLEWIGSINPYYGGTSYNEKF</u>	
<u>KDKATLTVDKSSNTAYMEFRSLTSEDC</u>	<u>AVYYCARYGNYVGYFDYWGQGTTLTVSS</u>	
	CDR3	

Light chain of 13B3

	CDR1	CDR2
ENVLTQSPAIMASALGEKVTMSCRASSSVHYMYWYQQKSDASPKLWIYYT	<u>SNLAPGVPDRFS</u>	
<u>GS</u>	<u>SGNSYSLTISSMEGEDAATYYCQQFTSSPYTFGGG</u>	<u>TKLEIK</u>
	CDR3	

[4G]

Heavy chain of 23H8

	CDR1	CDR2
EVQLQQSGPELLKPGASVKISCKASGYTFTD	<u>NTIHWVKQSHGKSLEWIGHINPYYGGTNNNEKF</u>	
<u>KDKATLTVDKSSSTAYMELRSLTSEDS</u>	<u>AIYYCARKGIYYSSPFDYWGQGTTLTVSS</u>	
	CDR3	

Light chain of 23H8

	CDR1	CDR2
DIQMTQTSSLSASLGDRVTISCRASQDINNYLNWYQQKPDGTVKLLISY	<u>TSKLHSGVPS</u>	
<u>RFSGSGSGTDYSLTISNLEREDFATYFCQQGNTLPFTF</u>	<u>SGSGTNLEIK</u>	
	CDR3	

[4H]

Heavy chain of 16B3

	CDR1	CDR2
DVKLVESGGGLVQPGGSLKLSCTASGFTFS	<u>GYTMSWVRQTPEKRLELVAEISFARDRAFY</u>	<u>PDTV</u>
<u>KGRFTISRDN</u> AKNTLYLQMSSLKSEDTAMYYCTRL	<u>GGRNHDYWYFDVWGTGTTVT</u>	<u>VSS</u>
	CDR3	

Light chain of 16B3

	CDR1	CDR2
DIVLTQSPTSLAVSPGQRATISCRASESVEYYGTSLM	<u>QWYQQKPGQRPQLLIYAASN</u>	<u>VESGV</u>
<u>PARFSGSGSGTDFSLNIHPVEEDDIAVYFCQQ</u>	<u>SWKVPFTFGSGTKLEIK</u>	
	CDR3	

[4I]

Heavy chain of 16E7

	CDR1	CDR2
EVKLVESGGGLVQPGGSLKLSAASGFTFSSYTMSWVRQTPEKRLELVAEISF	<u>TRSRAFY</u>	<u>PDTV</u>
<u>KGRFTISRDN</u> AKNTLYLQMSSLKSEDTAMYYCARL	<u>GNNYDYWYFDVWGTGTTVT</u>	<u>VSS</u>
	CDR3	

Light chain of 16E7

	CDR1	CDR2
DIVLTQSPTSLAVSLGQRATISCRASESVEYYGTSLM	<u>QWYQQKPGQRPKLLIYAASN</u>	<u>VESGV</u>
<u>PARFSGSGSGTDFSLNIHPVEEDDIAMVFCQQ</u>	<u>SWKVPFTFGSGTKLEIK</u>	
	CDR3	

[4J]

Heavy chain of 14E1

	CDR1	CDR2
QVQLQQSGAELVKPGASVRLSCKASGYTFT	<u>KYTIHWVKQ</u>	<u>RSQGLEWIGW</u>
<u>FPGSDSIKYNEKF</u>		
<u>KDKATLTADKSSRTVYMEL</u>	<u>SRLTSEDSAVYFCARHEEY</u>	<u>TNSLAYWGQGLTV</u>
	CDR3	

Light chain of 14E1

	CDR1	CDR2
DIQMTQTSSLSASLGDRVTISCRASQDISNYLN	<u>WYQQPDGTVKLLIYY</u>	<u>TSRLHSGVPSRF</u>
<u>SGSGSGTDYSLTISNLEQEDIATYFCQQGY</u>	<u>TLPWTFGGGTNLEIK</u>	
	CDR3	

WO 2016/039402

PCT/JP2015/075668

[4K]

Heavy chain of 19E7

CDR1CDR2

QVQLQQPGSVLVRPGASVKLSCKASGYTFTTYWMHWVKQRPQGLEWIGEIEHPYSGNNNNNEKF

KGKATLTVDTSSSTAYVDLSRLTSEDSAVYYCARYDSNYVFAYWGQGTLVTVSA

CDR3

Light chain of 19E7

CDR1CDR2

QIVLTQSPAIMSASPGEGVTITCSASSSVSYMHWFQQKPGTSPKLWIYSTSNLASGVPARFS

GSSGTSYSLTISRMEAEDAATYYCQQRDSYLTFGSGTKLEVK

CDR3

[4L]

Heavy chain of 16F6

CDR1CDR2

QVQLQQSGAELMKPGASVKISCKATGYTFSTYWIAWVKQRPHGLEWIGEILPGSAKTKYNKKE

KGKATFTADTSSNTAYMQLSSLTSEDSAVYYCAVDYGADYWGQGTSVTVSS

CDR3

Light chain of 16F6

CDR1CDR2

DIVMTQSHKFMSTSVGDRVSITCKASQDVYTAVAWYQQKPGQSPKLLIYSASYRFTGVPDRF

TGSGAGTEFTFTINSVQAEDLAVYYCQOHYSIPRTFGGGTKLEIK

CDR3

[5A]

55A1	1:	<u>QIHLVQSGPELKKPGETVKISCKASGYTFTNYGMN</u> <u>WVKQAPGKGLKWMG</u> <u>WINTYSGVPTY</u>	60
7D4	1:	<u>QIQLVQSGPELKKPGETVKISCKASGYTFTNYGMN</u> <u>WVKQAPGKDLKWMG</u> <u>WINTYSGVPTY</u>	60
14A1	1:	<u>QIQLVQSGPELKKPGETVKISCKASGYTFTNYGMN</u> <u>WVKQAPGKGLKWMG</u> <u>WINTYSGVPTY</u>	60
2D5	1:	<u>QIQLVQSGPELKKPGETVKISCKASGYTFTNYGMN</u> <u>WVKQAPGKGLKWMG</u> <u>WINTYSGVPTY</u>	60
55A1	61:	<u>AGDFKGRFAFSLETSASTAYLQINN</u> <u>LKNE</u> <u>DATYFCARRGY</u> <u>GRYFDVWG</u> <u>TGTTVT</u> <u>VSS</u>	120
7D4	61:	<u>ADDFKGRFAFSLETSASTAYLQINN</u> <u>LKNE</u> <u>DATYFCARFSY</u> <u>GRHYFDYWGQGT</u> <u>TLTVSS</u>	120
14A1	61:	<u>ADDFKGRFAFSLETSASTAYLQINN</u> <u>EKNE</u> <u>DATYFCARFSY</u> <u>GRHYFDYWGQGT</u> <u>ALTASS</u>	120
2D5	61:	<u>TDDFKGRFAFSLETSASTAYLQINN</u> <u>LKNE</u> <u>DATYFCARFSY</u> <u>GRHYFDYWGQGT</u> <u>TLTVSS</u>	120

[図5B]

55A1 1:DIVLTQSPASLAVSLGQRATISCKASQSVDDYDVDSYMHWYQQKPGQPPKLLIYAASNLAS 60
 7D4 1:DIVLTQSPASLAVSLGQRATISCKASQSVDDYDGDSYMNWYQQKPGQPPQLLIYAASNLS 60
 14A1 1:DIVLTQSPASLAVSLGQRATISCKASQSVDDYDGDSYMNWYQQKPGQPPKLLIYAASNLS 60
 2D5 1:DIVLTQSPASLAVSLGQRATISCKASQSVDDYDGDSYMHWYQQKPGQPPKLLIYAASNLS 60

55A1 61:GIPARFSGSGSGTDFTLNIHPVEEEDVATYYCQQTIEDPP-TFGGGTKLEIK 111
 7D4 61:GIPARFSGSGSGTDFTLNIHPVEEEDAATYYCHQSTDDPPWTFGGGGTKLEIK 112
 14A1 61:GIPARFSGSGSGTDFTLNIHPVEEEDAATYYCQQTDDPPWTFGGGGTKLEIK 112
 2D5 61:GIPARFSGSGSGTDFTLNIHPVEEEDAATYYCQQTNDPPWTFGGGGTKLEIK 112

[図5C]

53A11 1:EVQLQQSGPELLKPGASVKISCKASGYTFDTYTMHWVKQSHGKSLEWIGGINPYGGTTY 60
 13B3 1:EVQLQQSGPELLKPGASVKISCKASGYTFEYTMHWVKQSHGKSLEWIGSINPYGGTSY 60
 23H8 1:EVQLQQSGPELLKPGASVKISCKASGYTFDNTIHWVKQSHGKSLEWIGHINPYGGTNN 60
 53A11 61:NEKFKDKATLTVDKSSSTAYMELRSLTSEDSAVYYCAKGD-YYGGSYNYWGQGTTLTVSS 119
 13B3 61:NEKFKDKATLTVDKSSNTAYMEFRSLTSEDCAVYYCARYG-NYVGIFYDWGQGTTLTVSS 119
 23H8 61:NEKFKDKATLTVDKSSSTAYMELRSLTSEDSAIYYCARKGIYYSPFDYWGQGTTLTVSS 120

[図5D]

