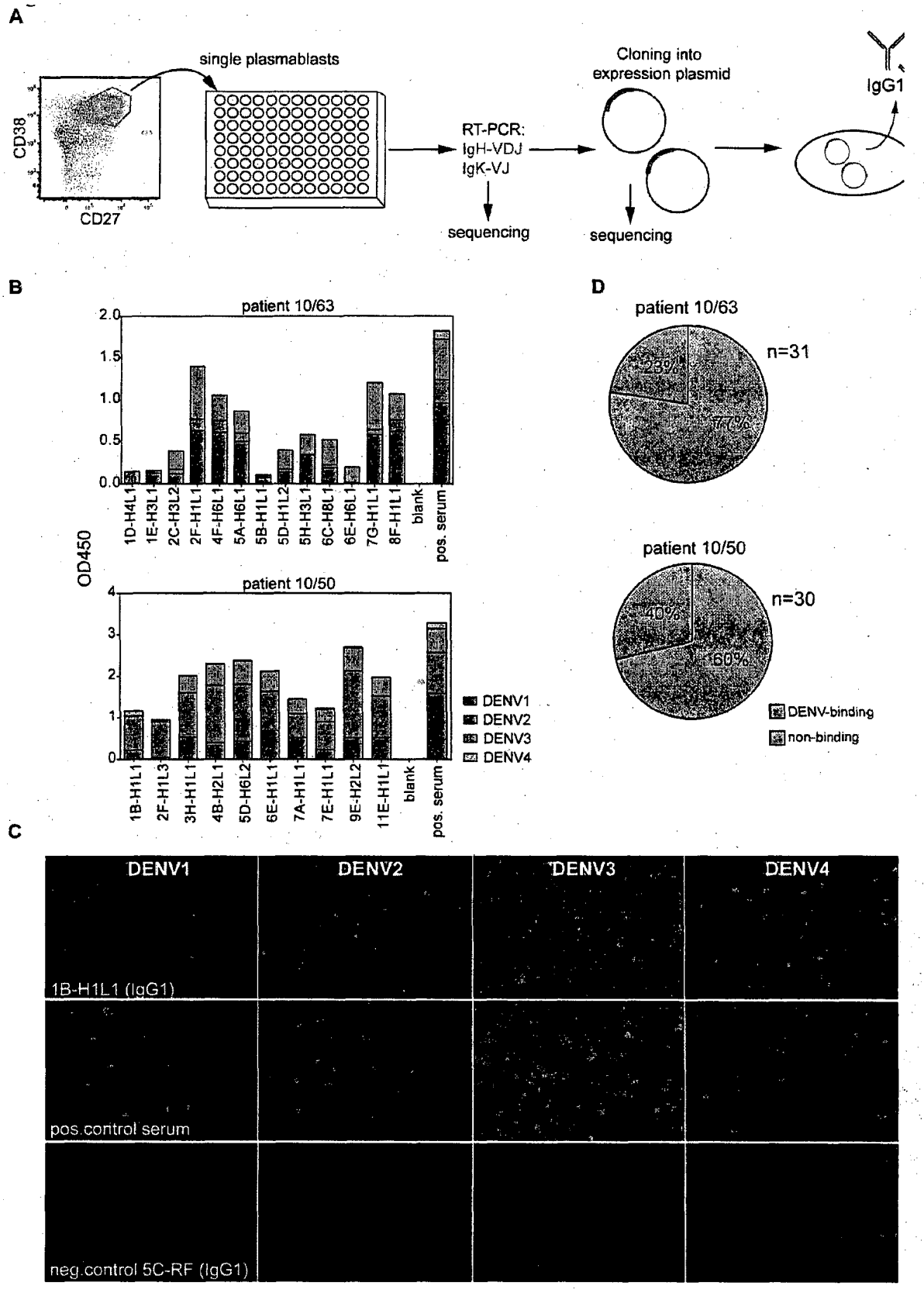

A
single plasmablasts
CD38
CD27
RT-PCR:
IgH-VDJ
IgK-VJ
sequencing
Cloning into
expression plasmid
sequencing
IgG1
B
patient 10/63
OD450
2.0
1.5
1.0
0.5
0.0
1D-H4L1
1E-H3L1
2C-H3L2
2F-H1L1
4F-H6L1
5A-H6L1
5B-H1L1
5D-H1L2
5H-H3L1
6C-H8L1
6E-H6L1
7G-H1L1
8F-H1L1
blank
pos. serum
patient 10/50
4
3
2
1
0
1B-H1L1
2F-H1L3
3H-H1L1
4B-H2L1
5D-H6L2
6E-H1L1
7A-H1L1
7E-H1L1
9E-H2L2
11E-H1L1
blank
pos. serum
DENV1
DENV2
DENV3
DENV4
D
patient 10/63
n=31
23%
77%
patient 10/50
n=30
40%
60%
DENV-binding
non-binding
C
DENV1
DENV2
DENV3
DENV4
1B-H1L1 (IgG1)
pos.control serum
neg.control 5C-RF (IgG1)

FIGURE ONE

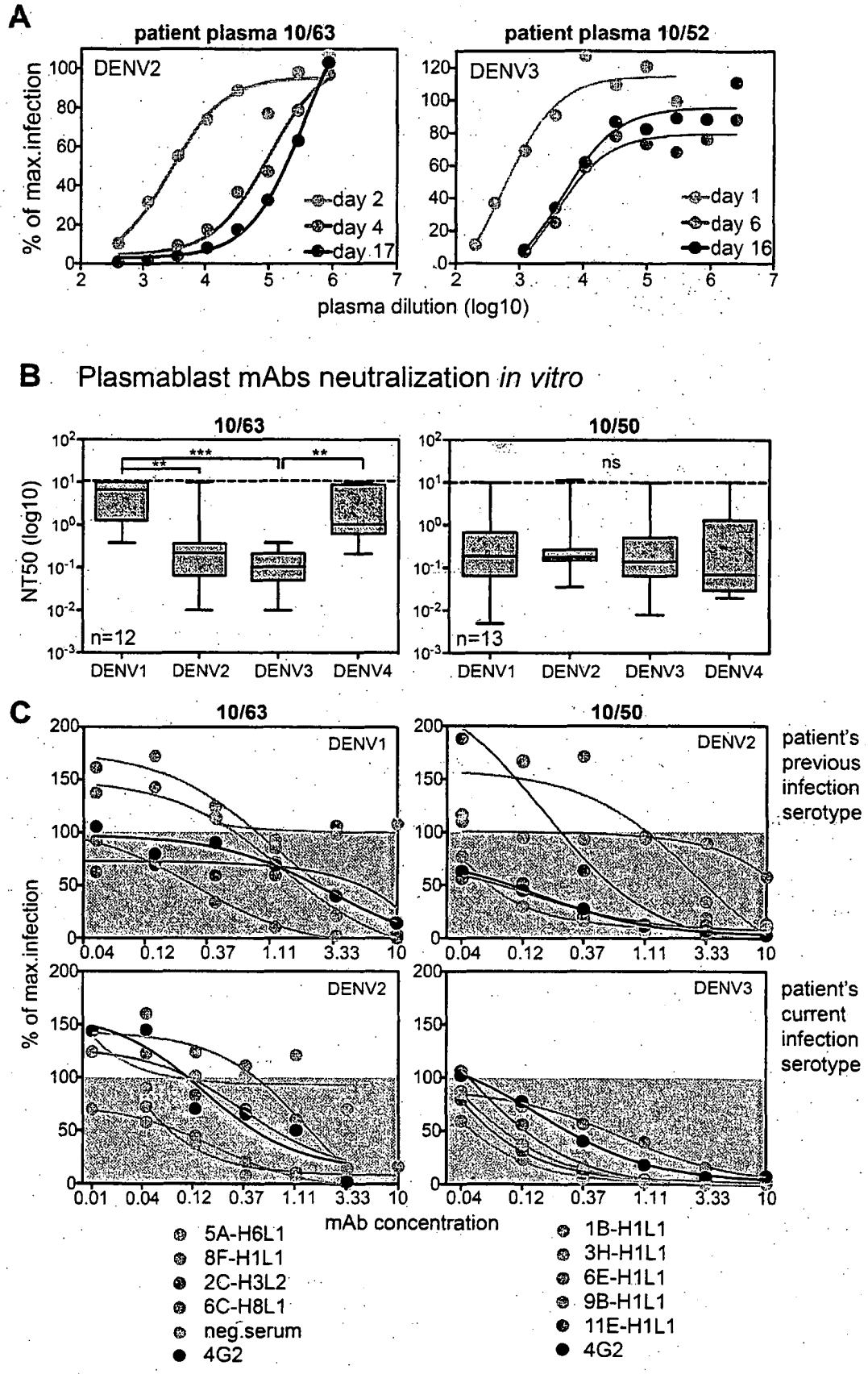

A
patient plasma 10/63
patient plasma 10/52
DENV2
DENV3
% of max.infection
day 2
day 4
day 17
day 1
day 6
day 16
plasma dilution (log10)
B Plasmablast mAbs neutralization in vitro
10/63
10/50
NT50 (log10)
n=12
n=13
ns
DENV1
DENV2
DENV3
DENV4
C
10/63
10/50
DENV1
DENV2
DENV3
patient's previous infection serotype
patient's current infection serotype
% of max.infection
mAb concentration
5A-H6L1
8F-H1L1
2C-H3L2
6C-H8L1
neg.serum
4G2
1B-H1L1
3H-H1L1
6E-H1L1
9B-H1L1
11E-H1L1
4G2

FIGURE TWO

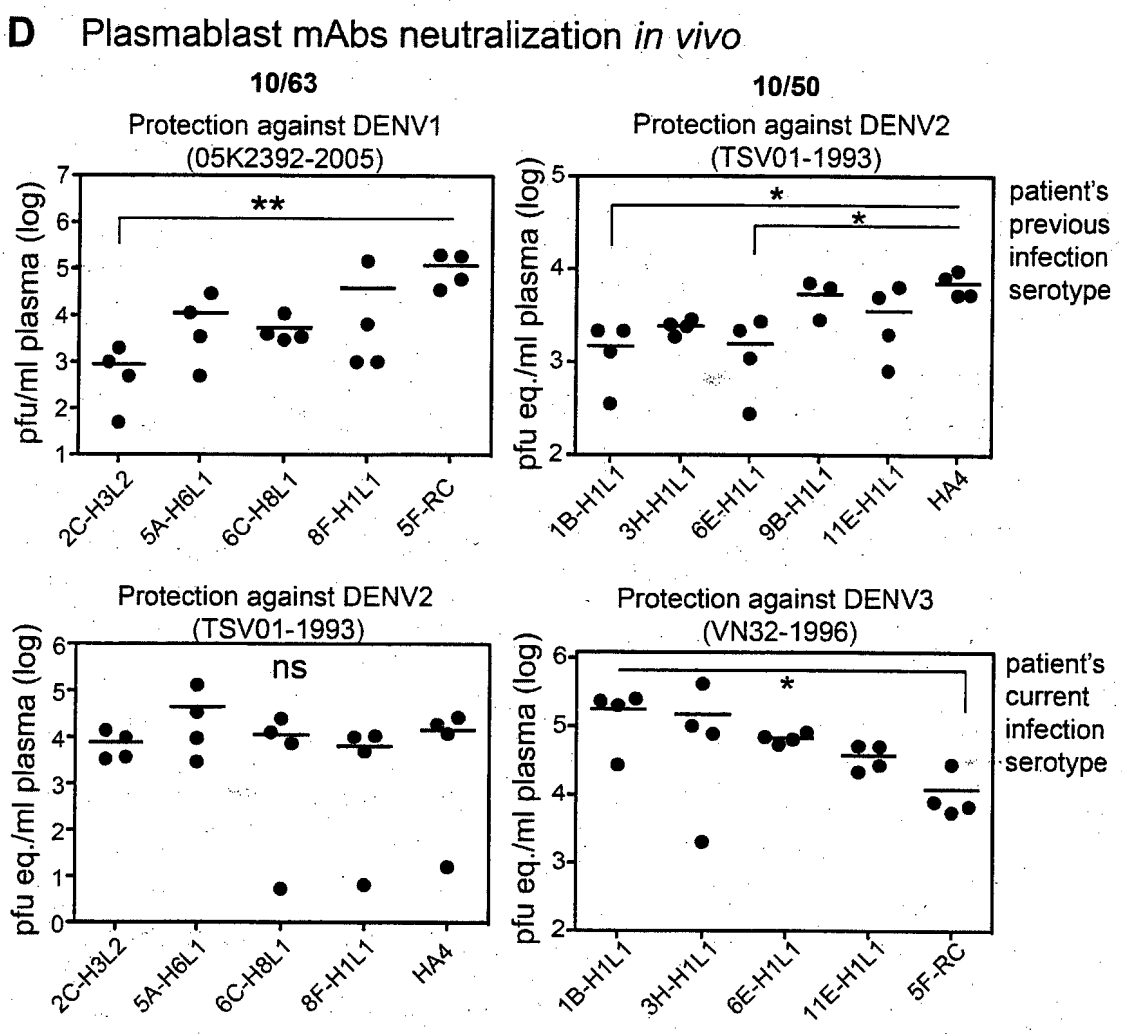


FIGURE TWO (CONTINUED)

