

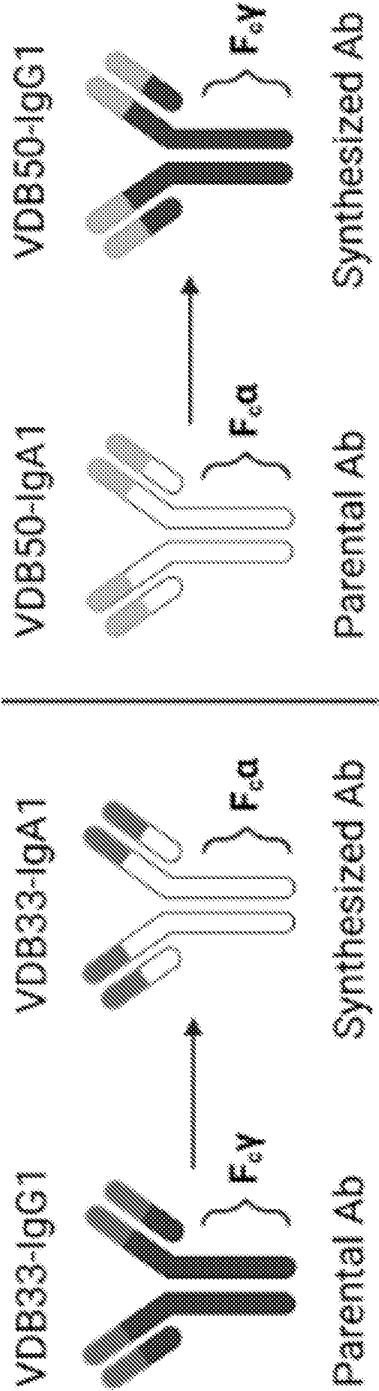


FIG. 1A

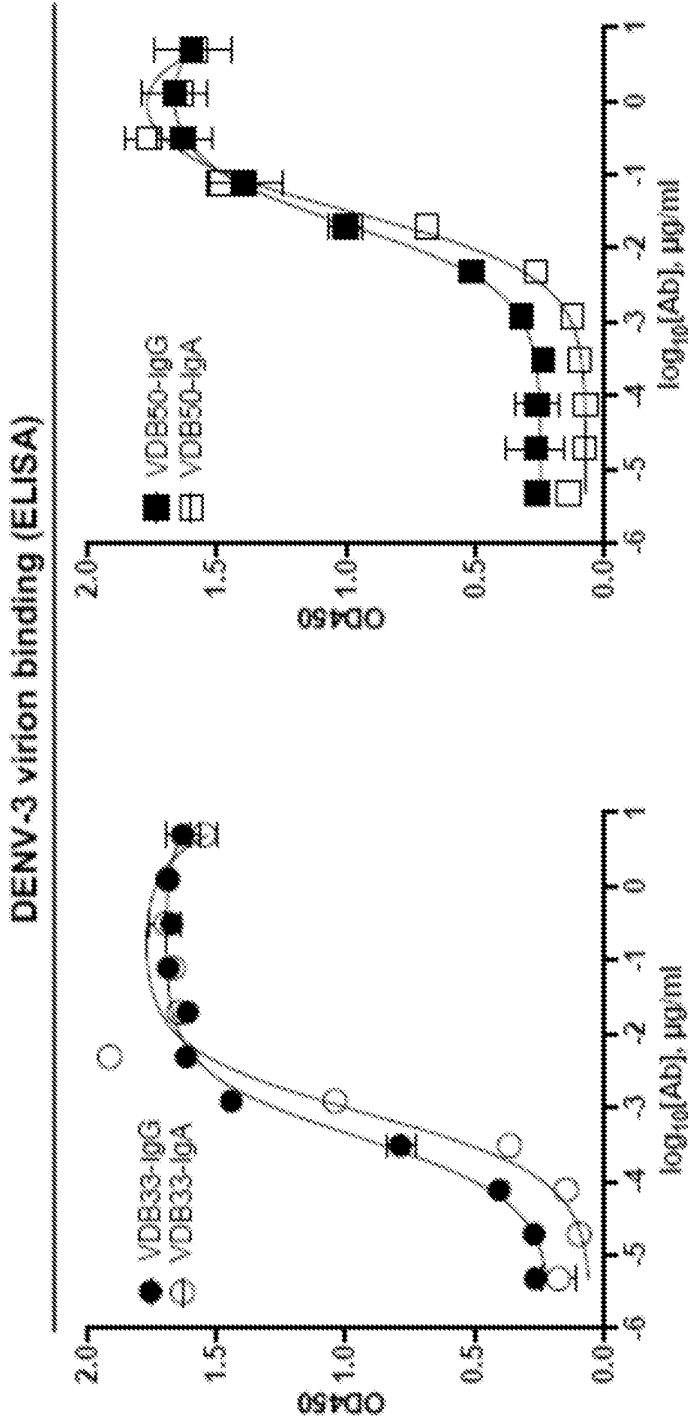