53A11 1:DIVLTQSLATLSVTPGDSVSLSCRASQDISNSLHWYQQKSHESPRLLIKYASQSIGIPS 60
 13B3 1:ENVLTQSPAISASLGEKVTMSCRASSV-HYMYWYQQKSDASPKLWIYYTSLNAPGVPD 59
 23H8 1:DIQMTQTTSSLSASLGDRVTISCRASQDINNLYNHWYQQKPDGTVKLLISYTSKLHSGVPS 60
 53A11 61:RFSGSGSGTDFTLSINSVETEDFGMYFCQOSNSWPYTFGGGGTKLEIK 107
 13B3 60:RFSGSGSGNSYSLTISMEGEDAATYYCQOFTSSPYTFGGGGTKLEIK 106
 23H8 61:RFSGSGSGTDYSLTISNLEREDFATYFCQOGNTLPFTFGSGTNLEIK 107

[図6A]

16B3 1:DVKLVESGGGLVQPGGSLKLSCTASGFTFSGYTMWVRQTPEKRLLELVAEISFARDRAFY 60
 16E7 1:EVKLVESGGGLVQPGGSLKLSAASGFTFSSYTMWVRQTPEKRLLELVAEISFTRSAFY 60
 16B3 61:PDTVKGRFTISRDNKNTLYLQMSSLKSEDTAMYYCTRLGGRNHDYWFVDVWGTGTTVTV 120
 16E7 61:PDTVKGRFTISRDNKNTLYLQMSSLKSEDTAMYYCARLGNNYDYWFVDVWGTGTTVTV 120
 16B3 121:SS 122
 16E7 121:SS 122

[図6B]

16B3 1:DIVLTQSPTSLAVSPGQRATISCRASESVEYYGTSLMQWYQQKPGQRPQLLIYAASNVES 60
 16E7 1:DIVLTQSPTSLAVSLGQRATISCRASESVEYYGTSLMQWYQQKPGQRPKLLIYAASNVES 60

16B3 61:GVPARFSGSGSGTDFSLNIHPVEEDDIAVYFCQQSWKVPFTFGSGTKLEIK 111
 16E7 61:GVPARFSGSGSGTDFSLNIHPVEEDDIAMYFCQQSWKVPFTFGSGTKLEIK 111

[図6C]

14E1 1:QVQLQQSGAELVKPGASVRLSCKASGYTFTKYTIHWVKQRSGQGLEWIGWFYPGSDSIKY 60
 19E7 1:QVQLQQPGSVLVRPGASVKLSCKASGYTFTTYWMHWVKQRPGQGLEWIGEIHPSYGNNNN 60

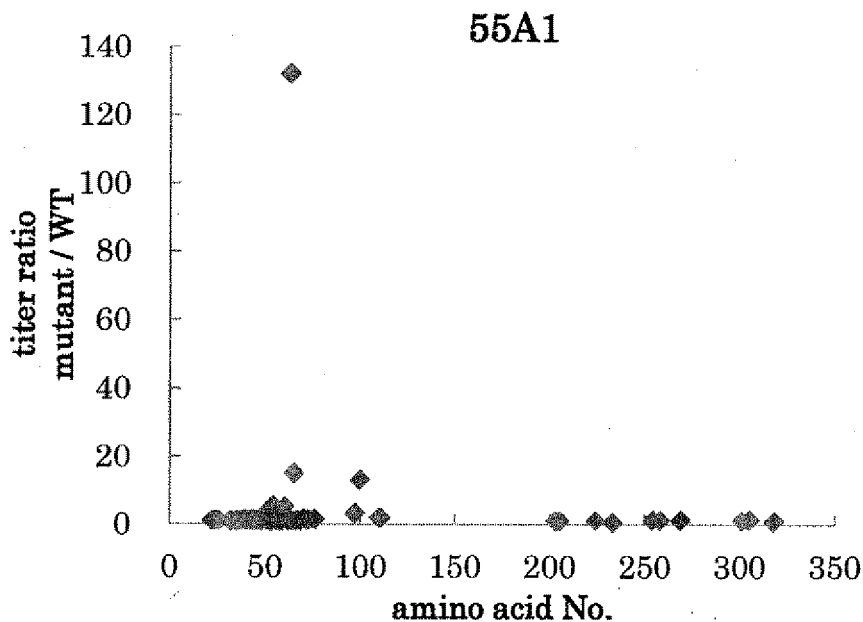
14E1 61:NEKFKDKATLTADKSSRTVYMELSRITSEDSAVYFCARHEEYTNLAYWGQGTSLVTVSA 119
 19E7 61:NEKFKGKATLTVDTSSSTAYVDLSRLTSEDSAVYYCARYDS-NYVFAYWGQGTSLVTVSA 118

[図6D]

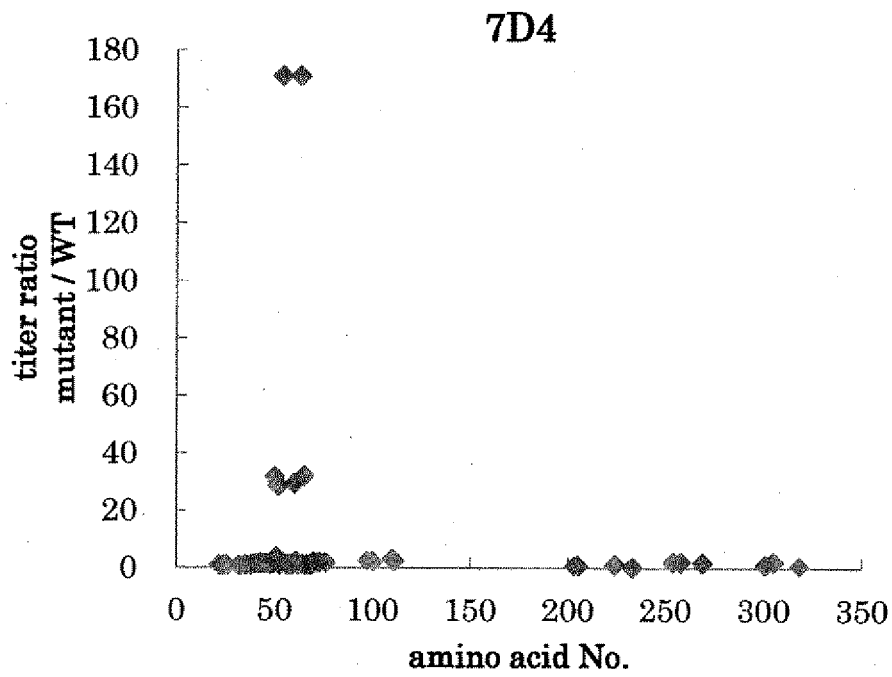
14E1 1:DIQMTQTTSSLSASLGDRVTISCRASQDISNYLNWYQQQPDGTVKLLIYYTSRLHSGVPS 60
 19E7 1:QIVLTQSPAIMASAPGEGVTITCSASSSVS-YMHWFOQKPGTSPKLWIYSTSNLASGVPA 59

14E1 61:RFSGSGSGTDYSLTISNLEQEDIATYFCQQGYTLPTWTFGGGTNLEIK 107
 19E7 60:RFSGSGSGTSYSLTISRMEAEDAATYYCQQQDSY-LTFGSGTKLEVK 105

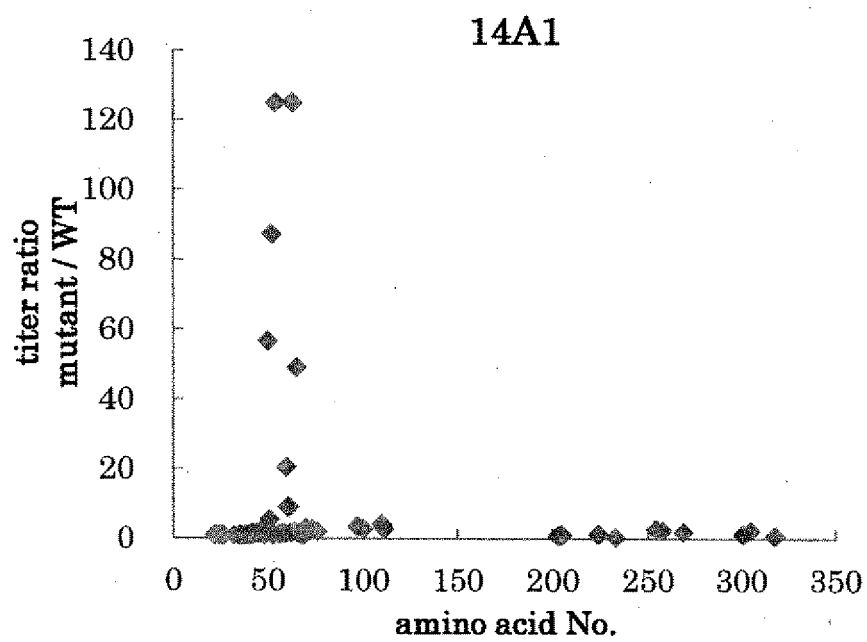
[図7A]