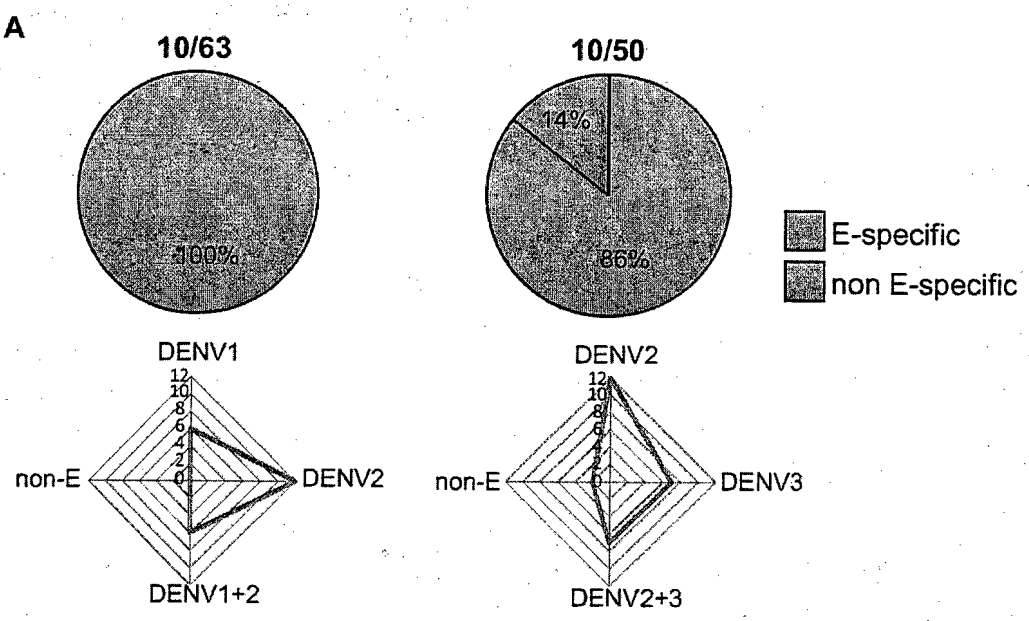


FIGURE THREE

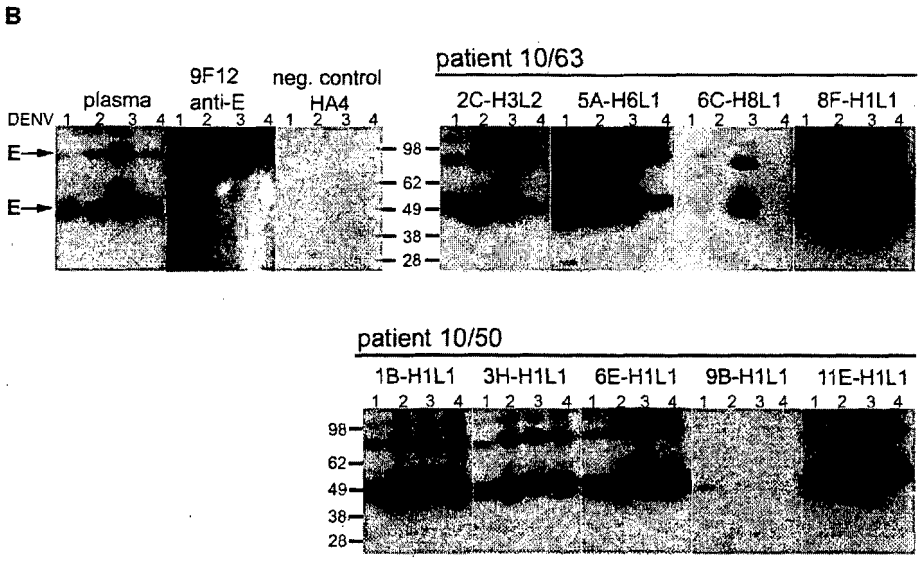


FIGURE THREE (CONTINUED)