FIG. 1B

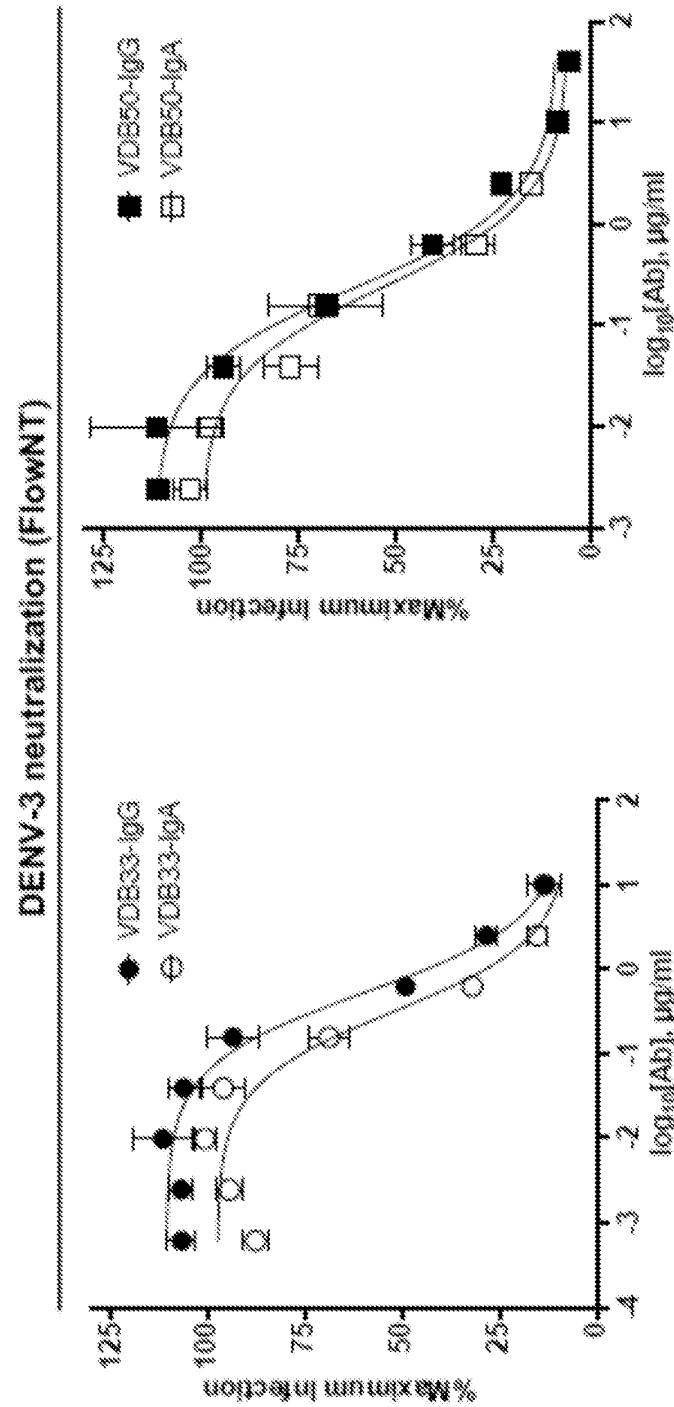


FIG. 1C