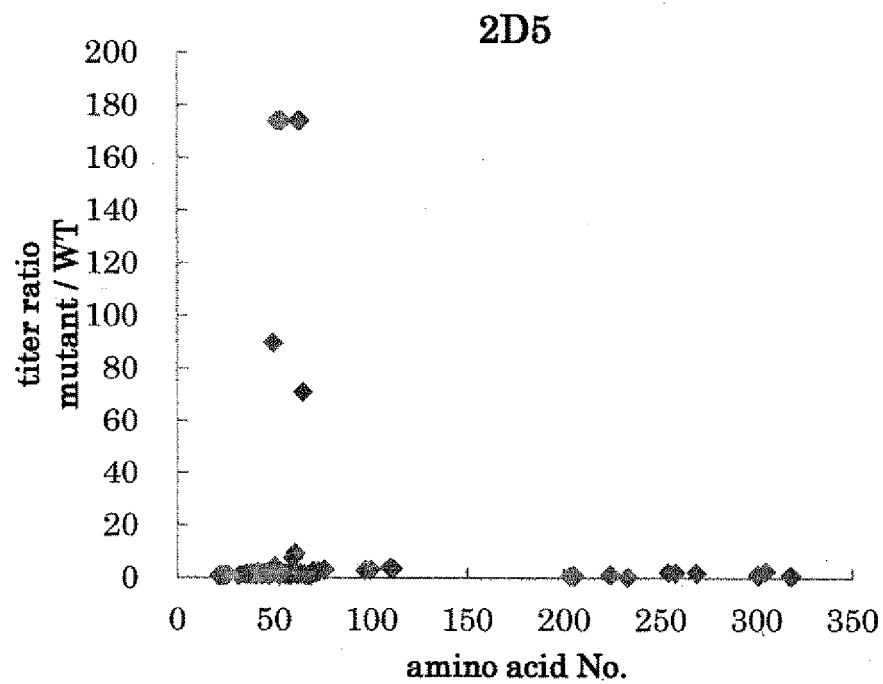
[図7B]



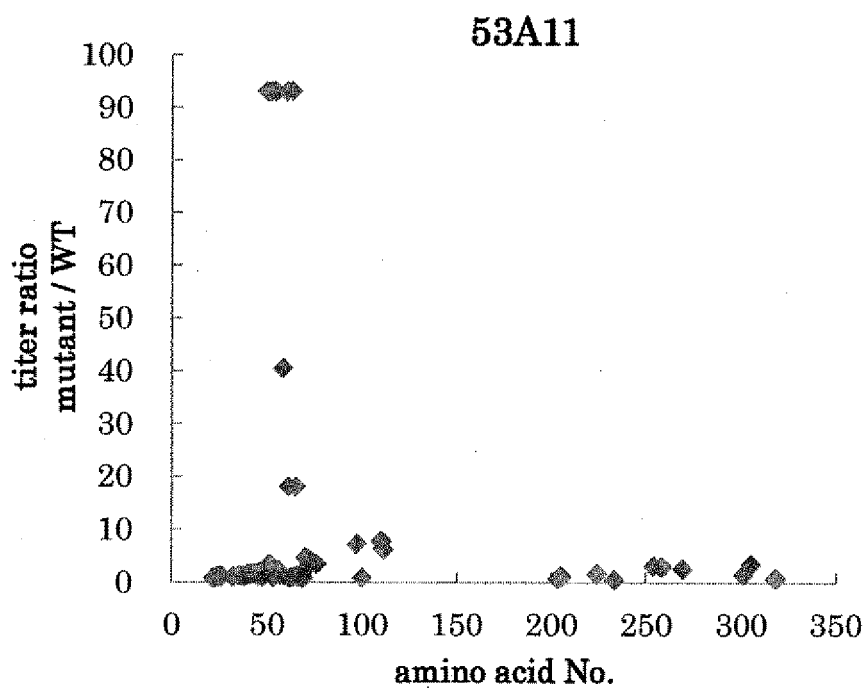
[図7C]



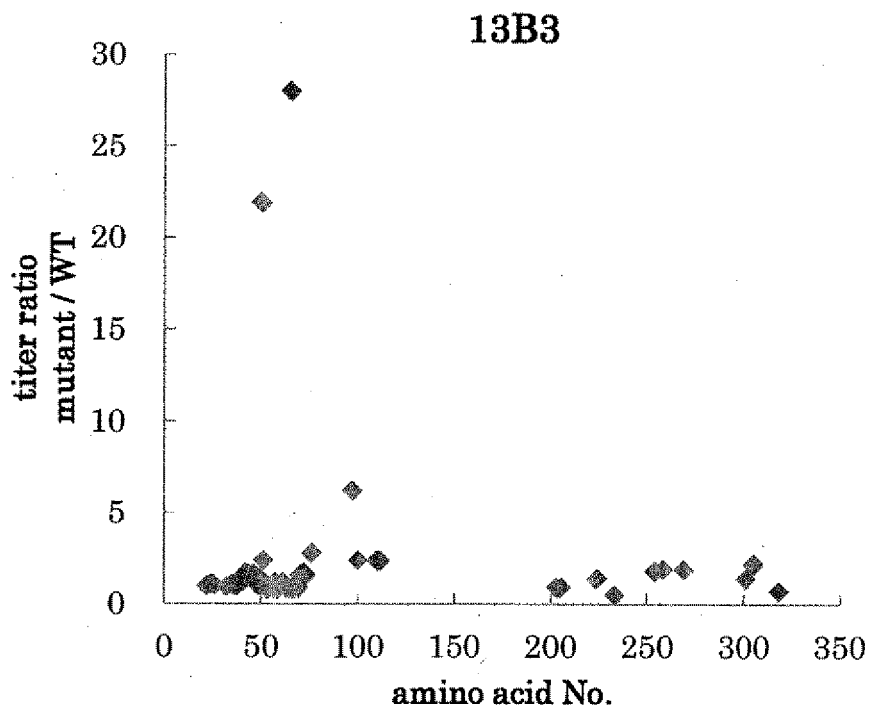
[図7D]



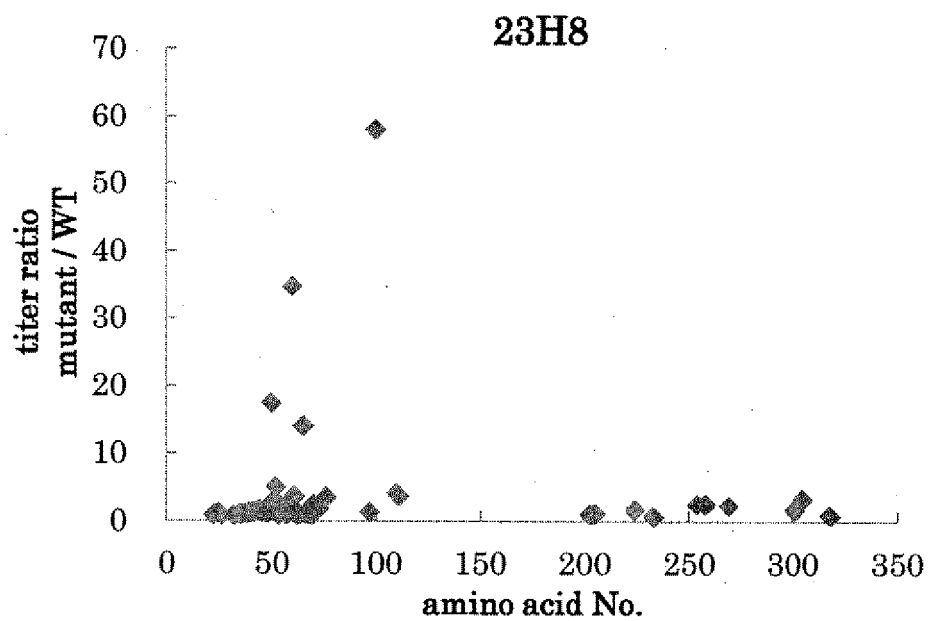
[図7E]



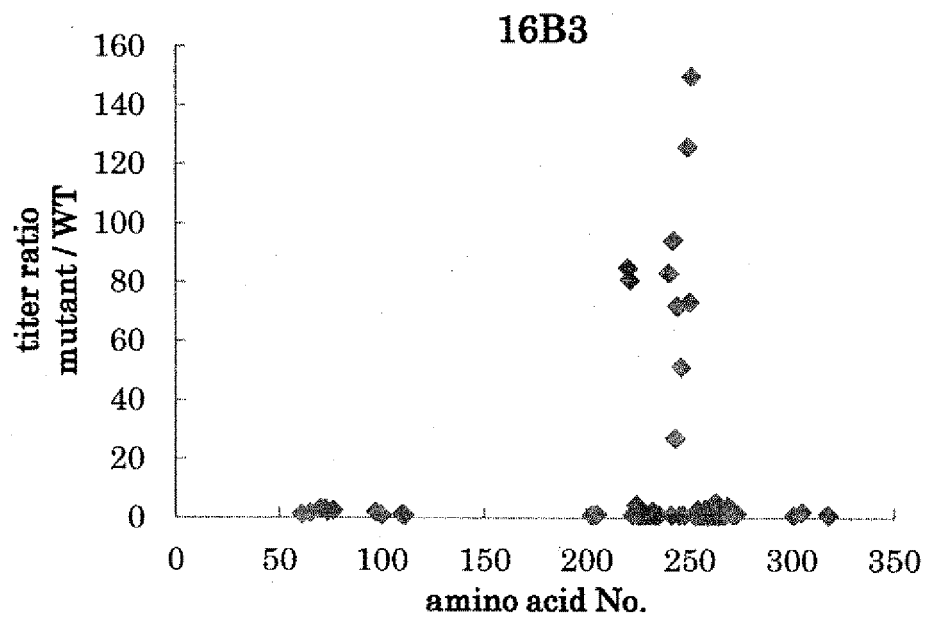
[図7F]