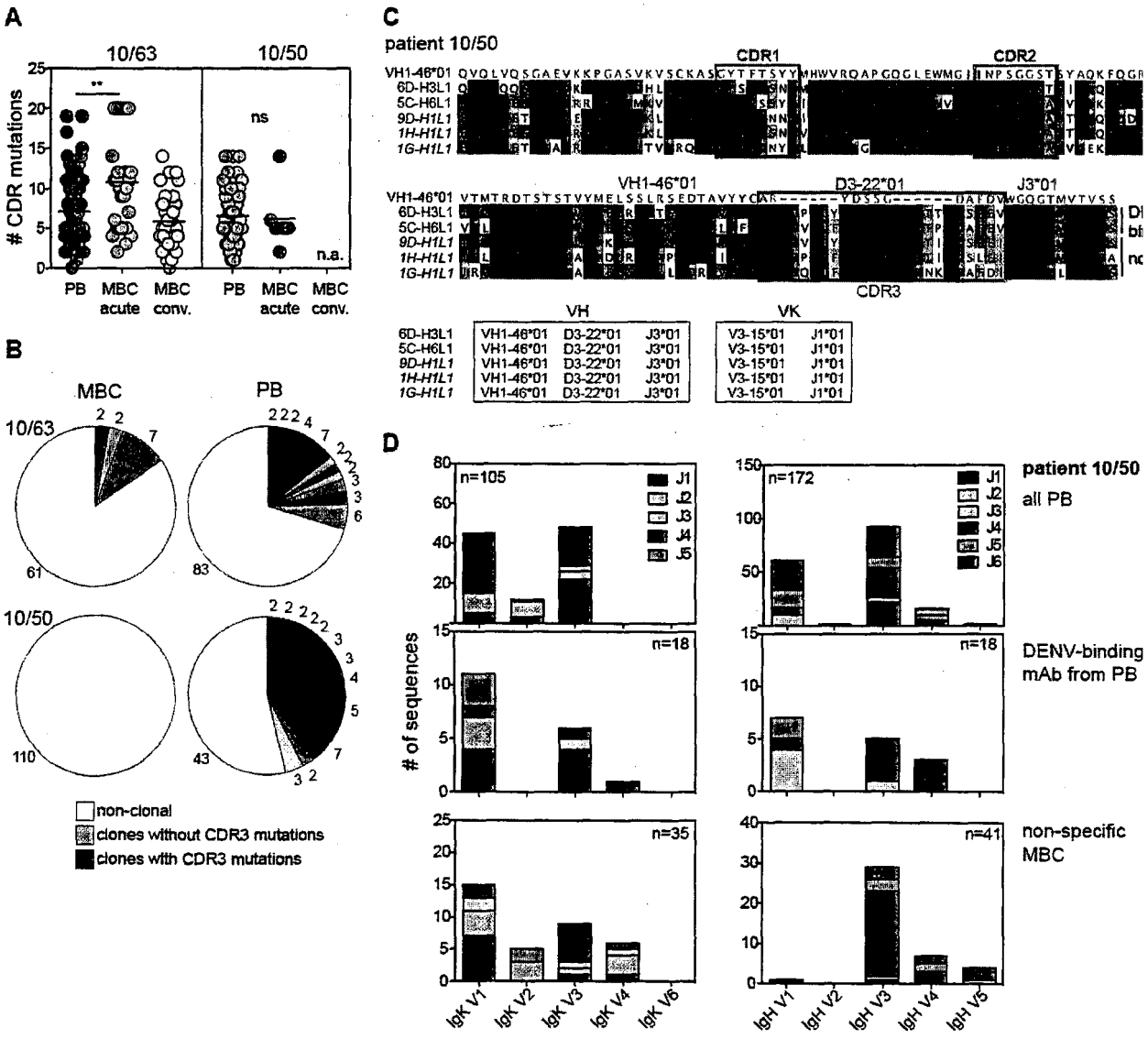


FIGURE FOUR

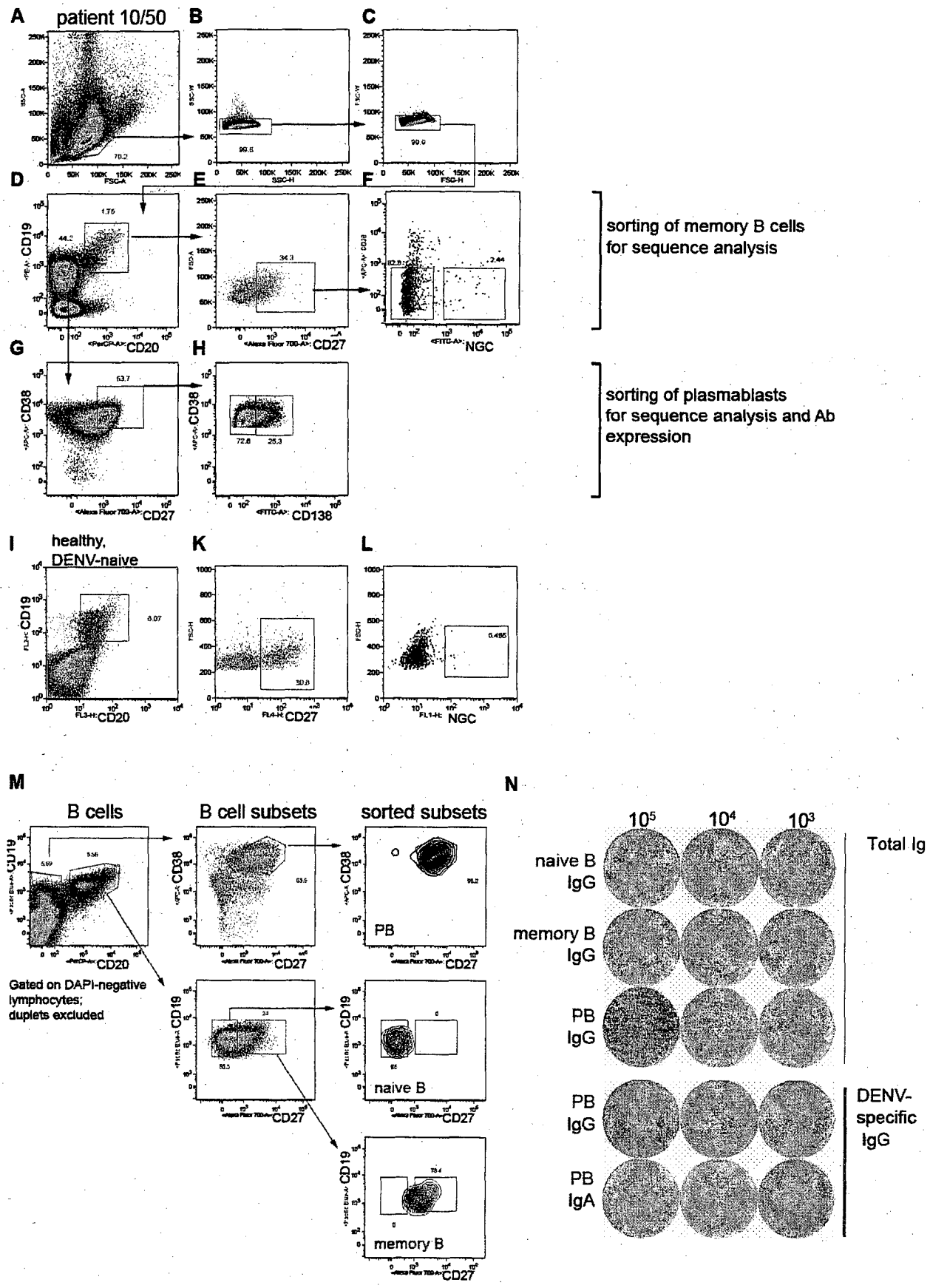

A
patient 10/50
B
C
D
E
F
CD19
CD20
CD27
NGC
sorting of memory B cells
for sequence analysis
G
H
CD38
CD27
CD138
sorting of plasmablasts
for sequence analysis and Ab
expression
I
healthy,
DENV-naive
CD19
CD20
K
CD27
L
NGC
M
B cells
B cell subsets
sorted subsets
CD19
CD20
CD38
CD27
PB
Gated on DAPI-negative
lymphocytes;
duplets excluded
naive B
memory B
N
10^5
10^4
10^3
naive B
IgG
memory B
IgG
PB
IgG
Total Ig
PB
IgG
PB
IgA
DENV-
specific
IgG

FIGURE FIVE

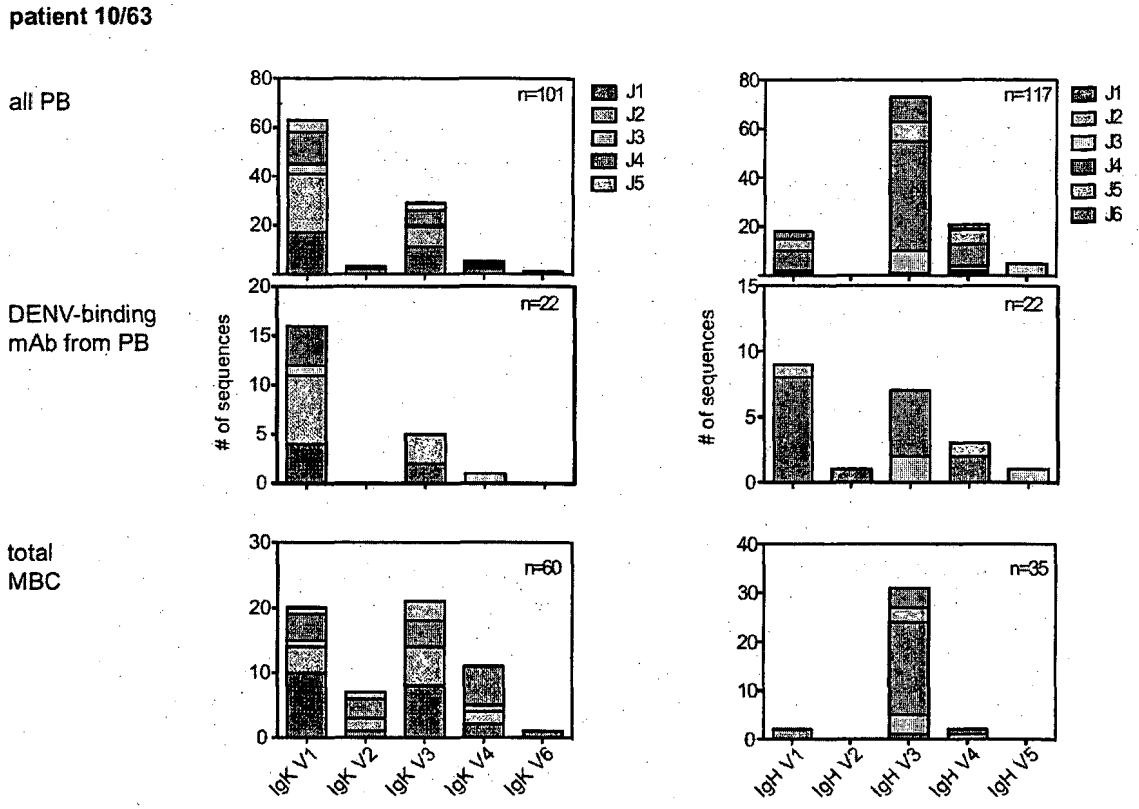


FIGURE SIX

A

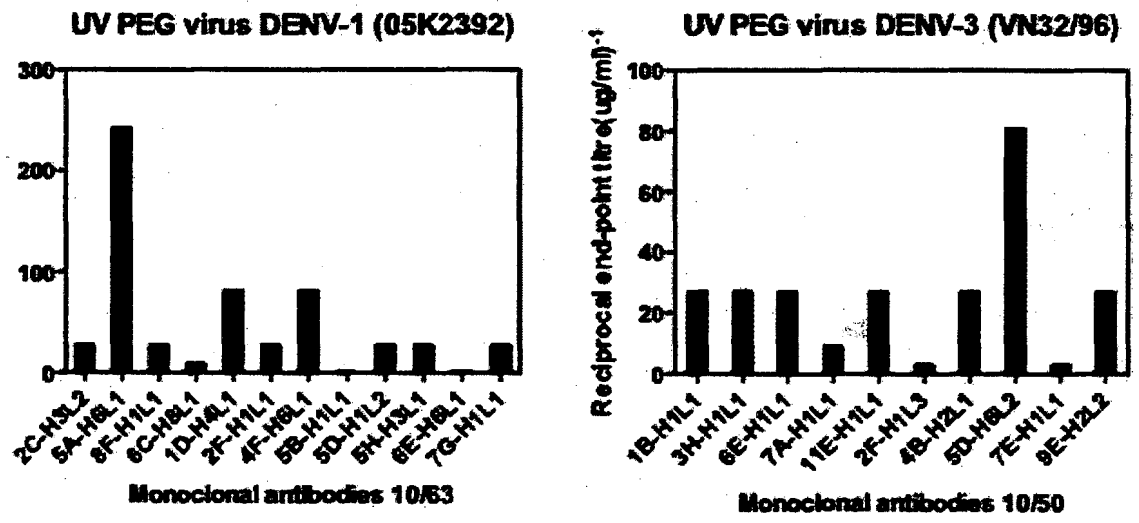


FIGURE SEVEN

B

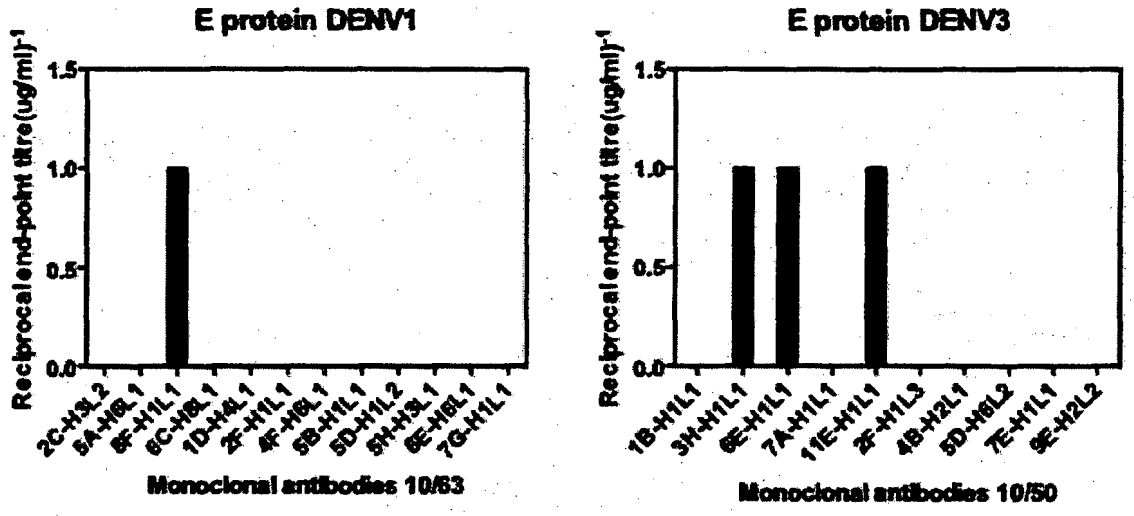


FIGURE SEVEN (CONTINUED)