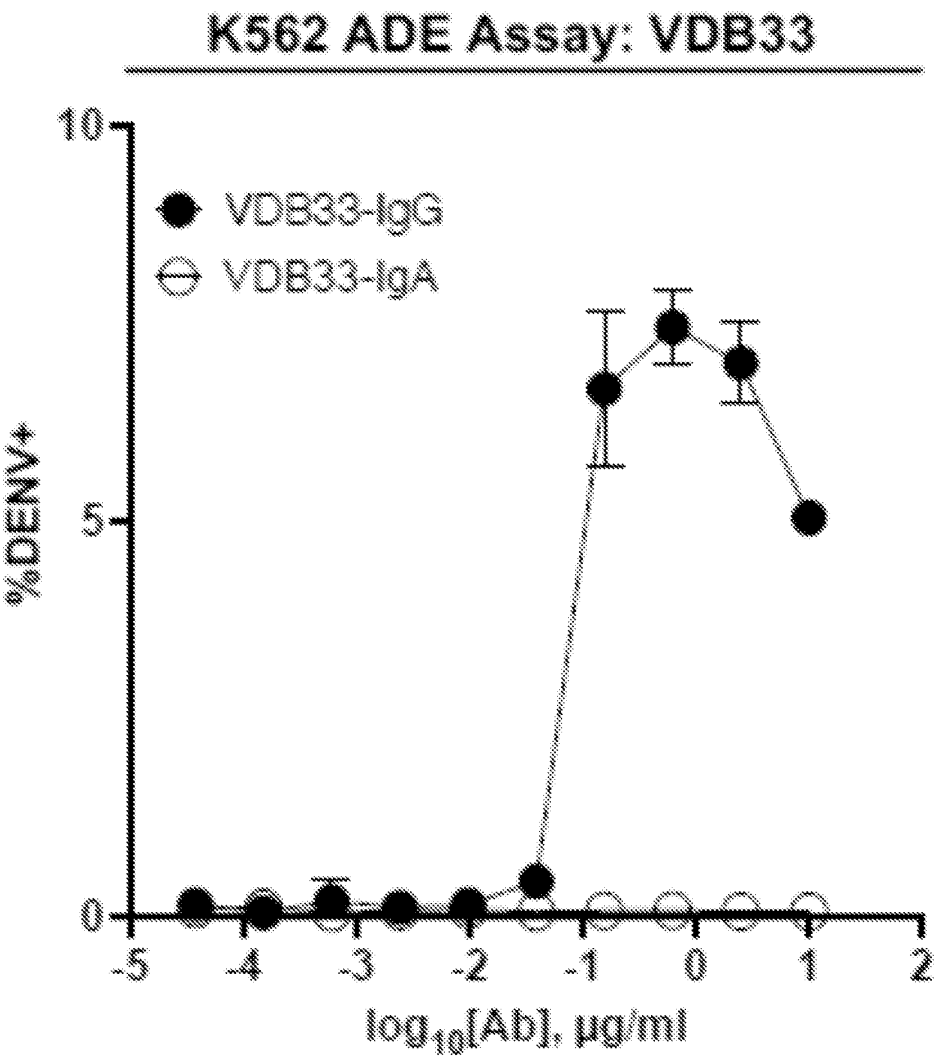


FIG. 2A

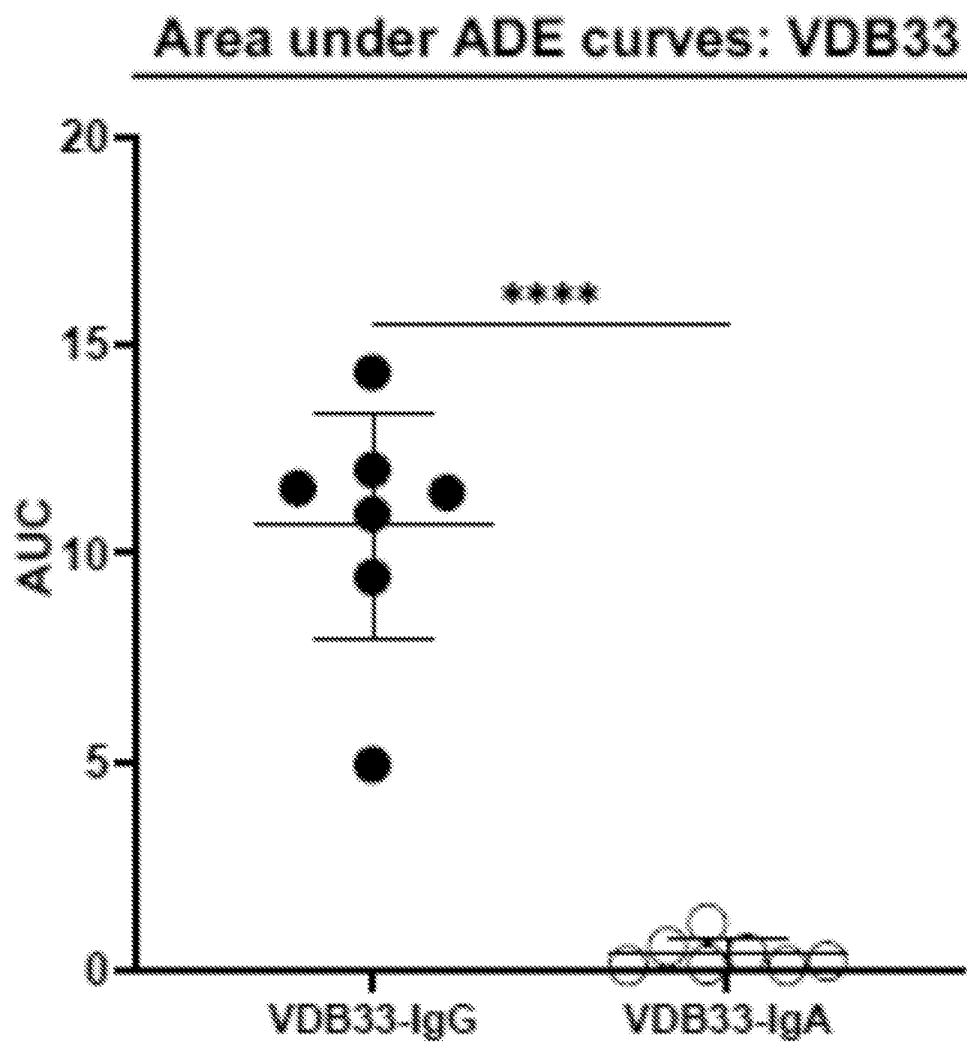