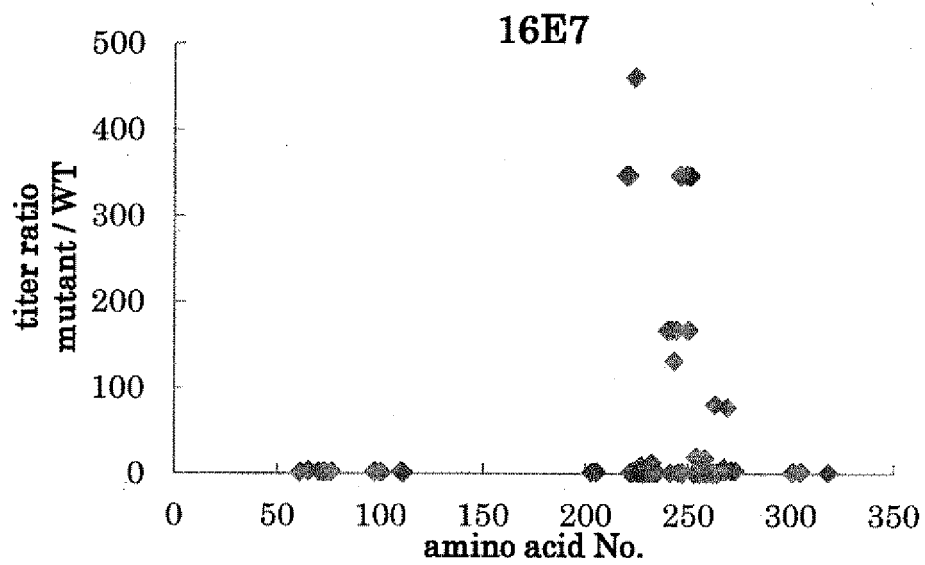
[図7G]



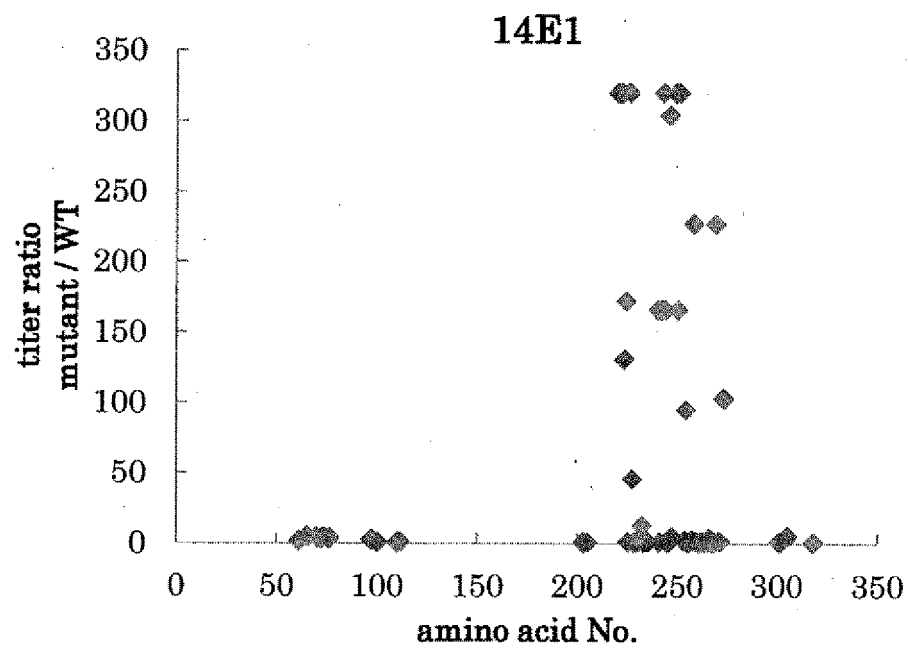
[図7H]



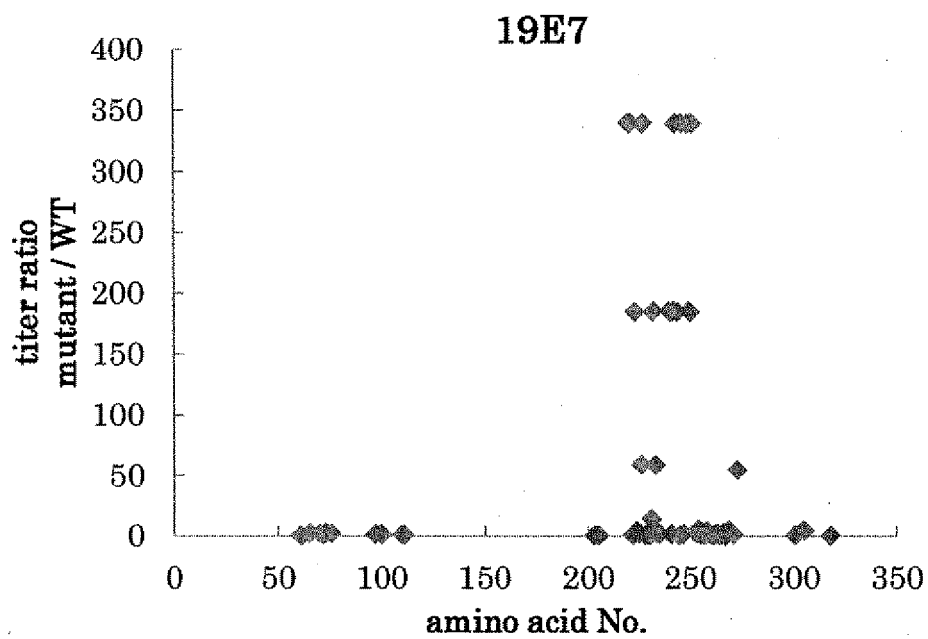
[図7I]



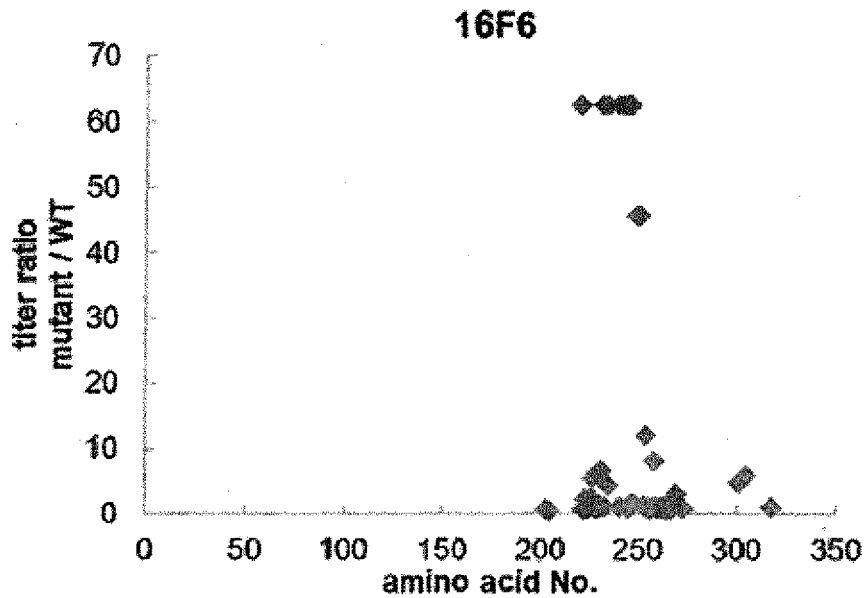
[図7J]



[図7K]



[図7L]



[図8A]

Heavy chain of h16B3

Kabat numbering

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
123456789	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

555666866686668777777778888888888999999911111111
 789012345678901234567890123456789012345678901234567
 h55A1 S1-L E V P A R F S G S G S G T D F T L T I N P V E A N D T A N Y Y C Q O T I E D P P T F G S G T K V E I R
 h55A1 S2-L
 h55A1 S3-L N
 h55A1 S4-L
 h55A1 S5-L N
 h55A1 S6-L
 h55A1 S7-L N

[9C]

Heavy chain of h55A1

Kabat numbering

123456789 11111111112222222222333333333344444444445555555555
 012345678901234567890123456789012345678901234567890123456789
 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

h55A1 F1-H QVQLVQSGSELKPGASVKVSCKASGYTFTNYGMNWVRQAPGQGLEWMGWINTYSGVPTT
 h55A1 F2-HA.V.....
 h55A1 F3-HA.V.....
 h55A1 F4-HA.V.....
 h55A1 F5-HA.V.....
 h55A1 F6-HA.V.....

66666666667777777777888888888899999999991111111111111111
 012345678901234567890123456789012345678901234567890123456789
 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

h55A1 F1-H AGDEKGRVFSIDTETSTAYLQISSELRSEDIAVYYCARGYYGRYFDVWGKGTITVTVSS
 h55A1 F2-HMIMIT...T...MELR...RSL.....
 h55A1 F3-HMIMIT...T...MELR...RSL.....
 h55A1 F4-HMIMIT...T...MELR...RSL.....
 h55A1 F5-HMIMIT...T...MELR...RSL.....
 h55A1 F6-HMIMIT...T...MELR...RSL.....

[9D]

Light chain of h55A1

Kabat numbering

123456789 11111111112222222222333333333344444444445555555555
 012345678901234567890123456789012345678901234567890123456789
 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

h55A1 F1-L DIQLTQSPSSLSASVGERVITCKAQSVDYDVDSYMHRYQQKPGAPALLIYAASNLAS
 h55A1 F2-L ELM...AT...V.P.E.A.LS.....Q.R.....
 h55A1 F3-L ELM...ST...L.P.E.A.LS.....Q.R.....
 h55A1 F4-L ELM...ST...L.P.E.A.LS.....Q.R.....
 h55A1 F5-L ELM...AT...V.P.E.A.LS.....Q.R.....
 h55A1 F6-L ELM...AT...V.P.E.A.LS.....Q.R.....