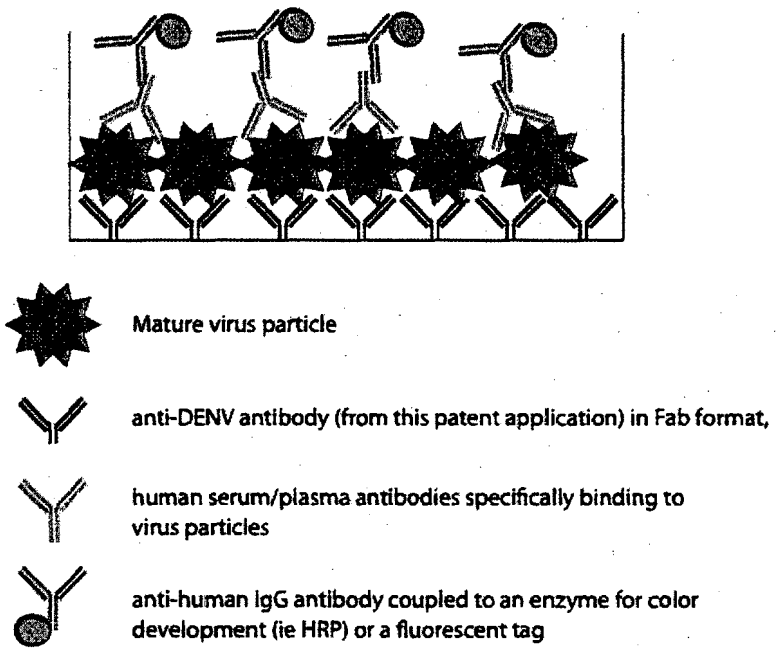


FIGURE EIGHT

A

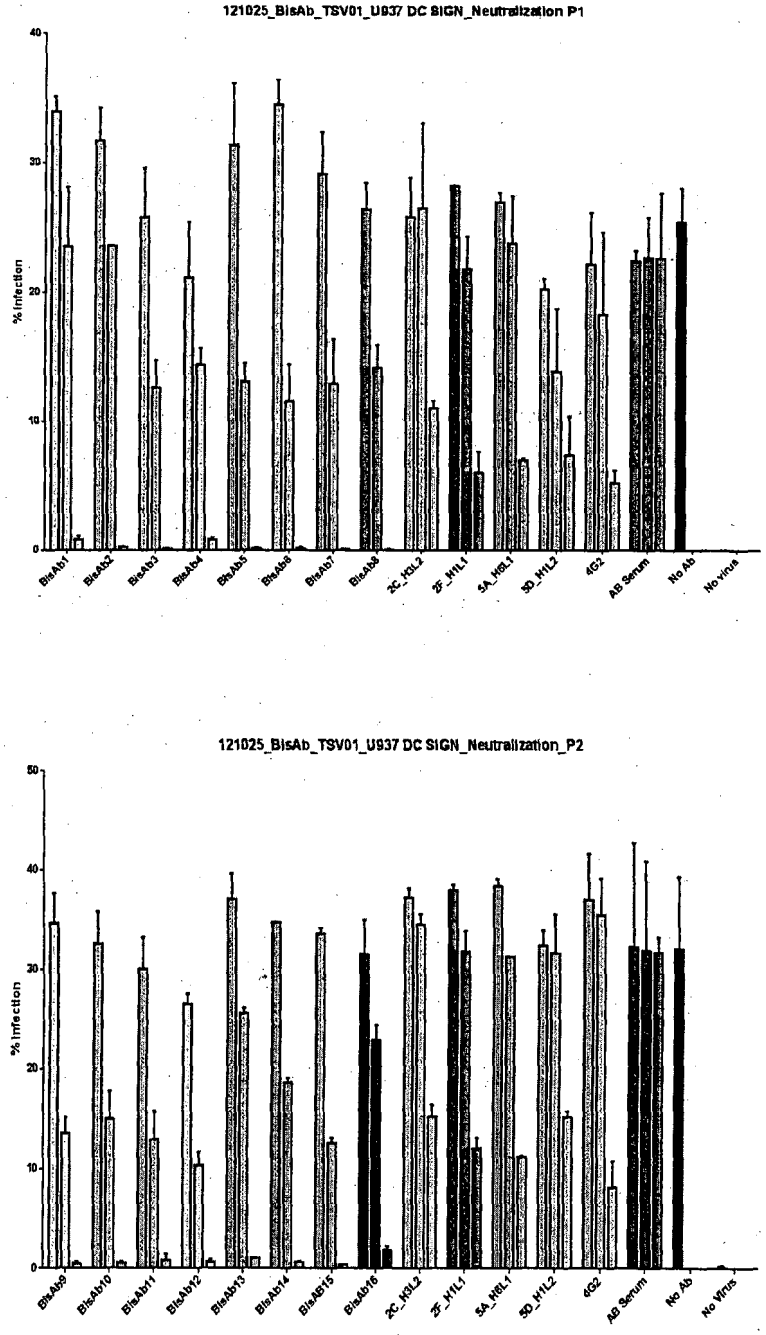
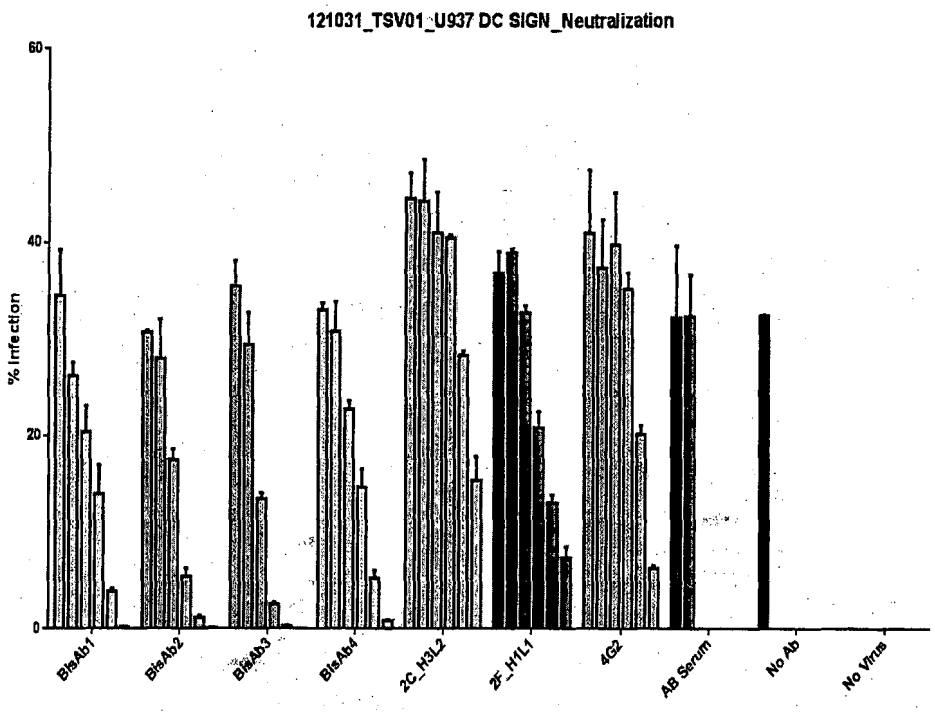


FIGURE NINE

B



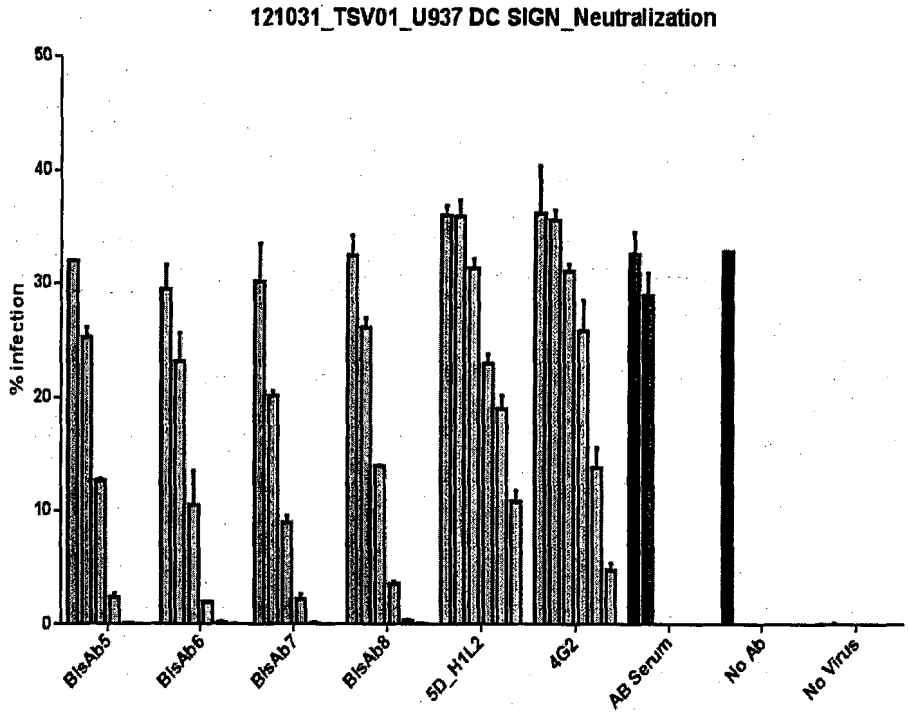


FIGURE NINE (CONTINUED)

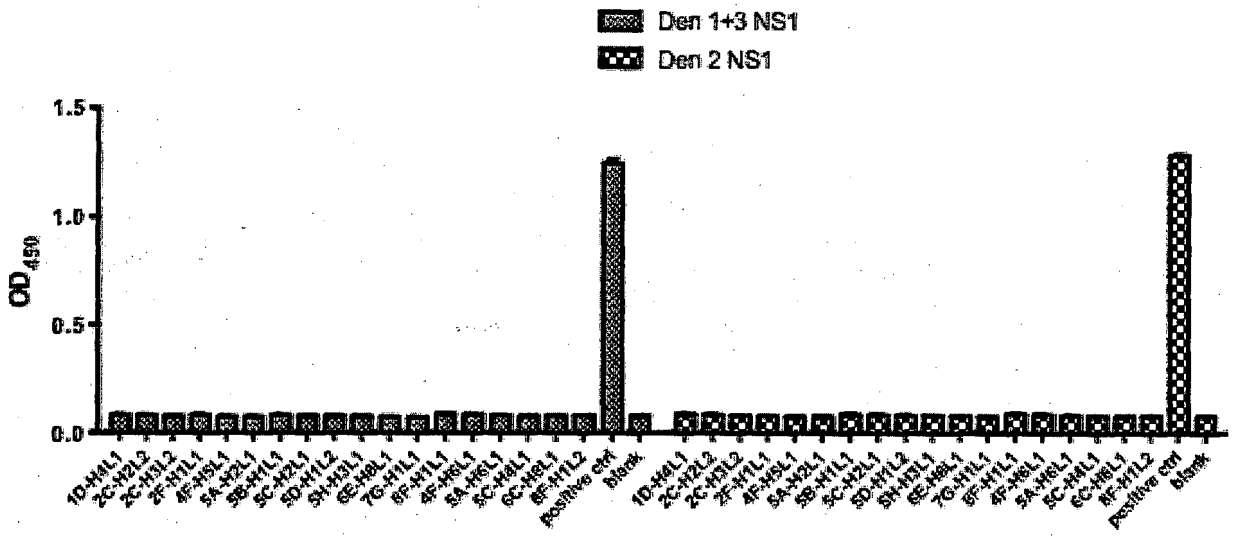
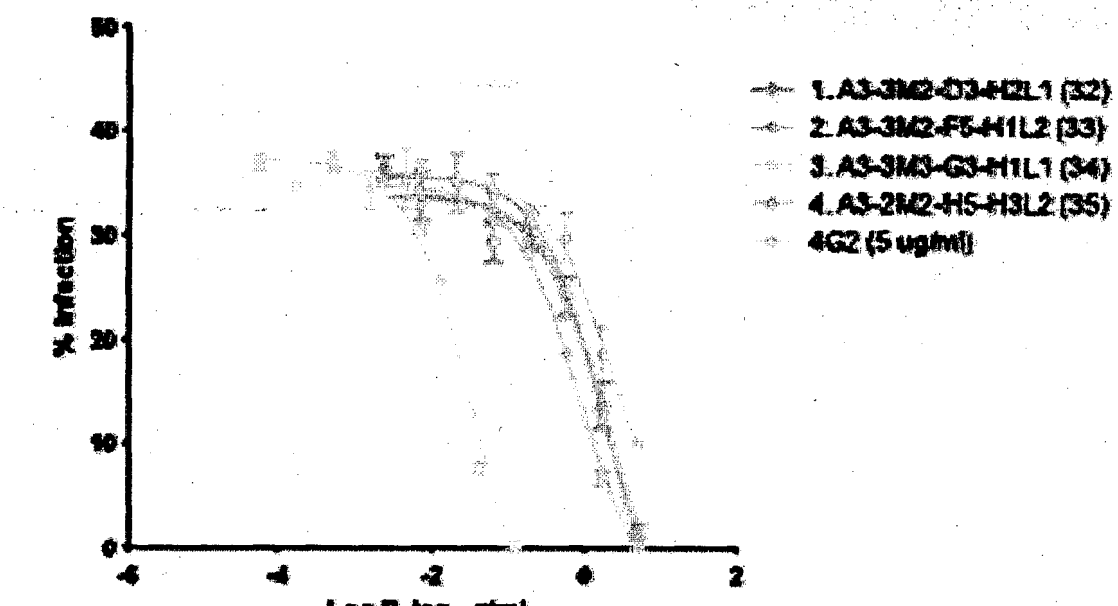


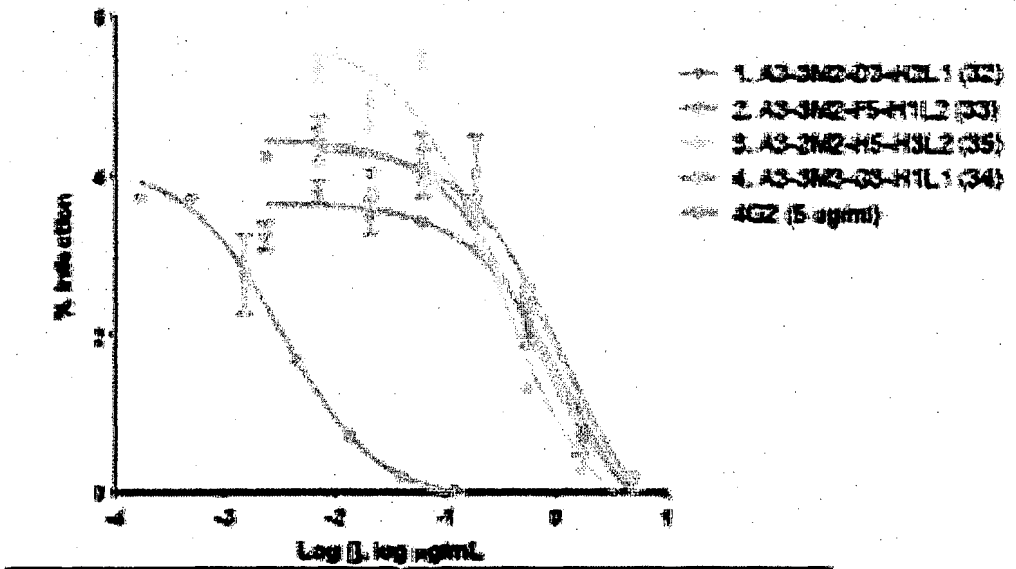
FIGURE TEN



	EC50
1. A3-3M2-D3-H2L1 (32)	1.963
2. A3-3M2-F5-H1L2 (33)	1.951
3. A3-3M3-G3-H1L1 (34)	0.03644
4. A3-2M2-H5-H3L2 (35)	0.8491
4G2 (5 ug/ml)	2.309