FIG. 2B

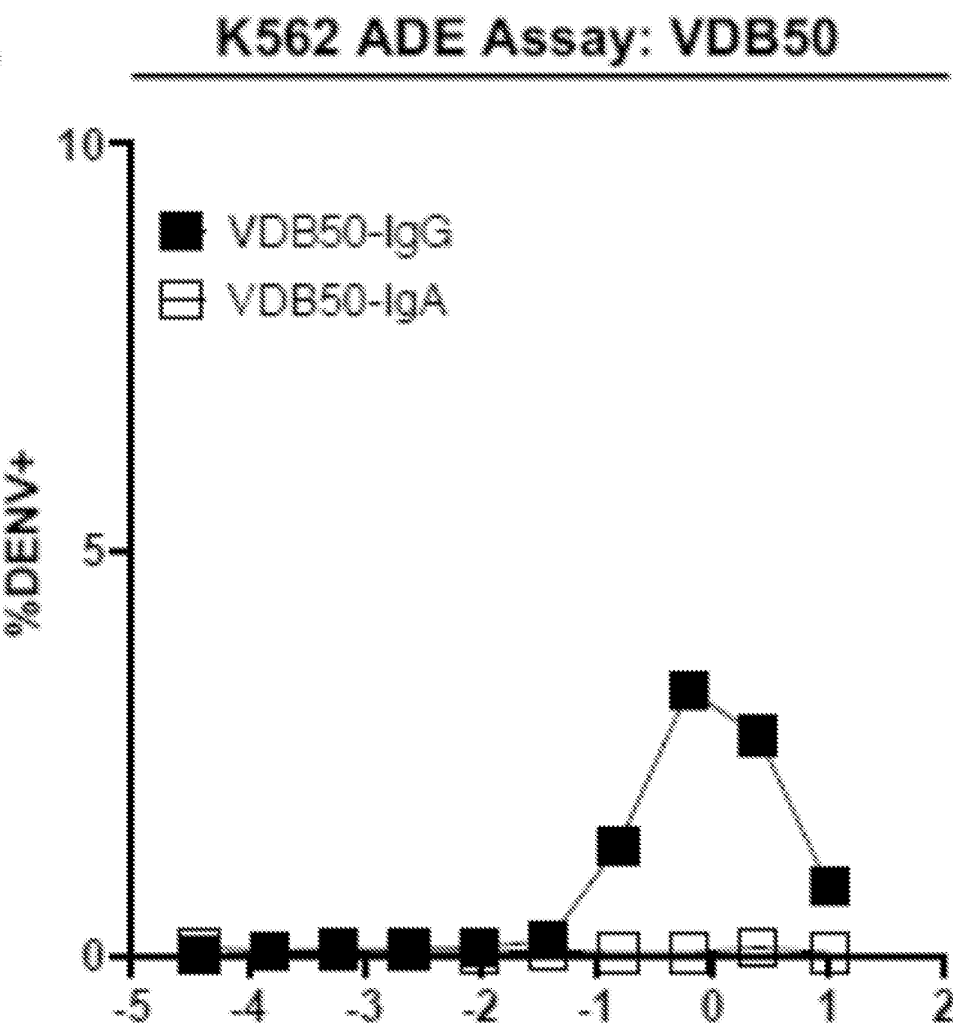


FIG. 2C

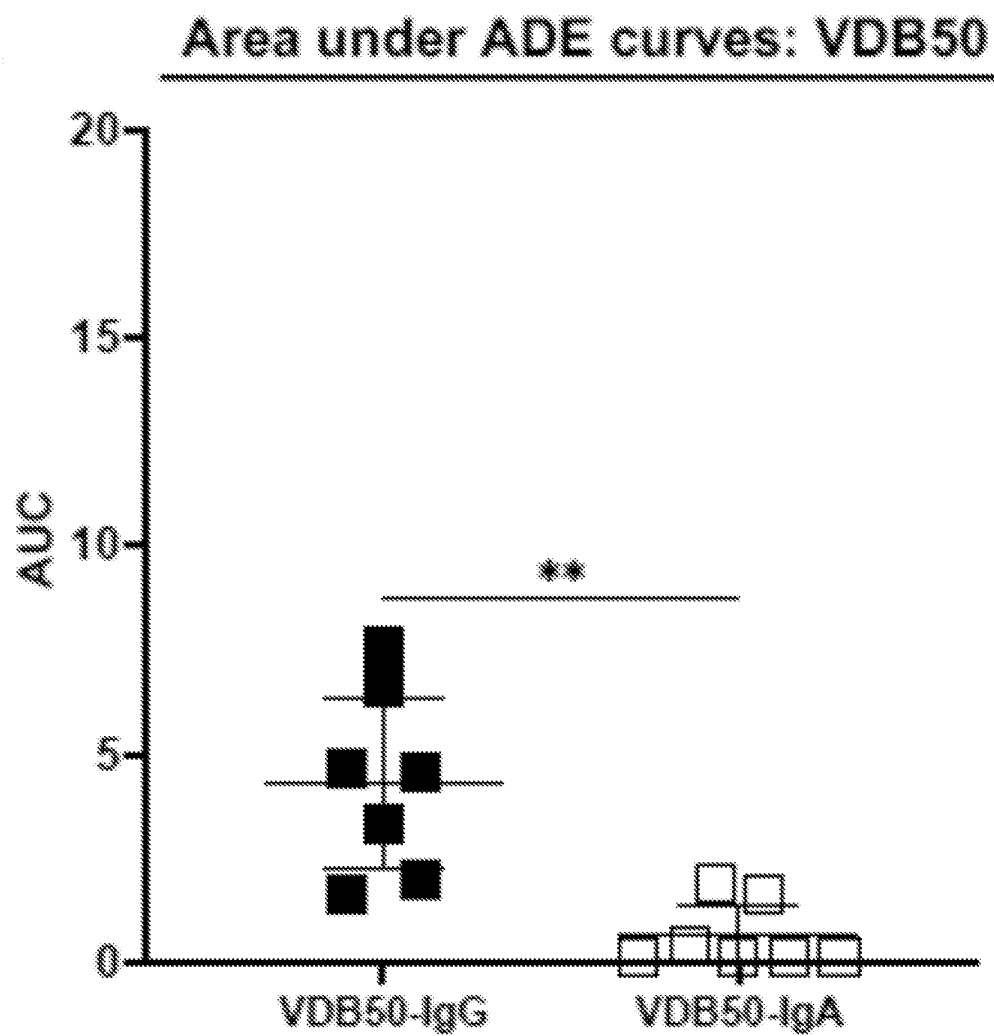