55555555556666667777777777888888888899999999991111111111
 789012345678901234567890123456789012345678901234567890123456789
 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

h55A1 F1-L EVSRFSGSGSGTDTFTFISLQPEELIATYYCQQTIEDPPTFGGGTKVEIK
 h55A1 F2-LL.....S.F.M.....
 h55A1 F3-LL.....S.F.M.....
 h55A1 F4-LL.....S.F.M.....
 h55A1 F5-LL.....S.F.M.....
 h55A1 F6-LL.....S.F.M.....

[10A]

Heavy chain of h53A11

Kabat numbering

123456789 11111111112222222222333333333344444444445555555555
 012345678901234567890123456789012345678901234567890123456789
 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

h53A11 S1-H QVQLVQSGAEVKKPGASVKVSCKASGYTFTDYMHWVRQAPGQRLWMCGINFYGGTTY
 h53A11 S2-H
 h53A11 S3-H
 h53A11 S4-H

66666666667777777777888888888899999999991111111111111111
 012345678901234567890123456789012345678901234567890123456789
 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

h53A11 S1-H NEKEKDRVTITRDTASTAYMELSSLRSEDIAVYYCARGDYGGSYNYWGQGTITVTVSS
 h53A11 S2-H
 h53A11 S3-H
 h53A11 S4-H

[10B]

Light chain of h53A11

Kabat numbering	
1 2 3 4 5 6 7 8 9	1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 6
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0	
h53A11 S1-L	ETVMTQSLATLSVSPGERATLSGRASQDISNSLHWYQQKPGQAPRLLIKYSQSISGIPA
h53A11 S2-L	.....
h53A11 S3-L	.....
h53A11 S4-L	.....
6 6 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 1 1 1 1 1 1 1 1	1 2 1 1 1 1 1 1
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7	0 0 0 0 0 0 0 0
	0 1 2 3 4 5 6 7
h53A11 S1-L	RFGSGSGSGTEFTLTISSLQSEDFAVYYCQQSNWPFYFGQGTKLEIK
h53A11 S2-L	.....
h53A11 S3-L	.....
h53A11 S4-L	.....

[11A]

Heavy chain of h23H8

Kabat numbering	
1 2 3 4 5 6 7 8 9	1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 5
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0	
h23H8 S1-H	QVQLVQSGAEVKKPGASVKVSCKRSGYTFTDNTIHWVRQAPGQGLEWMGHINPYFGSTNN
h23H8 S2-H	.....
h23H8 S3-H	.....
6 6 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 0 0 0 1
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0	0 0
	0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0
h23H8 S1-H	NERFKDRVTMRDTSISTAYMELSLRLSDDTAVYYCARKGIYYSSPEDYWGQGTITVTVSS
h23H8 S2-H	.....
h23H8 S3-H	.....

[11B]

Light chain of h23H8

Kabat numbering	
1 2 3 4 5 6 7 8 9	1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 4 4 4 4 4 4 4 4 5 5 5 5 5 5 5 5 5
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0	
h23H8 S1-L	DIQMTQSPFSSLSASVGRVTITCRASQDINNYLNWYQQKPGKAPKLLIYTSKLSGVPS
h23H8 S2-L	.....
h23H8 S3-L	.....
6 6 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0	0 0 0 0 0 0 0 0
	0 1 2 3 4 5 6 7
h23H8 S1-L	RFGSGSGSGTDFTLTISSLQFEDFATYYCQQGNTLPFTFGQGTKLEIK
h23H8 S2-L	.....
h23H8 S3-L	.....

[13B]

Light chain of h12B10

	Kabat numbering
	11111111111222222222233333333333444444444455555555556
	123456789012345678901234567890123456789012345678901234567890
h12B10 S1-L	DIQMTQSPSSLSASVGDRTVITCKASQDINKYIAWYQQKPGKAPKLLMAYPFTLQPGVPS
h12B10 S2-L	.....
h12B10 S3-L	.....
h12B10 S4-L	.....
	6666666666777777777788888888889999999999111111111
	12345678901234567890123456789012345678901234567890123456789
h12B10 S1-L	RFGSGSGTDFTLTISSLQPEDFATYYCLOYDNLLWTFGGGTKVEIN
h12B10 S2-L	.....
h12B10 S3-L	.....
h12B10 S4-L	.....

[14A]

Heavy chain of h16F6

	Kabat numbering
	11111111111222222222233333333333444444444455555555556
	12345678901234567890123456789012345678901234567890123456789
h16F6 S1-H	EVQLVQSGAEVKKPGASVKVSCKASGYTFTTYNIWVRQAPGQGLEWMGEILFGSAKTKY
h16F6 S2-H	.....
h16F6 S3-H	.....
h16F6 S4-H	.....
h16F6 S5-H	.....
	666666666677777777778888888888999999999911111111111
	012345678901234567890123456789012345678901234567890123456789
h16F6 S1-H	NKKFGRVTMTTRDTSTSTVYNELSSLRSEDTAVYYCAVDYGDYWGQGTITVTVSS
h16F6 S2-H	.....
h16F6 S3-H	.....
h16F6 S4-H	.....
h16F6 S5-H	.....

[14B]

Light chain of h16F6

	Kabat numbering
	11111111111222222222233333333333444444444455555555556
	123456789012345678901234567890123456789012345678901234567890
h16F6 S1-L	DIQMTQSPSSLSASVGDRTVITCKASQDVYTAIVANYQQKPGKSPKLLIYSASYRFTGVPS
h16F6 S2-L	.....
h16F6 S3-L	.....
h16F6 S4-L	.....
h16F6 S5-L	.....
	6666666666777777777788888888889999999999111111111
	12345678901234567890123456789012345678901234567890123456789
h16F6 S1-L	RFGSGSGTDFTLTISSLQPEDFATYYCQQHYSIPRTFGGGTKVEIN
h16F6 S2-L	A.....
h16F6 S3-L	..T..A.....
h16F6 S4-L	..T..A.....
h16F6 S5-L	..T..A.....

[15A]

Heavy chain of h16B3-S1

	CDR1	CDR2
EVQLVESGGGLVQPGGSLRLSCAASGFTFS	<u>GYTMSWVRQAPGKGLEWVSEISFARDRAFY</u>	<u>PDTVKG</u>
RFTISRDNSKNTLYLQMNSLRAEDTAVYYCA	<u>KLGGRNHDYWF</u>	<u>VDVWGQGTTVTVSS</u>
	CDR3	

Light chain of h16B3-S1

	CDR1	CDR2
DIVMTQSPDSLAVSLGERATINCRASESVEYYGTSLMQWYQQKPGQPPKLLIYAASN	<u>VESGV</u>	<u>PDRFS</u>
GS	<u>SGTDFTLTIS</u>	<u>SLQAEDVAVYYCQ</u>
	CDR3	<u>QSWKVPFTFGQGTKLEIK</u>

[15B]

Heavy chain of h16B3-S2

	CDR1	CDR2
EVQLVESGGGLVQPGGSLRLSCAASGFTFS	<u>GYTMSWVRQAPGKGLEWVSEISFARDRAFY</u>	<u>PDTVKG</u>
RFTISRDNSKNTLYLQMNSLRAEDTAVYYCA	<u>R</u>	<u>LGGRNHDYWF</u>
	CDR3	<u>VDVWGQGTTVTVSS</u>

Light chain of h16B3-S2

	CDR1	CDR2
DIVMTQSPDSLAVSLGERATINCRASESVEYYGTSLMQWYQQKPGQPPKLLIYAASN	<u>VESGV</u>	<u>PDRFS</u>
GS	<u>SGTDFTLTIS</u>	<u>SLQAEDVAVYYCQ</u>
	CDR3	<u>QSWKVPFTFGQGTKLEIK</u>

[15C]

Heavy chain of h16B3-S3

	CDR1	CDR2
EVQLVESGGGLVQPGGSLRLSCAASGFTFS	<u>GYTMSWVRQAPGKGLEWVSEISFARDRAFY</u>	<u>PDTVKG</u>
RFTISRDNSKNTLYLQMNSLRAEDTAVYYCA	<u>R</u>	<u>LGK</u>
	CDR3	<u>NHDFWYFDVWGQGTTVTVSS</u>

Light chain of h16B3-S3

	CDR1	CDR2
DIVMTQSPDSLAVSLGERATINCRASESVEYYGTSLMQWYQQKPGQPPKLLIYAASN	<u>VESGV</u>	<u>PDRFS</u>
GS	<u>SGTDFTLTIS</u>	<u>SLQAEDVAVYYCQ</u>
	CDR3	<u>QSWKVPFTFGQGTKLEIK</u>

WO 2016/039402

PCT/JP2015/075668

[15D]

Heavy chain of h16B3-S4

	CDR1	CDR2
EVQLVESGGGLVQPGGSLRLSCAASGFTFSGYTMSWVRQAPGKGLEWVSEISFARDRAFYPDTVKG		
RFTISRDNSKNTLYLQMNSLRAEDTAVYYCARLGGKNHDFWYFDVWGQGTTTVTVSS		
	CDR3	

Light chain of h16B3-S4

	CDR1	CDR2
DIVMTQSPDSLAVSLGERATINCRASESVEYYGTSLMQWYQQKPGQPPKLLIYAASNVESGVPDRFS		
GSQSGTDFTLTISLQAEDVAVYYCQQSWRVPFTFGQGTKLEIK		
	CDR3	

[15E]