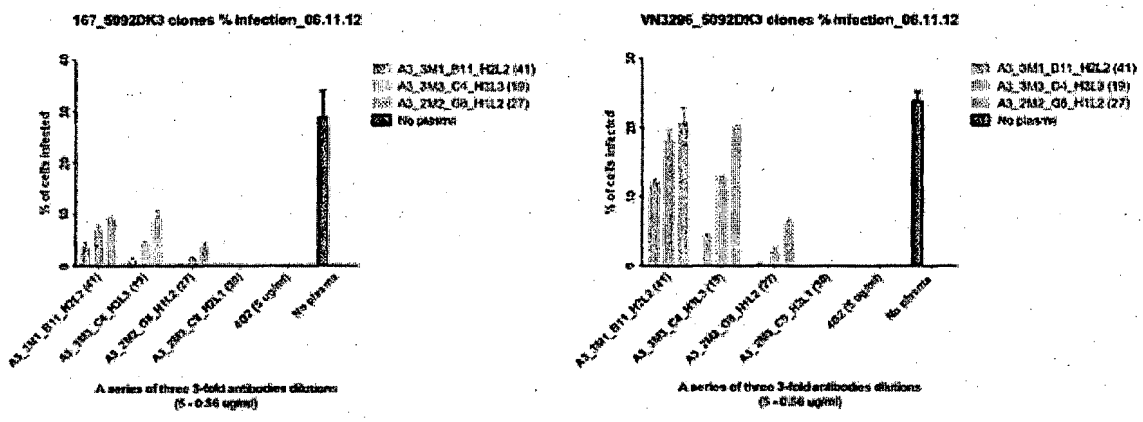
	R square
1. A3-3M2-D3-H2L1 (32)	0.9599
2. A3-3M2-F5-H1L2 (33)	0.9879
3. A3-3M3-G3-H1L1 (34)	0.9956
4. A3-2M2-H5-H3L2 (35)	0.9779
4G2 (5 ug/ml)	0.9467

FIGURE ELEVEN



	IC50		R square
1. A3-3M2-D3-H2L1 (32)	1.164	1. A3-3M2-D3-H2L1 (32)	0.9843
2. A3-3M2-F5-H1L2 (33)	0.6196	2. A3-3M2-F5-H1L2 (33)	0.9763
3. A3-2M2-H5-H3L2 (35)	0.3126	3. A3-3M2-H5-H3L2 (35)	0.9826
4. A3-3M3-G3-H1L1 (34)	0.609301	4. A3-3M3-G3-H1L1 (34)	0.9775
4G2 (5 ug/ml)	1.102	4G2 (5 ug/ml)	0.9576