FIG. 2D

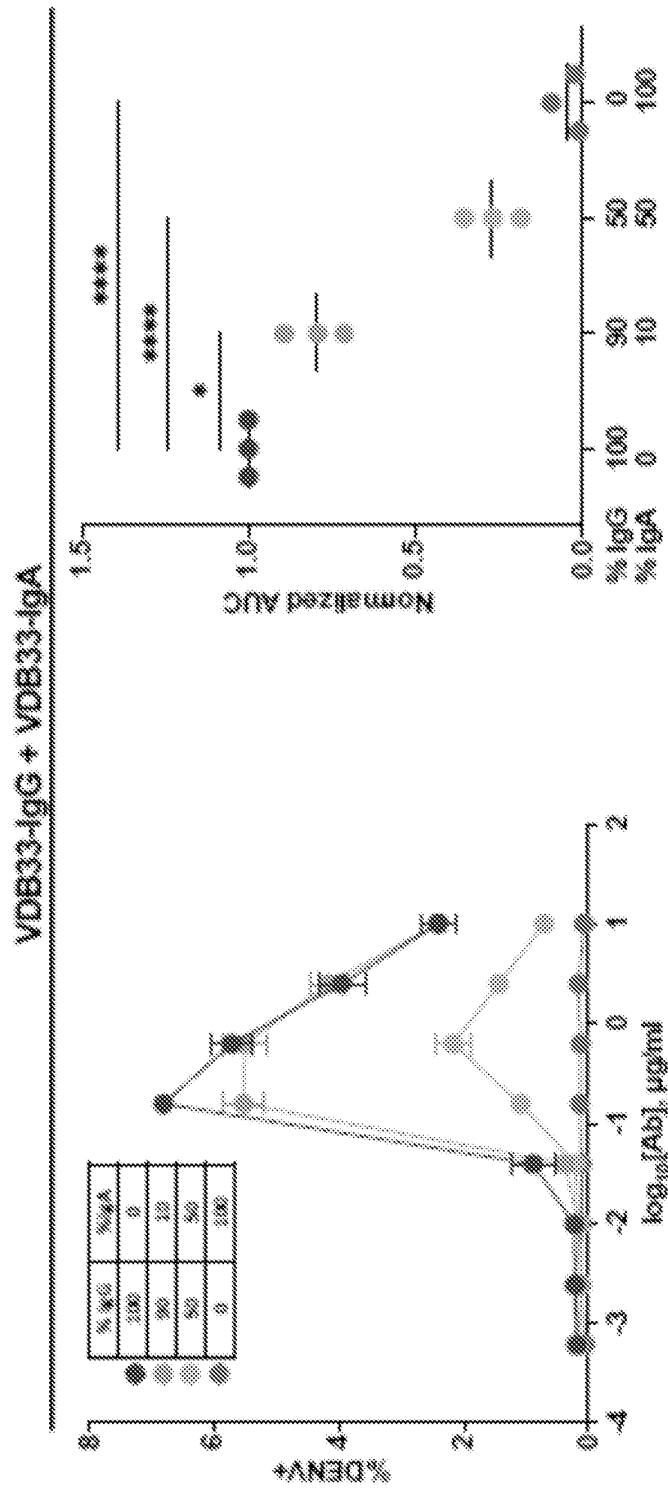


FIG. 3A