Heavy chain of h16B3-S5

	CDR1	CDR2
EVQLVESGGGLVQPGGSLRLSCAASGFTFSGYTMSWVRQAPGKGLEWVSEISFARDRAFYPDTVKG		
RFTISRDNSKNTLYLQMNSLRAEDTAVYYCARLGGKNRDFWYFDLWGQGTTTVTVSS		
	CDR3	

Light chain of h16B3-S5

	CDR1	CDR2
DIVMTQSPDSLAVSLGERATINCRASESVEYYGTSLMQWYQQKPGQPPKLLIYAASNVESGVPDRFS		
GSQSGTDFTLTISLQAEDVAVYYCQQSWKVPFTFGQGTKLEIK		
	CDR3	

[15F]

Heavy chain of h16B3-S6

	CDR1	CDR2
EVQLVESGGGLVQPGGSLRLSCAASGFTFSGYTMSWVRQAPGKGLEWVSEISFARDRAFYPDTVKG		
RFTISRDNSKNTLYLQMNSLRAEDTAVYYCARLGGKNRDFWYFDLWGQGTTTVTVSS		
	CDR3	

Light chain of h16B3-S6

	CDR1	CDR2
DIVMTQSPDSLAVSLGERATINCRASESVEYYGTSLMQWYQQKPGQPPKLLIYAASNVESGVPDRFS		
GSQSGTDFTLTISLQAEDVAVYYCQQSWRVPFTFGQGTKLEIK		
	CDR3	

WO 2016/039402

PCT/JP2015/075668

[15G]

Heavy chain of h16B3-S7

CDR1 CDR2
 EVQLVESGGGLVQPGGSLRLSCAASGFTFSAYTMSWVRQAPGKGLEWVSDISFARDRAFYPTVKG
 RFTISRDNSKNTLYLQMNSLRAEDTAVYYCARLGGKNRDFWYFDLWGQGTTVTVSS
 CDR3

Light chain of h16B3-S7

CDR1 CDR2
 DIVMTQSPDSLAVSLGERATINCRASESVEYYGTSLMQWYQQKPGQPPKLLIYAASNVESGVPRFS
 GSGSGTDFLTITISLQAEDVAVYYCQQSWKVPFTFGQGTKLEIK
 CDR3

[15H]

Heavy chain of h16B3-S8

CDR1 CDR2
 EVQLVESGGGLVQPGGSLRLSCAASGFTFSAYTMSWVRQAPGKGLEWVSDISFARDRAFYPTVKG
 RFTISRDNSKNTLYLQMNSLRAEDTAVYYCARLGGKNRDFWYFDLWGQGTTVTVSS
 CDR3

Light chain of h16B3-S8

CDR1 CDR2
 DIVMTQSPDSLAVSLGERATINCRASESVEYYGTSLMQWYQQKPGQPPKLLIYAASNVESGVPRFS
 GSGSGTDFLTITISLQAEDVAVYYCQQSWRVPFTFGQGTKLEIK
 CDR3

[15I]

Heavy chain of h16B3-F1

CDR1 CDR2
 EVQLVESGGGLVQPGGSLRLSCAASGFTFSGYTMSWVRQAPGKGLEWVSEISFARDRAFYPTVKG
 RFTISRDNSKNTLYLQMNSLRAEDTAVYYCARLGGRNHDYWFVDVWGQGTTVTVSS
 CDR3

Light chain of h16B3-F1

CDR1 CDR2
 DIQMTQSPSSLSASVGDRVTITCRASESVEYYGTSLMQWYQQKPGKAPKLLIYAASNVESGVPSRFS
 GSGSGTDFLTITISLQPEDFATYYCQQSWKVPFTFGQGTKLEIK
 CDR3

[15J]

Heavy chain of h16B3-F2

	CDR1	CDR2
EVQLVESGGGLVQPGGSLRLSCAASGFTFS	<u>SGYTM</u>	<u>SWVRQAPGKGLEWVSEISFARDRAFY</u>
RFITISRDNSKNTLYLQMNSLRAEDTAVYYC	<u>ARLGGRNH</u>	<u>DYWF</u>
	CDR3	

Light chain of h16B3-F2

	CDR1	CDR2
EIVMTQSPATLSVSPGERATLSCRASESVEYYGTSLM	<u>QWYQQKPGQAPRLLIYAAS</u>	<u>NVESGIPARFS</u>
GS	<u>SGTEFTLTIS</u>	<u>SLQSEDFAVYYC</u>
	CDR3	

[15K]

Heavy chain of h16B3-F3

	CDR1	CDR2
EVQLVESGGGLVQPGGSLRLSCAASGFTFS	<u>SGYTM</u>	<u>SWVRQAPGKGLEWVSEISFARDRAFY</u>
RFITISRDNSKNTLYLQMNSLRAEDTAVYYC	<u>ARLGGRNH</u>	<u>DYWF</u>
	CDR3	

Light chain of h16B3-F3

	CDR1	CDR2
EIVLTQSPGTLSSLSPGERATLSCRASESVEYYGTSLM	<u>QWYQQKPGQAPRLLIYAAS</u>	<u>NVESGIPDRFS</u>
GS	<u>SGTDFTLTISRLEPEDFAVYYC</u>	<u>QSWKVPFTFGQGTKLEIK</u>
	CDR3	

[16A]

Heavy chain of h55A1-S1

	CDR1	CDR2
QVQLVQSGSELKKPGASVKVSCKASGYTFTNYGMN	<u>WVRQAPGQGLEWMGWINTYSGVPTYAGDFKG</u>	
RFVFSLDTSVSTAYLQISLKAEDTAVYYC	<u>ARRGYGR</u>	<u>RYFDVWGKGTTTVTVSS</u>
	CDR3	

Light chain of h55A1-S1

	CDR1	CDR2
DIVLTQSPASLAVSPGQRATITCKASQSV	<u>DYDVDSYMH</u>	<u>WYQQKPGQPPKLLIYAASNLASGV</u>
GS	<u>SGTDFTLTINPVEANDTANYYC</u>	<u>QQTIEDPPTFGG</u>
	CDR3	

WO 2016/039402

PCT/JP2015/075668

[16B]

Heavy chain of h55A1-S2

	CDR1	CDR2
QVQLVQSGSELKKPGASVKVSC	KASGYTFTNYGLNWVRQAPGQGLEWMGWINTYSGVPTYAGDFKG	
RFVFSLDTSVSTAYLQISSLKAEDTAVYYCARRGY	<u>YGERFFDVWGKGTTTVSS</u>	
	CDR3	

Light chain of h55A1-S2

	CDR1	CDR2
DIVLTQSPASLAVSPGQRATITCKASQSV	DYDVDSYMHWYQQKPGQPPKLLIYAASN	LASGVPARFS
GS	SGTDFTLTINPVEANDTANYYCQOTIEDPPTF	GGG
	CDR3	TKVEIK

[16C]

Heavy chain of h55A1-S3

	CDR1	CDR2
QVQLVQSGSELKKPGASVKVSC	KASGYTFTNYGLNWVRQAPGQGLEWMGWINTYSGVPTYAGDFKG	
RFVFSLDTSVSTAYLQISSLKAEDTAVYYCARRGY	<u>YGERFFDVWGKGTTTVSS</u>	
	CDR3	

Light chain of h55A1-S3

	CDR1	CDR2
DIVLTQSPASLAVSPGQRATITCKASQSV	DYDVDSYMHWYQQKPGQPPKLLIYAASN	LASGVPARFS
GS	SGTDFTLTINPVEANDTANYYCQNTIEDPPTF	GGG
	CDR3	TKVEIK

[16D]

Heavy chain of h55A1-S4

	CDR1	CDR2
QVQLVQSGSELKKPGASVKVSC	KASGYTFTNYAMNWVRQAPGQGLEWMGWINTYSGVPTYAGDFKG	
RFVFSLDTSVSTAYLQISSLKAEDTAVYYCARRGY	<u>YGERFFDVWGKGTTTVSS</u>	
	CDR3	

Light chain of h55A1-S4

	CDR1	CDR2
DIVLTQSPASLAVSPGQRATITCKASQSV	DYDVDSYMHWYQQKPGQPPKLLIYAASN	LASGVPARFS
GS	SGTDFTLTINPVEANDTANYYCQOTIEDPPTF	GGG
	CDR3	TKVEIK

WO 2016/039402

PCT/JP2015/075668

[16E]

Heavy chain of h55A1-S5

CDR1 CDR2
 QVQLVQSGSELKKPGASVKVSCASGYTFTNYAMNWVRQAPGQGLEWMGWINTYSGVGTYAGDFKG
 RFVFSLDTSVSTAYLQISSLKAEDTAVYYCARRGFGYGRFFDVWGKGTTVTVSS
 CDR3

Light chain of h55A1-S5

CDR1 CDR2
 DIVLTQSPASLAVSPGQRATITCKASQSVDDYDVDSYMHWYQQKPGQPPKLLIYAASNLASGVPARFS
 GSGSGTDFTLTINPVEANDTANYYCQNTIEDPPTFGGGTKVEIK
 CDR3

[16F]

Heavy chain of h55A1-S6

CDR1 CDR2
 QVQLVQSGSELKKPGASVKVSCASGYTFTNYALNWVRQAPGQGLEWMGWINTYSGVGTYAGEFKG
 RFVFSLDTSVSTAYLQISSLKAEDTAVYYCARRGFGYGRFFDVWGKGTTVTVSS
 CDR3