FIGURE TWELVE



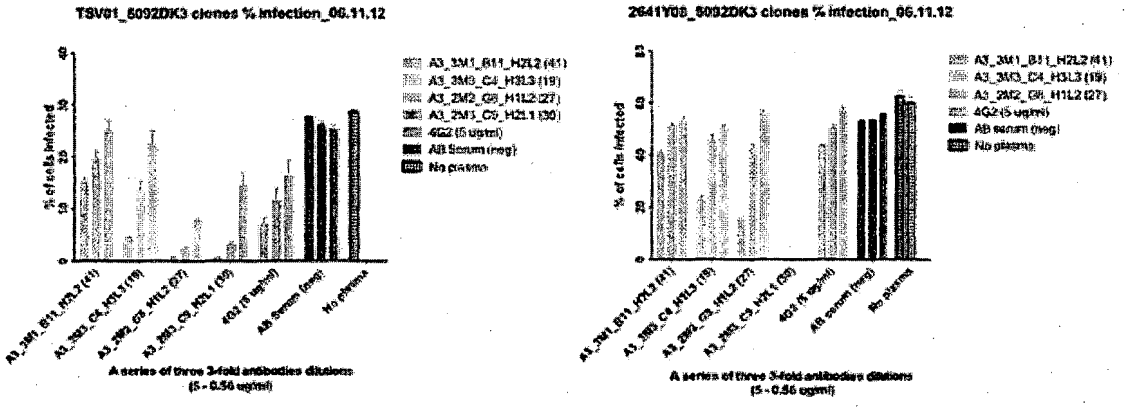


FIGURE THIRTEEN

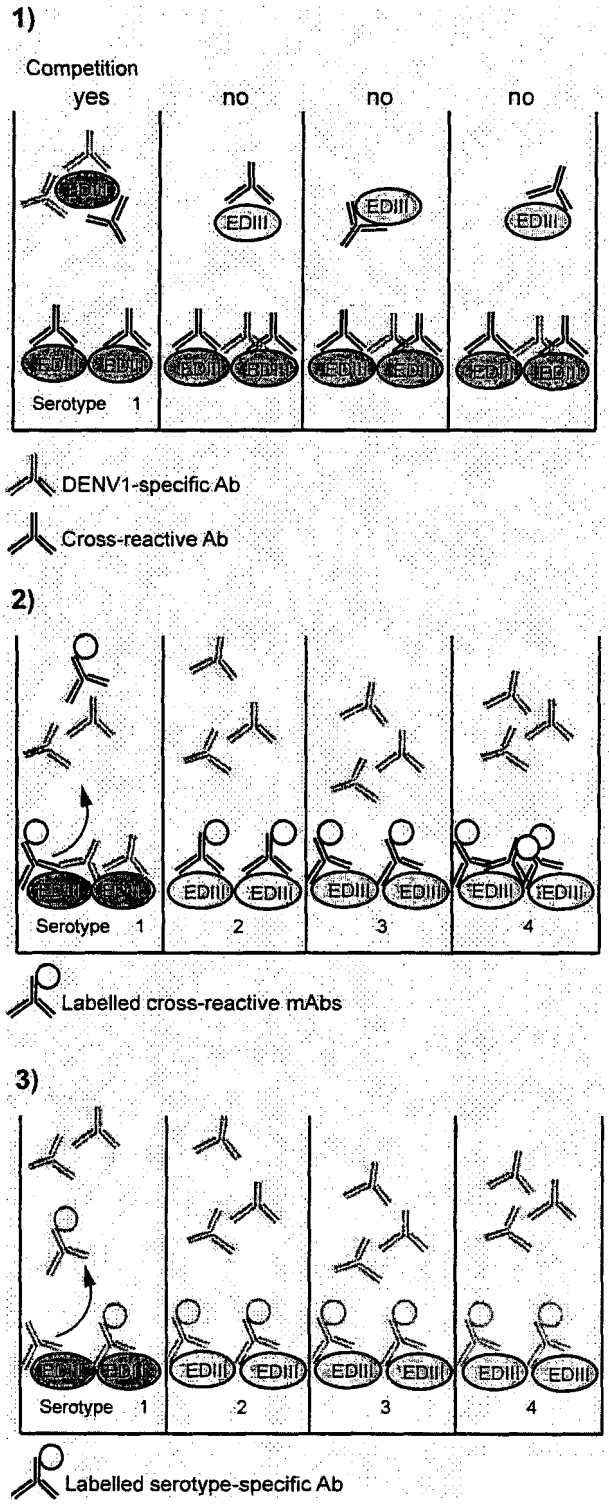


FIGURE FOURTEEN

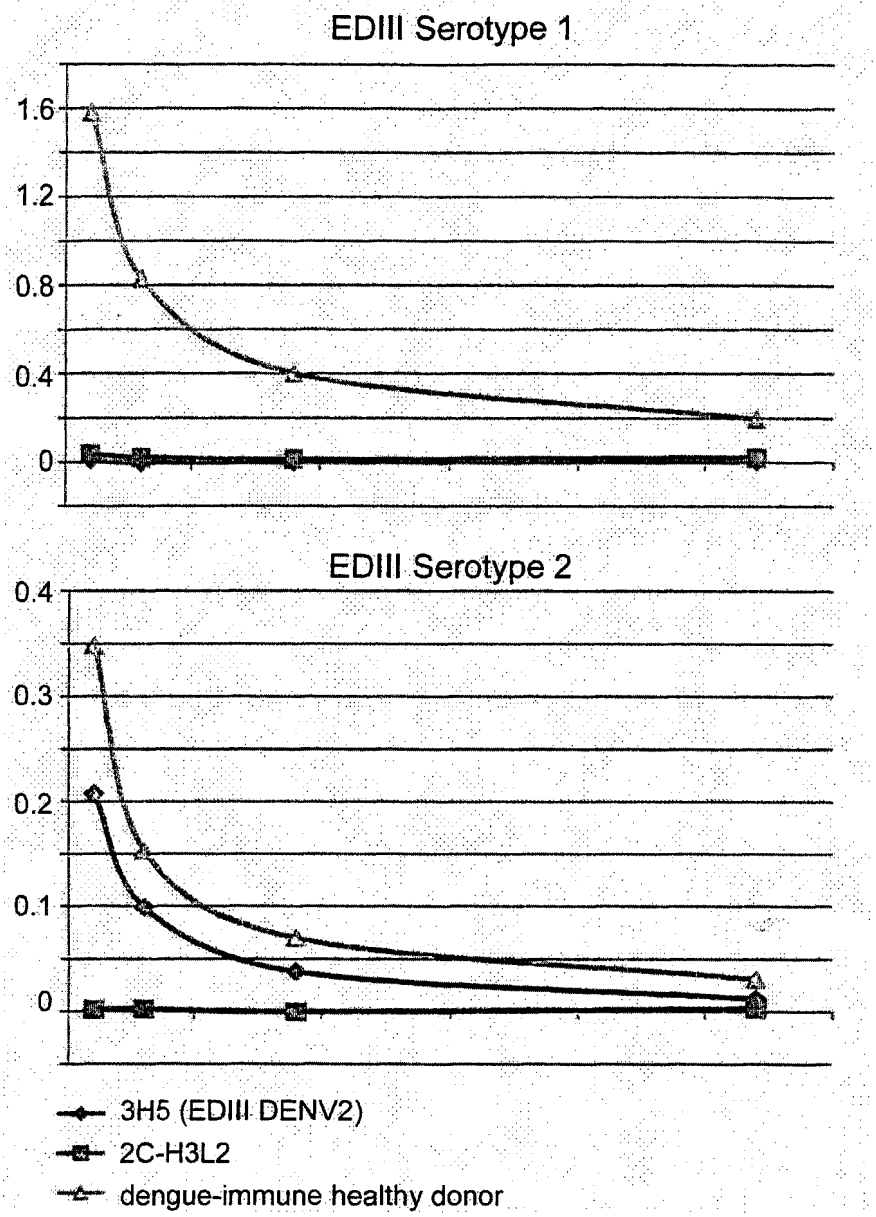


FIGURE FIFTEEN

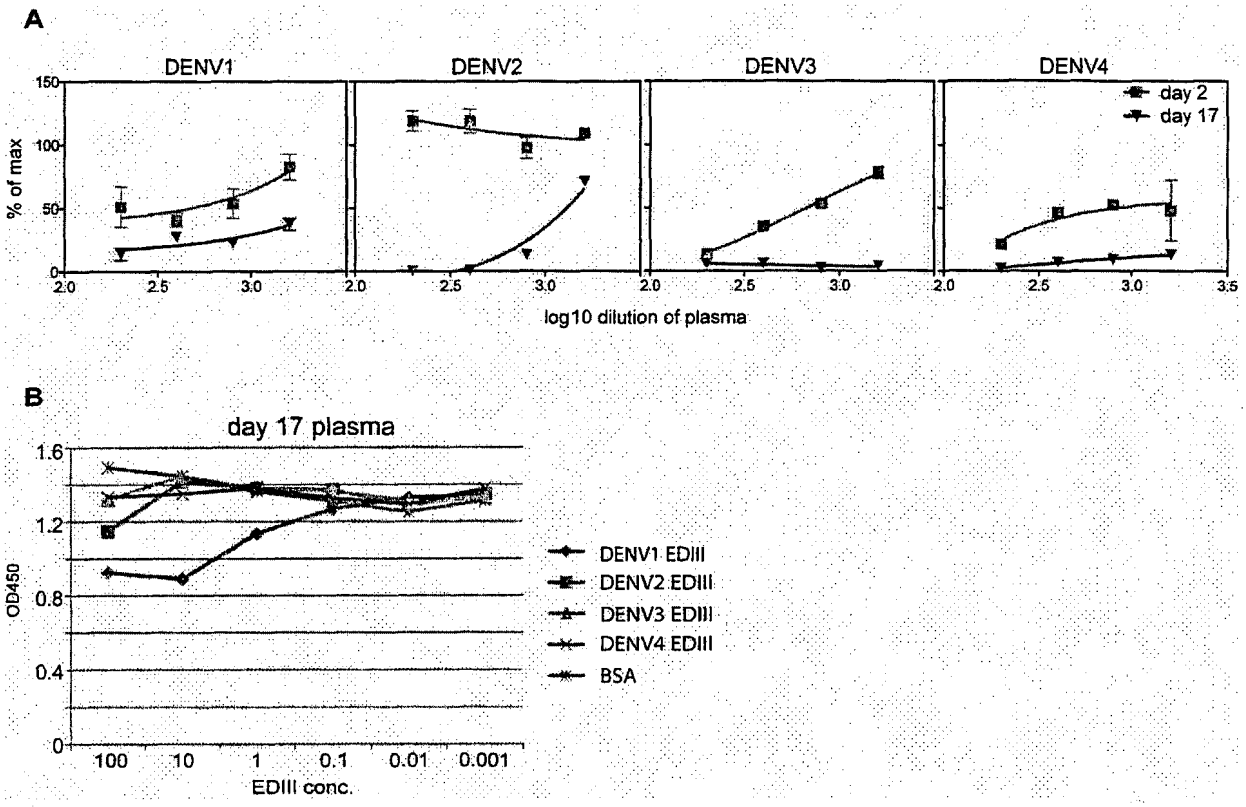


FIGURE SIXTEEN

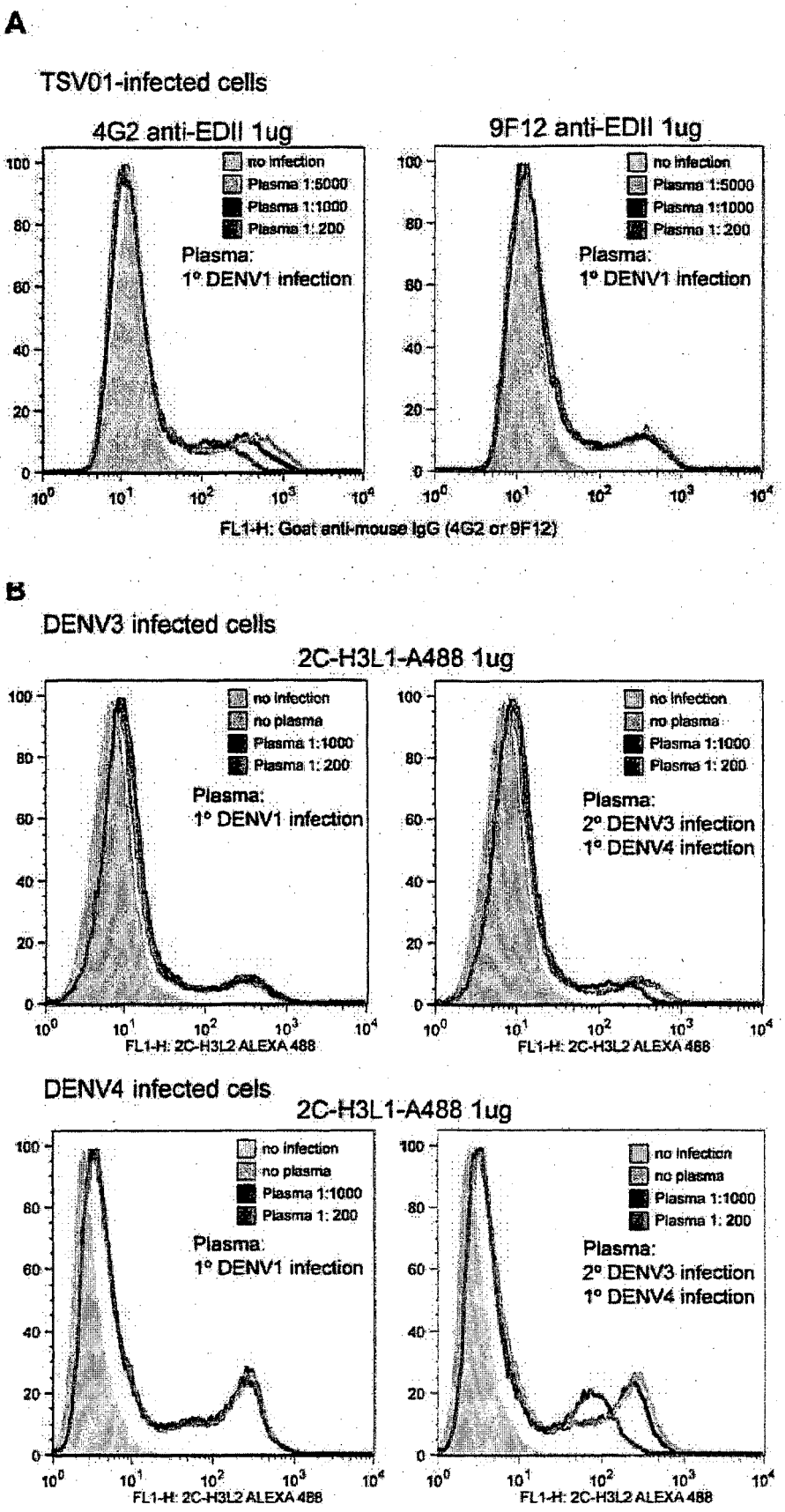