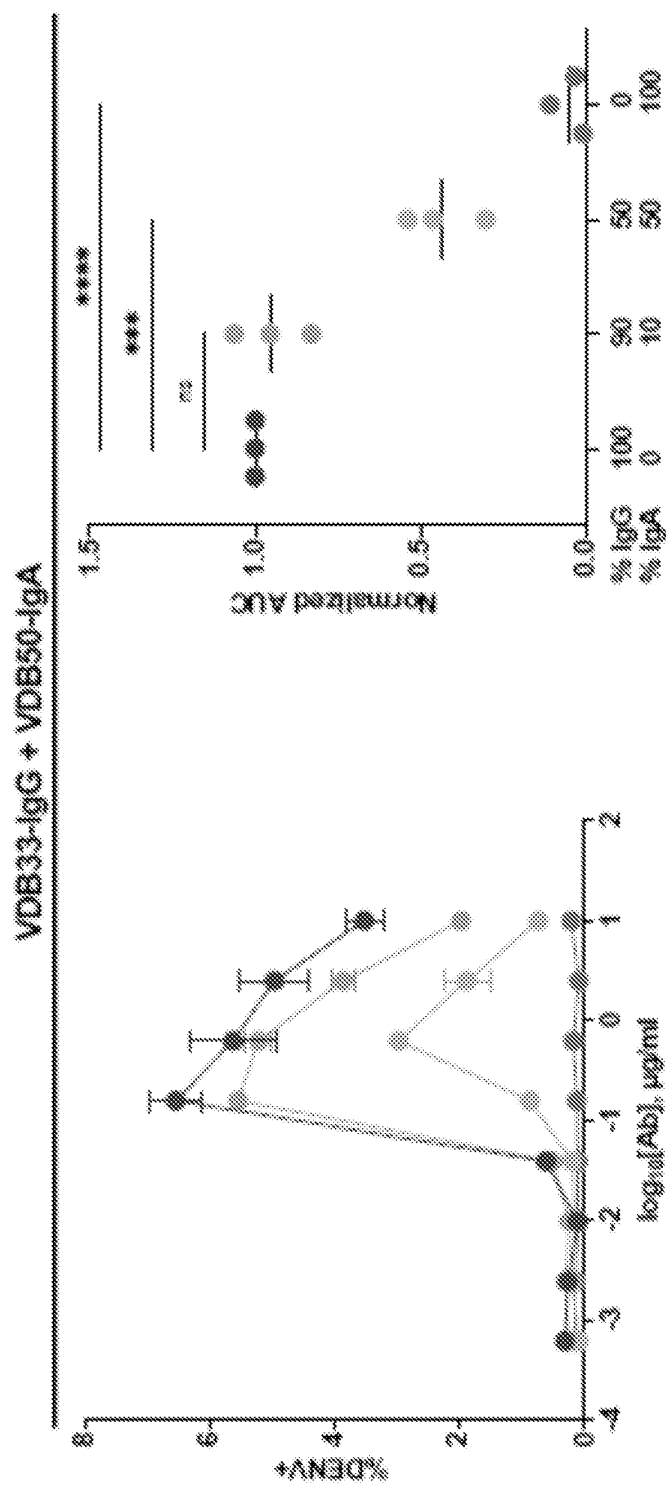


FIG. 3B

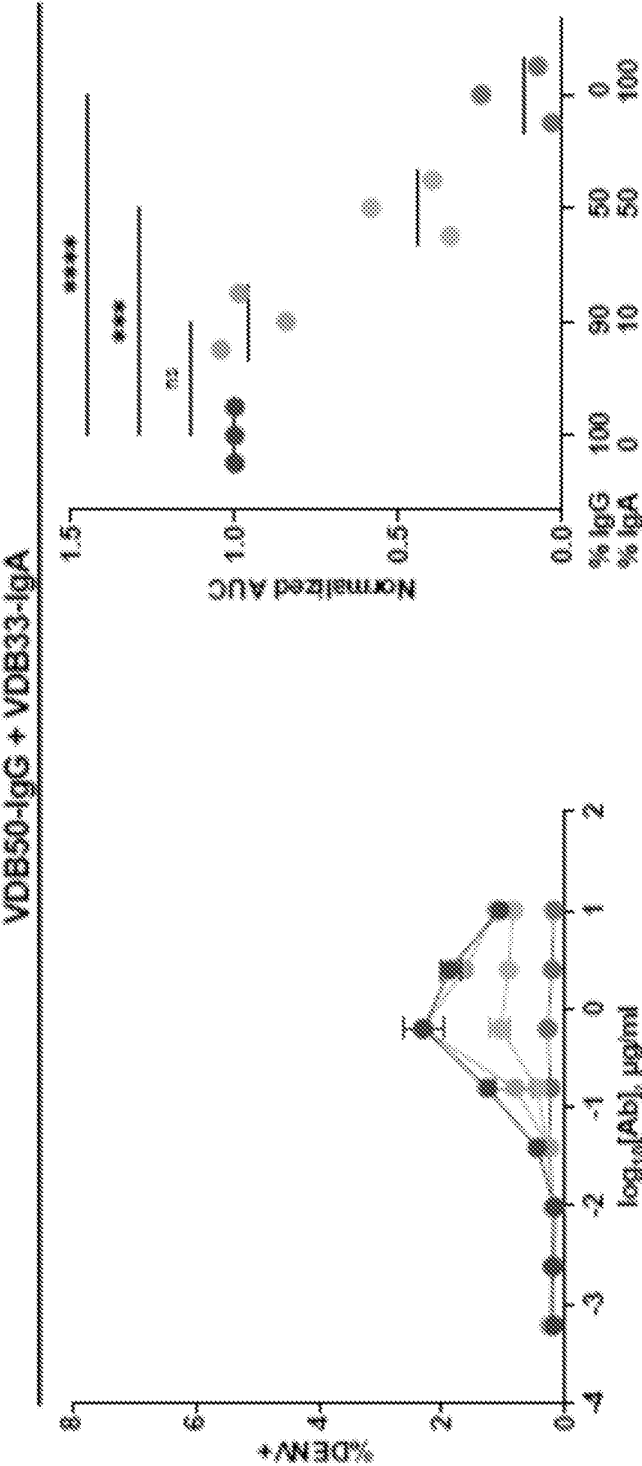