Light chain of h55A1-S6

CDR1 CDR2
 DIVLTQSPASLAVSPGQRATITCKASQSVDDYDVDSYMHWYQQKPGQPPKLLIYAASNLASGVPARFS
 GSGSGTDFTLTINPVEANDTANYYCQQTIEDPPTFGGGTKVEIK
 CDR3

[16G]

Heavy chain of h55A1-S7

CDR1 CDR2
 QVQLVQSGSELKKPGASVKVSCASGYTFTNYALNWVRQAPGQGLEWMGWINTYSGVGTYAGEFKG
 RFVFSLDTSVSTAYLQISSLKAEDTAVYYCARRGFGYGRFFDVWGKGTTVTVSS
 CDR3

Light chain of h55A1-S7

CDR1 CDR2
 DIVLTQSPASLAVSPGQRATITCKASQSVDDYDVDSYMHWYQQKPGQPPKLLIYAASNLASGVPARFS
 GSGSGTDFTLTINPVEANDTANYYCQNTIEDPPTFGGGTKVEIK
 CDR3

[16H]

Heavy chain of h55A1-F1

	CDR1	CDR2
QVQLVQSGSELKKPGASVKV	SCKASGYTFTNYGMN	WVRQAPGQGLEWMGWINTYSGVPTYAGDFKG
RFVFSLDTSVSTAYLQISS	LKAEDTAVYYCARRGY	YGRRYFDVWGKGTTTVTVSS
	CDR3	

Light chain of h55A1-F1

	CDR1	CDR2
DIQLTQSPSSLSASVGDRVTITCK	ASQSVDDYDVDSYMH	WYQKPGKAPKLLIYAASN
LSASGVPSRFS	SGSGTDFTFITISLQ	PEDIATYYCQQTIEDPPTFGG
	CDR3	GTKVEIK

[16I]

Heavy chain of h55A1-F2

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKV	SCKASGYTFTNYGMN	WVRQAPGQGLEWMGWINTYSGVPTYAGDFKG
RVTMTTDTSTSTAYMELRSL	RSDDTAVYYCARRGY	YGRRYFDVWGKGTTTVTVSS
	CDR3	

Light chain of h55A1-F2

	CDR1	CDR2
EIVMTQSPATLSVSPGERATL	SCKASQSVDDYDVDSYMH	WYQKPGQAPRLLIYAASN
LASGIPARFS	SGSGTEFTLTITISLQ	SEDFAVYYCQQTIEDPPTFGG
	CDR3	GTKVEIK

[16J]

Heavy chain of h55A1-F3

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKV	SCKASGYTFTNYGMN	WVRQAPGQGLEWMGWINTYSGVPTYAGDFKG
RVTMTTDTSTSTAYMELRSL	RSDDTAVYYCARRGY	YGRRYFDVWGKGTTTVTVSS
	CDR3	

Light chain of h55A1-F3

	CDR1	CDR2
DIQLTQSPSSLSASVGDRVTITCK	ASQSVDDYDVDSYMH	WYQKPGKAPKLLIYAASN
LASGVPSRFS	SGSGTDFTLTISLQ	PEDFATYYCQQTIEDPPTFGG
	CDR3	GTKVEIK

[16K]

Heavy chain of h55A1-F4

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTNYGMN	WVRQAPGQGLEWMGW	INTYSGVPTYAGDFKG
RVTMTTDTSTSTAYMELRSLRSDDTAVYYC	<u>ARRGY</u>	<u>GRRYFDVWGKGT</u> TVTVSS
	CDR3	

Light chain of h55A1-F4

	CDR1	CDR2
EIVLTQSPGTL	SLSPGERATLSCKASQSV	DYDVDSYMH
WYQQKPGQAPRL	LIYAASN	LASGIPDRFS
GS	SGTDFTLTISRLEPEDFAVYYC	<u>QQTIEDPPT</u> FGGGTKVEIK
	CDR3	

[16L]

Heavy chain of h55A1-F5

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTNYGMN	WVRQAPGQGLEWMGW	INTYSGVPTYAGDFKG
RFTFTLDTSTSTAYMELSSLRSED	AVYYC	<u>ARRGY</u>
		<u>GRRYFDVWGKGT</u> TVTVSS
	CDR3	

Light chain of h55A1-F5

	CDR1	CDR2
DIQLTQSPSSLSASVGD	RVTITCKASQSV	DYDVDSYMH
WYQQKPGKAPKLLIYAASN	LASGVPSRFS	
GS	SGTDFTLTIS	SLQPEDFATYYC
		<u>QQTIEDPPT</u> FGGGTKVEIK
	CDR3	

[16M]

Heavy chain of h55A1-F6

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTNYGMN	WVRQAPGQGLEWMGW	INTYSGVPTYAGDFKG
RFTFTLDTSTSTAYMELSSLRSED	AVYYC	<u>ARRGY</u>
		<u>GRRYFDVWGKGT</u> TVTVSS
	CDR3	

Light chain of h55A1-F6

	CDR1	CDR2
EIVMTQSPATLSVSPGERATLSCKASQSV	DYDVDSYMH	WYQQKPGQAPRL
LIYAASN	LASGIPARFS	
GS	SGTEFTLTIS	SLQSEDFAVYYC
		<u>QQTIEDPPT</u> FGGGTKVEIK
	CDR3	

[17A]

Heavy chain of h53A11-S1

CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTD <u>DTMHWVRQAPGQRLEWMGGINPYYGGTTYNEKFKD</u>	
RVTITRDTSASTAYMELSSLRSEDFAVYYCAK <u>GDYYGGSYNYWGQGTTVTVSS</u>	
CDR3	

Light chain of h53A11-S1

CDR1	CDR2
EIVMTQSLATLSVSPGERATLSCRASQDISNSLHWYQQKPGQAPRLLIKYASQISGIPARFSGSGS	
GTEFTLTISLQSEDFAVYYCQQSNSWPYTFGQGTKLEIK	
CDR3	

[17B]

Heavy chain of h53A11-S2

CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTD <u>DTMHWVRQAPGQRLEWMGGINPYYGGTTYNEKFKD</u>	
RVTITRDTSASTAYMELSSLRSEDFAVYYCAK <u>GDYYGGSYNYWGQGTTVTVSS</u>	
CDR3	

Light chain of h53A11-S2

CDR1	CDR2
EIVMTQSLATLSVSPGERATLSCRASQDISNSLHWYQQKPGQAPRLLIYYASQISGIPARFSGSGS	
GTEFTLTISLQSEDFAVYYCQQSNSWPYTFGQGTKLEIK	
CDR3	

[17C]

Heavy chain of h53A11-S3

CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTD <u>DTMHWVRQAPGQRLEWMGGINPYYGGTTYNEKFKD</u>	
RVTITRDTSASTAYMELSSLRSEDFAVYYCAK <u>GDYYGGSYNYWGQGTTVTVSS</u>	
CDR3	

Light chain of h53A11-S3

CDR1	CDR2
EIVMTQSPATLSVSPGERATLSCRASQDISNSLHWYQQKPGQAPRLLIKYASQISGIPARFSGSGS	
GTEFTLTISLQSEDFAVYYCQQSNSWPYTFGQGTKLEIK	
CDR3	

WO 2016/039402

PCT/JP2015/075668

[17D]

Heavy chain of h53A11-S4

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTD	YTMHWVRQAPGQ	RLEWMGGINPYYGGTTYNEKFKD
RVTITRDTSASTAYMELSSLRSED	TAVYYCARGDYYGGSYNYWG	QGTTVTVSS
	CDR3	

Light chain of h53A11-S4

	CDR1	CDR2
EIVMTQSPATLSVSPGERATLSCRASQDISNSLHWYQQKPGQAPRLLIKYASQ	SISGIPARFSGSGS	
GTEFTLTISSLQSEDFAVYYCQ	QSNWPTYTFGQ	GTKLEIK
	CDR3	

[18A]

Heavy chain of h23H8-S1

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTD	NTIHWVRQAPGQGLEWMGHINPYYGGTNNNEKFKD	
RVTIMTRDTSISTAYMELSR	LRSDDTAVYYCARKGIYYSSPFDYWG	QGTTVTVSS
	CDR3	

Light chain of h23H8-S1

	CDR1	CDR2
DIQMTQSPSSLSASVGDRVTITCRASQDINNYLNWYQQKPGKAPKLLIYYTSKLHSGVPSRFS	SGSGS	
GTDFTLTISSLQPEDFATYYCQ	QGNTLPFTFGQ	GTKLEIK
	CDR3	

[18B]

Heavy chain of h23H8-S2

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTD	NTIHWVRQAPGQGLEWMGHINPYYGGTNNNEKFKD	
RVTIMTRDTSISTAYMELSR	LRSDDTAVYYCARKGIYYSSPFDYWG	QGTTVTVSS
	CDR3	

Light chain of h23H8-S2

	CDR1	CDR2
DIQMTQSPSSLSASVGDRVTITCRASQDINNYLNWYQQKPGKAPKLLISYTSKLHSGVPSRFS	SGSGS	
GTDFTLTISSLQREDFATYYCQ	QGNTLPFTFGQ	GTKLEIK
	CDR3	

[18C]

Heavy chain of h23H8-S3

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTD	NTIHWVRQAPGQGLEWMGHINPYYGGTNNNEKFKD	
RVTIMTRDTSISTAYMELSR	LRSDDTAVYYCARKGIYYSSPFDYWG	QGTTVTVSS
	CDR3	

Light chain of h23H8-S3

	CDR1	CDR2
DIQMTQSPSSLSASVGDRVTITCRASQDINNYLNWYQQKPGKAPKLLISYTSKLHSGVPSRFS	SGSGS	
GTDFTLTISSLQPEDFATYYCQ	QGNTLPFTFGQ	GTKLEIK
	CDR3	