FIGURE SEVENTEEN

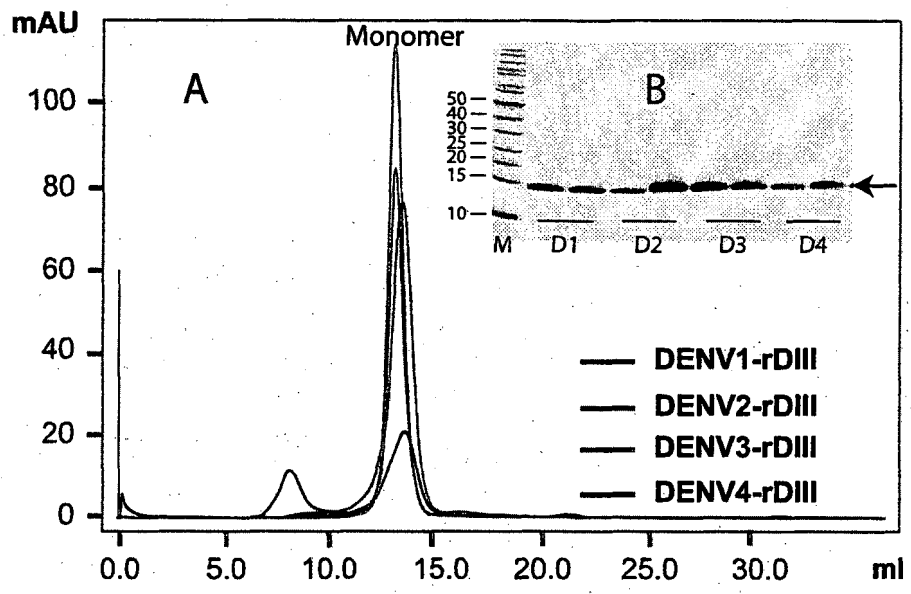


FIGURE EIGHTEEN

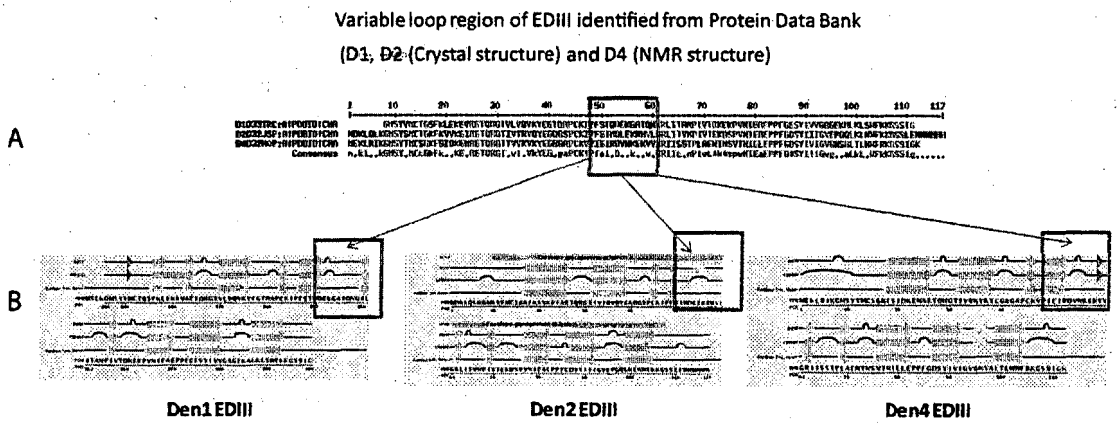


FIGURE NINETEEN

A

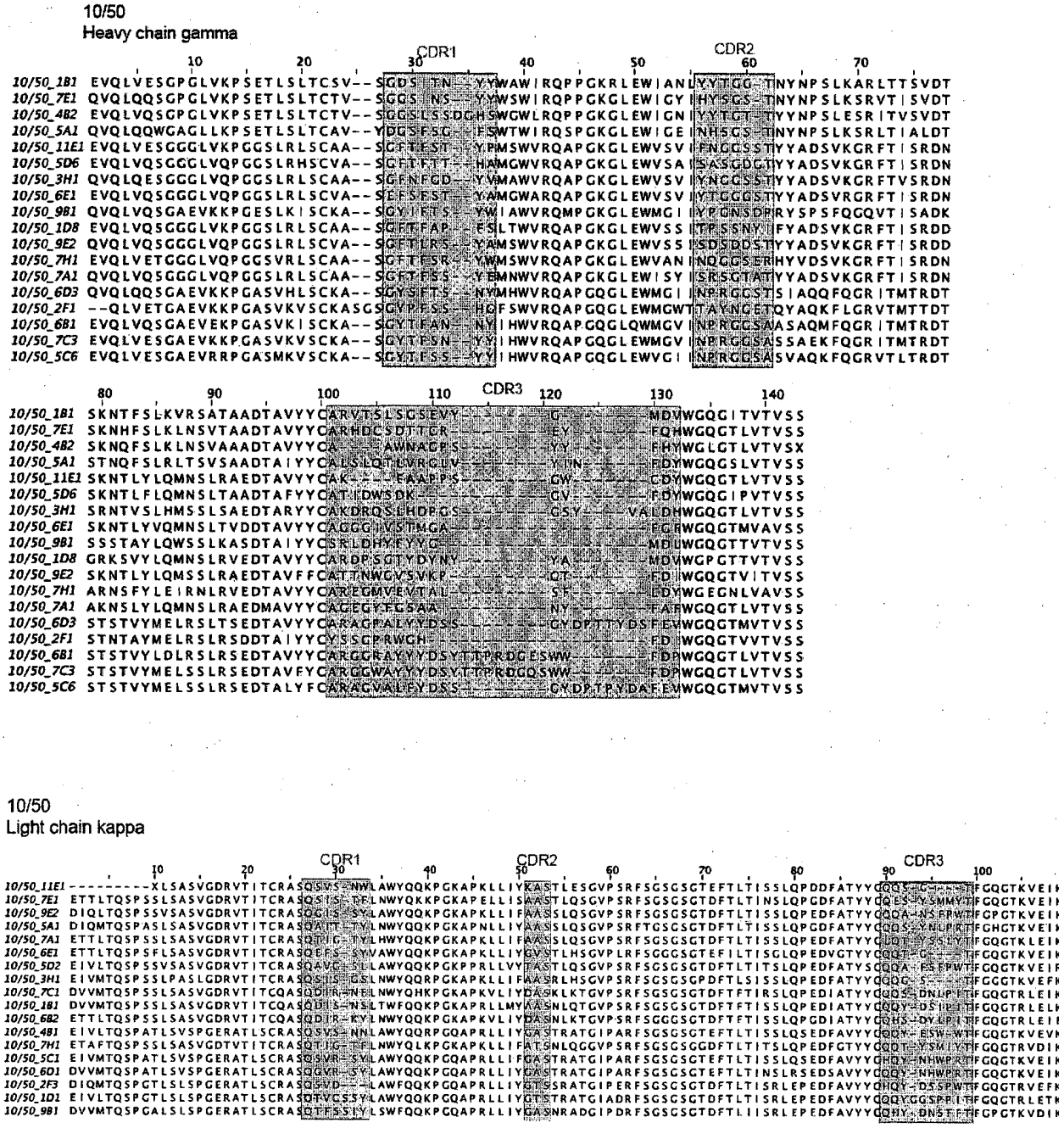


FIGURE TWENTY

B

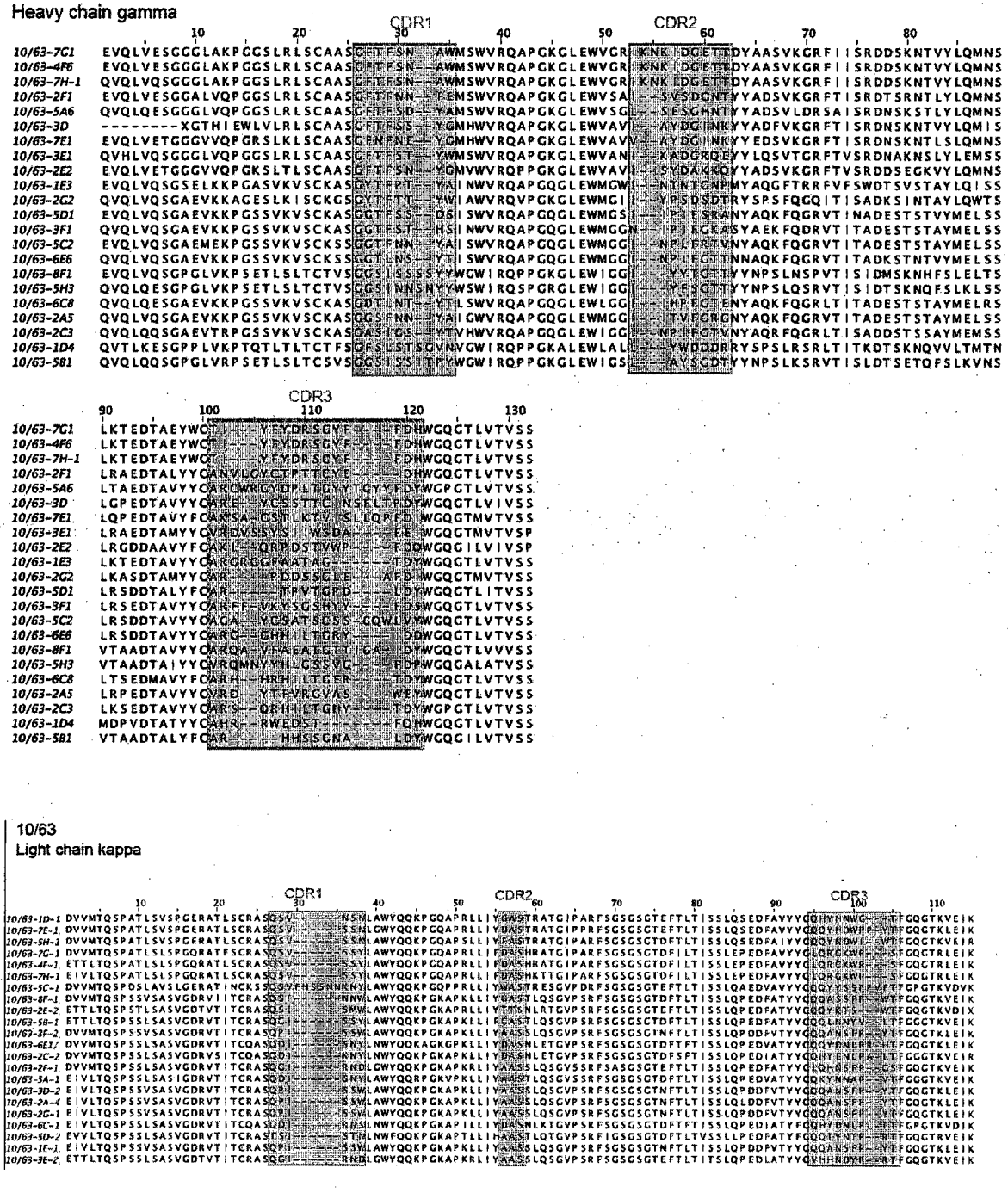
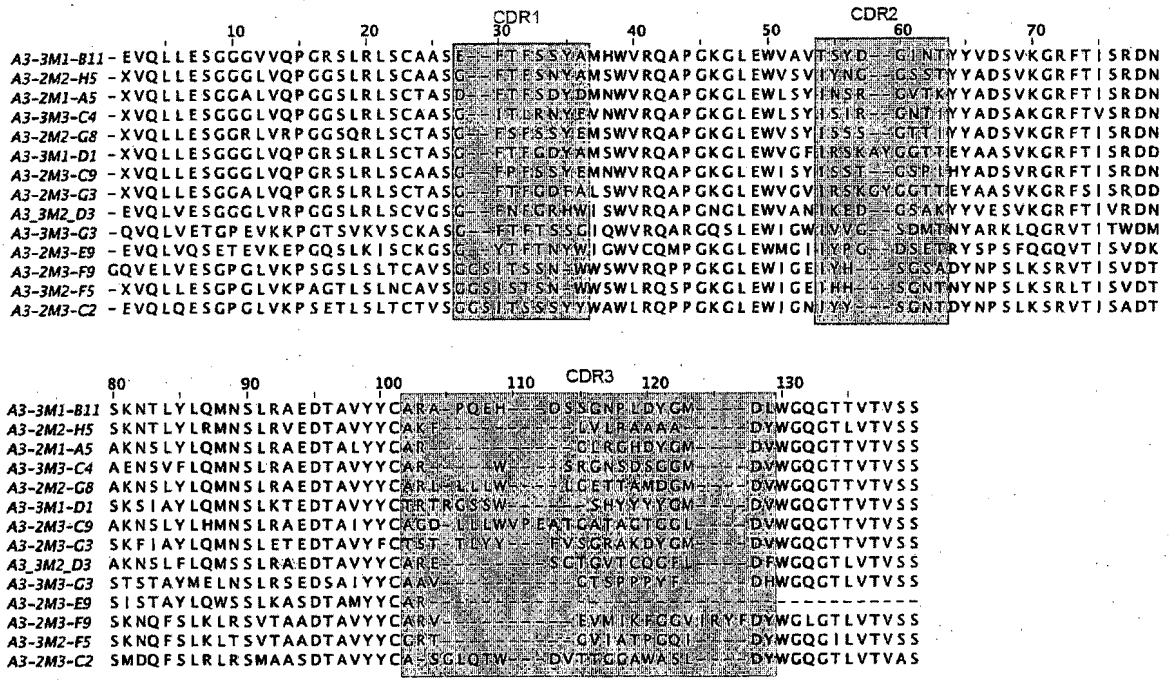


FIGURE TWENTY (CONTINUED)