FIG. 3C

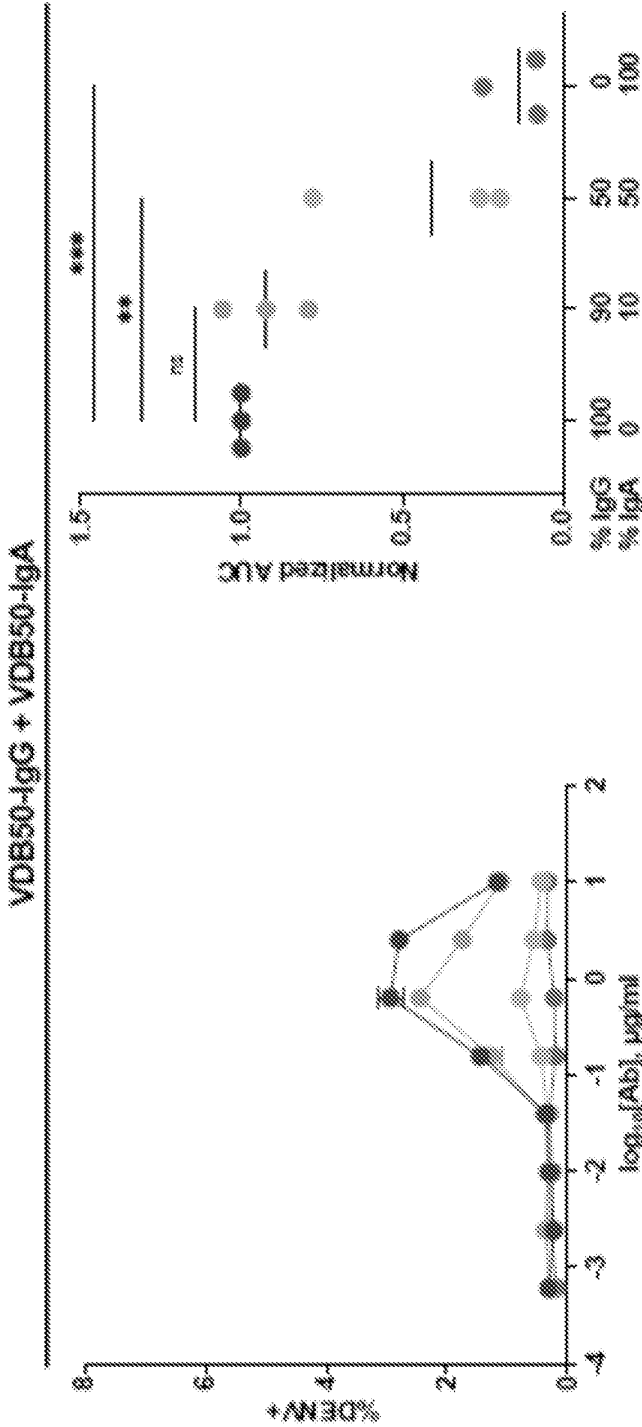


FIG. 3D