[19A]

Heavy chain of h13B3-S1

CDR1 CDR2
 QVQLVQSGAEVKKPGASVKVSCKASGYTFTEYTMHWVRQAPGQGLEWMGSINPYYGGTSYNEKFKD
 RVTMTRDTSTSTVYMELSSLRSEDVAVYYCARYGNYVGYFDYWGQGTITVTVSS
 CDR3

Light chain of h13B3-S1

CDR1 CDR2
 EIVLTQSPGTLISLSPGERATLSCRASSSVHYMYWYQQKPGQAPRLLIYYTSNLAAPGIPDRFSGSGSG
 TDFTLTISRLEPEDFAVYYCQQFTSSPYTFGGGGTKVEIK
 CDR3

[19B]

Heavy chain of h13B3-S2

CDR1 CDR2
 QVQLVQSGAEVKKPGASVKVSCKASGYTFTEYTMHWVRQAPGQGLEWMGSINPYYGGTSYNEKFKD
 RVTSTRDTSISTAYMELSLRSDTVVYYCARYGNYVGYFDYWGQGTITVTVSS
 CDR3

Light chain of h13B3-S2

CDR1 CDR2
 EIVLTQSPGTLISLSPGERATLSCRASSSVHYMYWYQQKPGQAPRLLIYYTSNLAAPGIPDRFSGSGSG
 TDFTLTISRLEPEDFAVYYCQQFTSSPYTFGGGGTKVEIK
 CDR3

[19C]

Heavy chain of h13B3-S3

CDR1 CDR2
 QVQLVQSGAEVKKPGASVKVSCKASGYTFTEYTMHWVRQAPGQGLEWMGSINPYYGGTSYNEKFKD
 RVTMTRDTSTSTVYMELSSLRSEDVAVYYCARYGNYVGYFDYWGQGTITVTVSS
 CDR3

Light chain of h13B3-S3

CDR1 CDR2
 EIVLTQSPATLSLSPGERATLSCRASSSVHYMYWYQQKPGQAPRLLIYYTSNLAAPGIPARFSGSGSG
 TDFTLTISSLEPEDFAVYYCQQFTSSPYTFGGGGTKVEIK
 CDR3

WO 2016/039402

PCT/JP2015/075668

[19D]

Heavy chain of h13B3-S4

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFT	<u>TEYTMHWVRQAPGQGLEWMGSINPY</u>	<u>GGTSYNEKFKD</u>
RVTSTRDTSISTAYMELSR	<u>LRSDDTVVYYCARYGNYVGYFDYWGQGT</u>	<u>TVTVSS</u>
	CDR3	

Light chain of h13B3-S4

	CDR1	CDR2
EIVLTQSPATLSLSPGERATLSCR	<u>ASSSVHYMYWYQQKPGQAPRL</u>	<u>IYYTSNLAGIPARFSGSGSG</u>
TDFTLTISSELPEDFAVYYC	<u>QQFTSSPYTFGGG</u>	<u>TKVEIK</u>
	CDR3	

[20A]

Heavy chain of h12B10-S1

	CDR1	CDR2
EVQLVESGGGLVKPGGSLRLSCAASG	<u>FLSTSGMGVGVVRQAPGKGLEWLA</u>	<u>HIWWNDEKYYNP</u>
RFTISRDDSKNTLYLQMNSLKTED	<u>TAVYYCARDHLA</u>	<u>YFDVWGQGT</u>
	CDR3	

Light chain of h12B10-S1

	CDR1	CDR2
DIQMTQSPSSLSASVGDRVTITCK	<u>ASQDINKYIAWYQQKPGKAPKLL</u>	<u>MAYPFTLQPGVPSR</u>
GTDFTLTISLQPEDFATYYC	<u>LQYDNLLWTFGQGT</u>	<u>KVEIK</u>
	CDR3	

[20B]

Heavy chain of h12B10-S2

	CDR1	CDR2
EVQLVESGGGLVKPGGSLRLSCAASG	<u>FLSTSGMGVGVVRQAPGKGLEWLA</u>	<u>HIWWNDEKYYNP</u>
RFTISRDDSKNTLYLQMNSLKTED	<u>TAVYYCARDHLA</u>	<u>YFDLWGQGT</u>
	CDR3	

Light chain of h12B10-S2

	CDR1	CDR2
DIQMTQSPSSLSASVGDRVTITCK	<u>ASQDINKYIAWYQQKPGKAPKLL</u>	<u>MAYPETLQPGVPSR</u>
GTDFTLTISLQPEDFATYYC	<u>LQYDNLLWTFGQGT</u>	<u>KVEIK</u>
	CDR3	

WO 2016/039402

PCT/JP2015/075668

[20C]

Heavy chain of h12B10-S3

	CDR1	CDR2
EVQLVESGGGLVKPGGSLRLSCAASGFSLS	TSGMGVGVWRQAPGKGLEWLAHIWWNDEKYINPSLKS	
RFTISRDDSKNTLYLQMNSLKTEDTAVYYCARDHLA	FFFFDLWGQGLTVTVSS	
	CDR3	

Light chain of h12B10-S3

	CDR1	CDR2
DIQMTQSPSSLSASVGDRVTITCKASQDINKYIAWYQQKPGKAPKLLMAYPFTLQPGVPSRFS	SGSGS	
GTDFTLTISSLQPEDFATYYCLQYDNLLWTFGQGTKVEIK		
	CDR3	

[20D]

Heavy chain of h12B10-S4

	CDR1	CDR2
EVQLVESGGGLVKPGGSLRLSCAASGFSLS	SSSGMGVGVWRQAPGKGLEWLAHIWWNDEKYINPSLKS	
RFTISRDDSKNTLYLQMNSLKTEDTAVYYCARDHLV	FFFFDLWGQGLTVTVSS	
	CDR3	

Light chain of h12B10-S4

	CDR1	CDR2
DIQMTQSPSSLSASVGDRVTITCKASQDINKYIAWYQQKPGKAPKLLMAYPFTLQPGVPSRFS	SGSGS	
GTDFTLTISSLQPEDFATYYCLQYDNLLWTFGQGTKVEIK		
	CDR3	

[21A]

Heavy chain of h16F6-S1

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTTYWIAWVRQAPGQGLEWMGEILPGSAKTKYNKKFKG		
RVTMTTDTSTSTVYMELSSLRSEDTAVYYCAVYDYGADYWGQGT	TVTVSS	
	CDR3	

Light chain of h16F6-S1

	CDR1	CDR2
DIQMTQSPSSLSASVGDRVTITCKASQDVITAVAWYQQKPGKSPKLLIYSASYRFTGVPSRFS	SGSGS	
GTDFTLTISSLQPEDFATYYCQQHYSIPRTFGGGTKVEIK		
	CDR3	

[21B]

Heavy chain of h16F6-S2

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTTYWIAWVRQAPGQGLEWMGEILPGSAKTKYNKKFKG		
RVTMTRDTSTSTVYMELSSLRSED	TAVYYCAV	<u>YDYGADYWGQGTTVT</u> VSS
	CDR3	

Light chain of h16F6-S2

	CDR1	CDR2
DIQMTQSPSSLSASVGDRVTITCKASQDVYTAVAWYQQKPGKSPKLLIYSASYRFTGVPSRFTSGSGA		
GTDFTLTISSLQPEDFATYYC	<u>QQHY</u> SIPRTF	GGG
	CDR3	TKVEIK

[21C]

Heavy chain of h16F6-S3

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTTYWIAWVRQAPGQGLEWMGEILPGSAKTKYNKKFKG		
RVTMTRDTSTSTVYMELSSLRSED	TAVYYCAV	<u>YDYGADYWGQGTTVT</u> VSS
	CDR3	

Light chain of h16F6-S3

	CDR1	CDR2
DIQMTQSPSSLSASVGDRVTITCKASQDVYTAVAWYQQKPGKSPKLLIYSASYRFTGVPSRFTGSGA		
GTDFTLTISSLQPEDFATYYC	<u>QQHY</u> SIPRTF	GGG
	CDR3	TKVEIK

[21D]

Heavy chain of h16F6-S4

	CDR1	CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTTYWIAWVRQAPGQGLEWMGEILPGSAKTKYNKKFKG		
RVTMTRDTSTSTVYMELSSLRSED	TAVYYCAV	<u>YDYGADYWGQGTTVT</u> VSS
	CDR3	

Light chain of h16F6-S4

	CDR1	CDR2
DIQMTQSPSSLSASVGDRVTITCKASQDVYTAVAWYQQKPGKSPKLLIYSASYRFTGVPSRFTGSGA		
GTDFTLTISSLQPEDFATYYC	<u>QQHY</u> SIPRTF	GGG
	CDR3	TKVEIK

[21E]

Heavy chain of h16F6-S5

CDR1 CDR2
QVQLVQSGAEVKKPGASVKVSCKASGYTFTTYWIAWVRQAPGQGLEWMGEILEGSAKTKYNKKFKG
RVTMTRDTSTSTVYMELSSLRSED~~TAVYYCAV~~YDYGADYWGQGTTVTVSS
CDR3

Light chain of h16F6-S5

CDR1 CDR2
DIQMTQSPSSLSASVGDRVSITCKASQDVYTAVAWYQQKPGKSPKLLIYSAS~~YRFT~~GVPSRFTGSGA
GTDFTFTISSLQPEDFATYYCQQHYSIPRTFGGGTKVEIK
CDR3