A

10/50
Memory B cells
Heavy chain gamma



B

10/50
Memory B cells
Light chain kappa

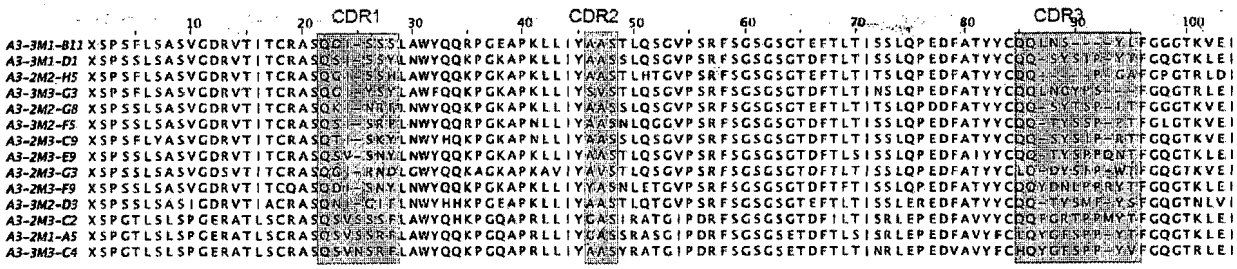


FIGURE TWENTY-ONE

10-50 memory B	Heavy Chain				Light Chain			
Clone ID	Sequence ID	CDR1-IMGT	CDR2-IMGT	CDR3-IMGT	Sequence ID	CDR1-IMGT	CDR2	CDR3-IMGT
A3-3M2-D3-H2L1	A3_3M2_D3_H_2_1146	GFNFGRHW	IKEDGSAK	ARESCTGVTCQGFLDF	A3-3M2-D3_Ck516	QNIGIF	AAS	QQTYSMFYS
A3-2M1-A5-H1L1	A3-2M1-A5_PWCgamma	DFTFSDYD	INSRGVTK	ARGLRGHDYGMDV	A3-2M1-A5_Ck516	QSVSSRF	GAS	LQYGFSPPYT
A3-2M2-G8-H1L2	A3-2M2-G8_PWCgamma	GFSFSSYE	ISSSGTTI	ARLLLLWLGETTAMDGMDV	A3-2M2-G8_Ck516	QKINRF	AAS	QQSYTSPLT
A3-2M2-H5-H3L2	A3-2M2-H5_PWCgamma	GFTFSNYA	IYNGGSST	AKFLVLPAAAADY	A3-2M2-H5_Ck516	QGISSH	AAS	QQPGA
A3-2M3-C2-H3L1	A3-2M3-C2-H-3_1146	GGSITSSSYY	IYYSGNT	ASGLQTWDVTTGGAWASLDY	A3-2M3-C2_Ck516	QSVSSSF	GAS	QQFGRTPPMYT
A3-2M3-C9-H2L1	A3-2M3-C9_PWCgamma	GFPFSSYE	ISSTGSPI	AGDLLLWVPEATGATAGTGGLDV	A3-2M3-C9_Ck516	QTISKY	AAS	QQSYSIPRT
A3-2M3-E9-H1L2	A3-2M3-E9-H-1_Resen	GYTFTNYW	IYPGDSET	ARLKNYYTSGNYVPVGGMDV	A3-2M3-E9_Ck516	QSVSNY	AAS	QQTYSPPQNT
A3-2M3-F9-H2L1	A3-2M3-F9-H-2_1146	GGSITSSNW	IYHSGSA	ARVEVMIKFGGVIRYFDY	A3-2M3-F9_Ck516	QDISNY	YAS	QQYDNLPPRYT
A3-2M3-G3-H2L3	A3-2M3-G3_PWCgamma	GFTFGDFA	IRSKGYGGTT	TSTTLYYFVSGRAKDYGMDV	A3-2M3-G3_Ck516	QGIRND	AVS	LQDYSFPWT
A3-3M1-B11-H1L2	A3-3M1-B11_PWCgamma	EFTFSSYA	TSYDGINT	ARAPQEHDSSGNPLDYGMDL	A3-3M1-B11_Ck516	QGISSS	AAS	QQLNSYL
A3-3M1-D1-H1L3	A3-3M1-D1_PWCgamma	GFTFGDYA	IRSKAYGGTT	TRTRGSSWSHYYYYGMDV	A3-3M1-D1_Ck516	QSISSY	AAS	QQSYSTPYT
A3-3M2-F5-H1L2	A3-3M2-F5_PWCgamma	GGSISTSNW	IHHSGNT	GRTGVIATPGQIDY	A3-3M2-F5_Ck516	QSISRF	AAS	QQTYSSPPT
A3-3M3-C4-H3L3	A3-3M3-C4_PWCgamma	GITLRNYE	ISIRGNTI	ARWSRGNSDSGGMDV	A3-3M3-C4_Ck516	QSVNSRF	AAS	HQYGFSPPYV
A3-3M3-G3-H1L1	A3-3M3-G3_PWCgamma	GFTFTSSG	IVVGSDMT	AAVGTSPPPYFDH	A3-3M3-G3_Ck516	QGIYSY	SVS	QQLNGYPS

FIGURE TWENTY-TWO

FIGURE TWENTY-TWO (continued)

10-63 plasmablast		Heavy Chain				Light Chain			
Clone ID		**Sequence ID**	**CDR1-IMGT**	**CDR2-IMGT**	**CDR3-IMGT**	**Sequence ID**	**CDR1-IMGT**	**CDR2-IMGT**	**CDR3-IMGT**
10/63	**1D-H4L1**	10/63_1D4_001.ab1	GFSLSTSGVN	LYWDDDR	AHRRWEDSTFQH	10/63_1D-1_055	QSV.....NSN	GA.....S	QHYHNWGT
10/63	1E-H3L1	10/63_1E3_061	GYTFPTYA	INTNTGNP	ARGRGGFAATAGTDY	10/63_1E-1_053	QPI.....SSW	AA.....S	QQANSFPYT
10/63	2A-H5L4	10/63_2A5_014	GGSFNNYA	IITVFGRG	VRDYTFVRGVASWEY	10/63_2A-4_049	QPI.....SSW	AA.....S	QQANSFPYT
10/63	**2C-H3L2**	10/63_2C3_006.ab1	GASIGSYT	INPIFGTV	ARSQRHILTGHYTDY	10/63_2C-2_058	QDI.....KNY	DA.....S	QHYENLPALT
10/63	2E-H2L2	10/63_2E2_004	GFTFSNYG	ISYDAKKQ	AKLQRPDSTVWPFDQ	10/63_2E-2_050	QSI.....SMW	TT.....S	QQYKTSWT
10/63	**2F-H1L1**	10/63_2F1_031	GFTFNNFE	ISVSDGNT	ANVLGYCTPTTCYEDH	10/63_2F1_059	QGI.....RND	AA.....S	LQHNSFPGS
10/63	2G-H2L1	10/63_2G2_027.ab1	GYTFTTYW	IYPSDSDT	ARPDDSSGLEAFDI	10/63_2G-1_079.ab1	QPI.....SSW	AA.....S	QQANSFPYT
10/63	3D-H2L2	10/63_3D	GFTF....SSYG	IAYD..GINK	AREYCSSTTCINSFLTPDY	10/63_3D-2_071.ab1	QPI.....SSW	AA.....S	QQANSFPYT
10/63	3E-H1L2	10/63_3E1_030	GFTFSTYW	IKADGRQE	VRDVSSYSIIWSDAFEI	10/63_3E-2_069	QGI.....RND	AA.....S	VHHNDYPRT
10/63	3F-H1L2	10/63_3F1_026	GGTFSTHS	NIPIFGKA	ARFFVKYSGSHYYFDS	10/63_3F-2_065	QPI.....SSW	AA.....S	QQANSFPYT
10/63	**4F-H6L1**	10/63_4F6_020.ab1	GFTFSNAW	IKNKIDGETT	TIYFYDRSGYFFDH	10/63_4F-1_076	QSV.....SSY	DA.....S	LQRGKWPS
10/63	**5A-H6L1**	10/63_5A6_045.ab1	GFTFSDYA	LSESGHNT	ARCWRGYDPLTGYYTGYYFDY	10/63_5A-1_074	QDI.....SNY	AA.....S	QKYNNAPVT
10/63	**5B-H1L1**	10/63_5B1_043	GGSISSITPY	LAYSGDT	ARHHSSGNALDY	10/63_5B1_053	QGI.....SSY	GA.....S	QQLNNYVLT
10/63	5C-H2L1	10/63_5C2_041	GGTFNNYA	INPLFRTV	AGAYCSATSCSSGQWLVY	10/63_5C1_049.ab1	QSVFHSSNNKNY	WA.....S	QQYYSSPPVFT
10/63	**5D-H1L2**	10/63_5D1_037	GGTFSSDS	IIPIFSRA	ARTPVTGPDLDY	10/63_5D-2_070.ab1	ESI.....STN	AA.....S	QQTYNTPRT
10/63	**5H-H3L1**	10/63_5H3_044	GGSINNSNYY	IYFSGTT	VRQMNYYHLGSSVGFDP	10/63_5H-1_095	QSV.....SSN	EA.....S	QQYNDWLWT

10/63	**6C-H8L1**	10/63_6C8_036	GDTLNTYT	IIHPFGTE	ARHHRHILTGERTDY		10/63_6C-1_091	QDI.....RNS	DA.....S	QHYDNLPL FL
10/63	**6E-H6L1**	10/63_6E6_034	GGTLNSY T	INPIFGTT	ARGGHHILTGRYIDD		10/63_6E1_058	QDI.....SNY	DA.....S	QQYDNLPR HT
10/63	7E-H1L1	10/63_7E1_061	GFNFNEY G	VAYDGIN K	AKSAGSTLKTVISLLQP FDI		10/63_7E-1_087	QSV.....SSN	DA.....S	QQYHDWP PYT
10/63	**7G-H1L1**	10/63_7G1_05 5	GFTFSNA W	IKNKIDG ETT	TIYFYDRSGYFFDH		10/63_7G-1_081	QSV.....SSY	DA.....S	LQRGKWP S
10/63	7H-H1L1	10/63_7H-1_060	GFTFSNA W	IKNKIDG ETT	TIYFYDRSGYFFDH		10/63_7H-1_038	QSV.....SSY	DA.....S	LQRGKWP S
10/63	**8F-H1L1**	10/63_8F1_051	GGSISSS SYY	IYYTGTT	ARQAVFAEATGTTIGAI DY		10/63_8F-1_036	QSF.....NN W	GA.....S	QQASSFP WT

FIGURE TWENTY-TWO (continued)

FIGURE TWENTY-TWO (continued)

10-50 plasmablast		Heavy Chain					Light Chain			
Clone ID		**Sequence ID**	**CDR1-IMGT**	**CDR2-IMGT**	**CDR3-IMGT**		**Sequence ID**	**CDR1-IMGT**	**CDR2-IMGT**	**CDR3-IMGT**
10/50	**11E-H1L1**	10/50_11E1	GFTF...STYP	IFNG..GSST	AKFAAPPSGWCDY		10/50_11E1	QSV.....SNW	KA.....S	QQSGT
10/50	**1B-H1L1**	10/50_1B1	GDSI...TNYY	LYYT..GGT	ARVTSLSGSEVYGMDV		10/50_1B1	QDI.....SNS	AA.....S	QQYDSIPIT
10/50	1D-H8L1	10/50_1D8	GFTF...APFS	ITPS..SNYI	ARDPSGTYDYNYYAMDV		10/50_1D1	QTVG....SSY	GT.....S	QQYGGSPPIT
10/50	**2F-H1L3**	10/50_2F1	GYPF...SSHG	TTAY..NGET	YSSGPRWGHFDI		10/50_2F3	ASQ.....SVD	GT.....S	HQYDSSPWT
10/50	**3H-H1L1**	10/50_3H1	GFNF...GDYV	IYNG..GSST	AKDRQSLHDPGSGSYVALDH		10/50_3H1	QSI.....SGS	AA.....S	QQGSY
10/50	**4B-H2L1**	10/50_4B2	GGSLS..SDGHS	IYYT...GTT	AAWNAGPSYYFHY		10/50_4B1	QSV.....SNN	GA.....S	QQYESWWT
10/50	5A-H1L1	10/50_5A1	DGSF...SGFS	INHS..GST	ALSLQTLVRGLVYINFDY		10/50_5A1	QAI.....TTY	AA.....S	QQSYNLPRT
10/50	5C-H6L1	10/50_5C6	GYTF...SSYY	INPR..GGSA	ARAGVAVFYDSSGYDPTPYDAFEV		10/50_5C1	QSV.....RSY	GA.....S	HQYNHWPRT
10/50	**5D-H6L2**	10/50_5D6	GFTF...TTHA	ISAS..GDGT	ATIDWSDKGVFDY		10/50_5D2	QAV.....GSL	TA.....S	QQAFSFPWT
10/50	6B-H1L2	10/50_6B1	GYTF...ANNY	INPR..GGSA	ARGGRAYYYDSYTTPRDGESWWFDP		10/50_6B2	QDI.....RKY	DA.....S	QHSDYLPIT
10/50	6D-H3L1	10/50_6D3	GYSF...TSNY	INPR..GGST	ARAGPALYYDSSGYDPTTYDSFEV		10/50_6D1	QGV.....RSY	GA.....S	QQYNHWPRT
10/50	**6E-H1L1**	10/50_6E1	EFSF...STYA	IYTG..GGST	AGGGIVSTMGAFGF		10/50_6E1	QEF.....SSY	GV.....S	QQTGT
10/50	**7A-H1L1**	10/50_7A1	GFTF...SSYE	ISRS..GTAT	AGEGYFGSAAINYFAF		10/50_7A1	QTI.....GTY	AA.....S	LQTYSSLYT
10/50	7C-H3L1	10/50_7C3	GYTF...SNYY	INPR..GGSA	ARGGWAYYYDSYTTPRDGQSWWFDP		10/50_7C1	QDI.....RNF	DA.....S	QQSDNLPIT
10/50	**7E-H1L1**	10/50_7E1	GGSI...NSYY	IHYS..GST	ARHDCSDTTCREYFQH		10/50_7E1	QSI.....STF	AA.....S	QESYSMMYT
10/50	7H-H1L1	10/50_7H1	GFTF...SRYW	INQG..GSER	AREGMVEVTALSFLDY		10/50_7H1	QTI.....GTF	AT.....S	QQTYSMIYT

10/50	9B-H1L1	10/50_9B1	GYIF....TSY W	IYPG..NSD P	SRLDHYFYYGMDL	10/50_9B1	QTFS....SI Y	GA.....S T	QHYDNSFF T
10/50	9E-H2L2	10/50_9E2	GFTL....RSY A	ISDS..DD ST	ATTNWGVSVKPGTFDI	10/50_9E2	QGI.....SS Y	AA.....S WT	QQANSFP WT

FIGURE TWENTY-TWO (continued)