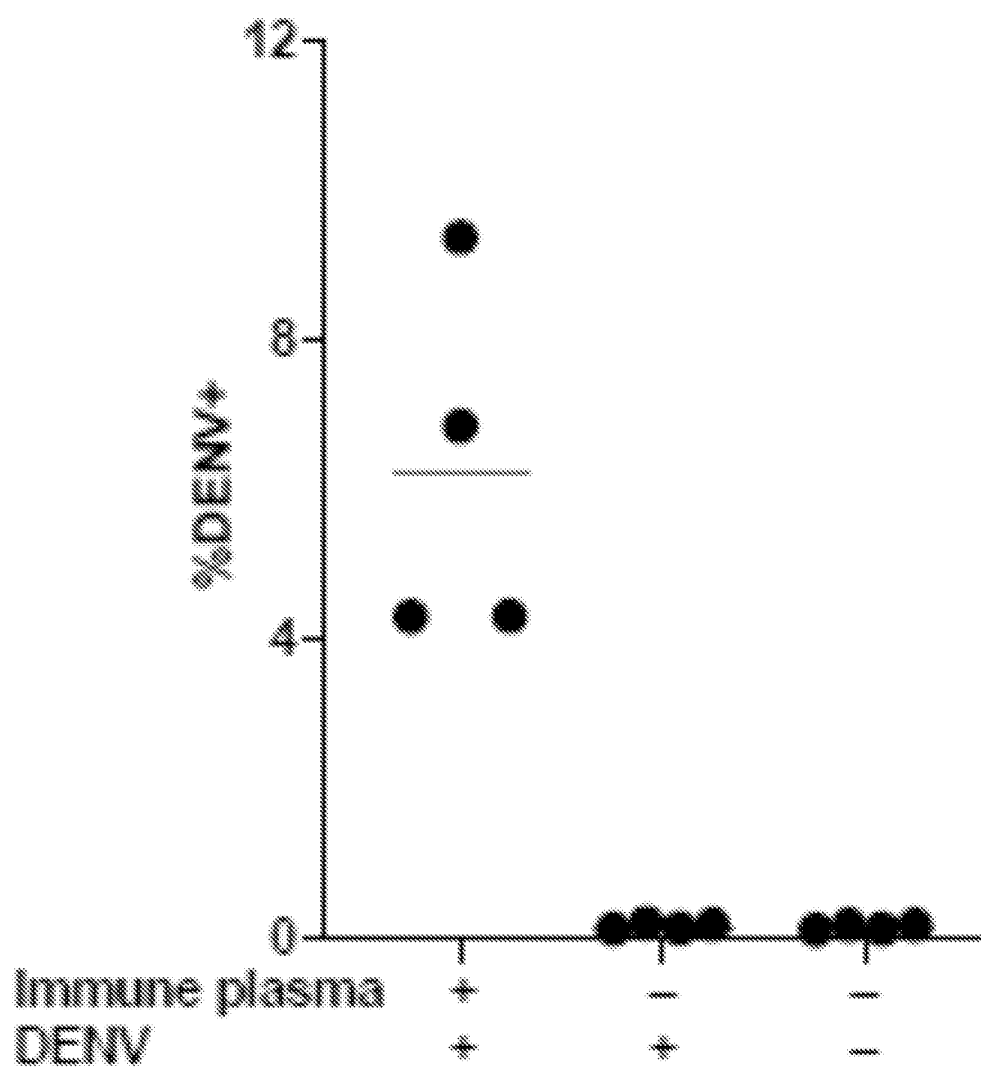


FIG. 4A

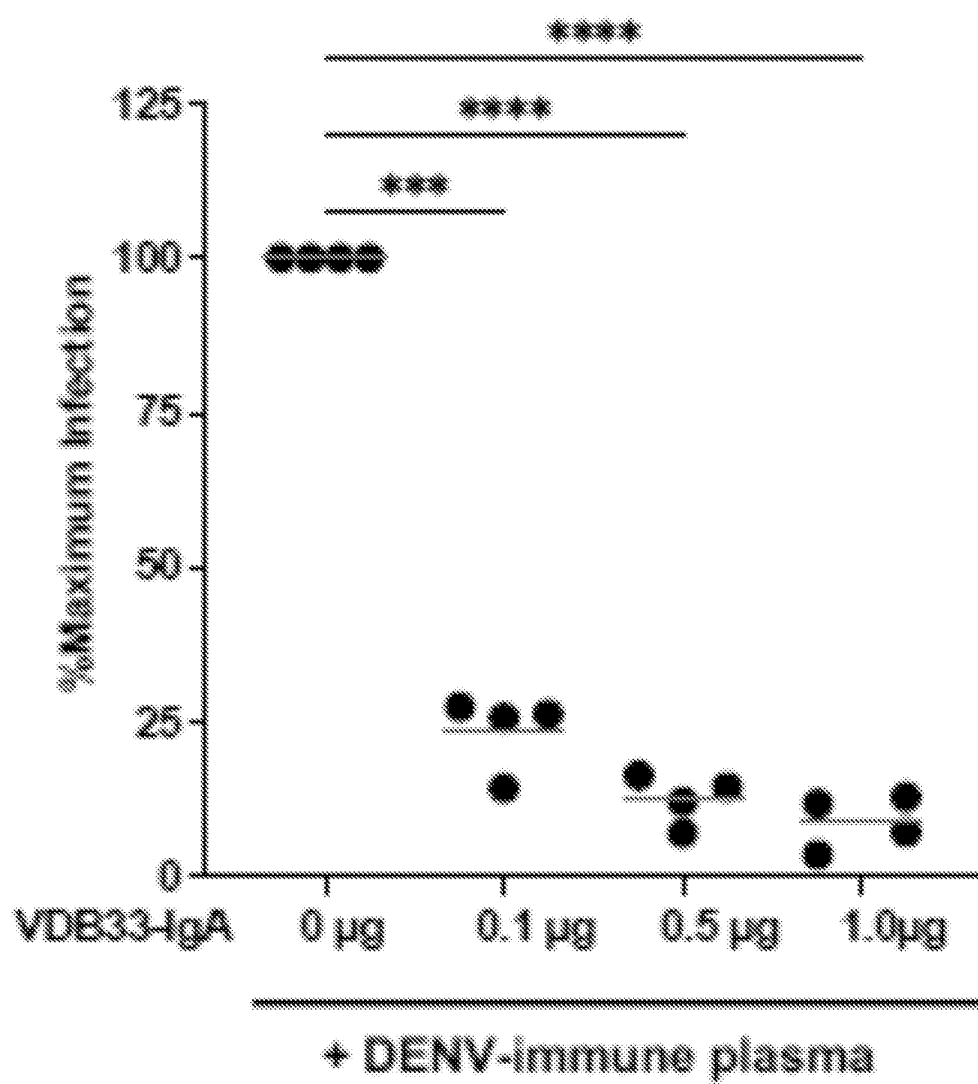


FIG. 4B

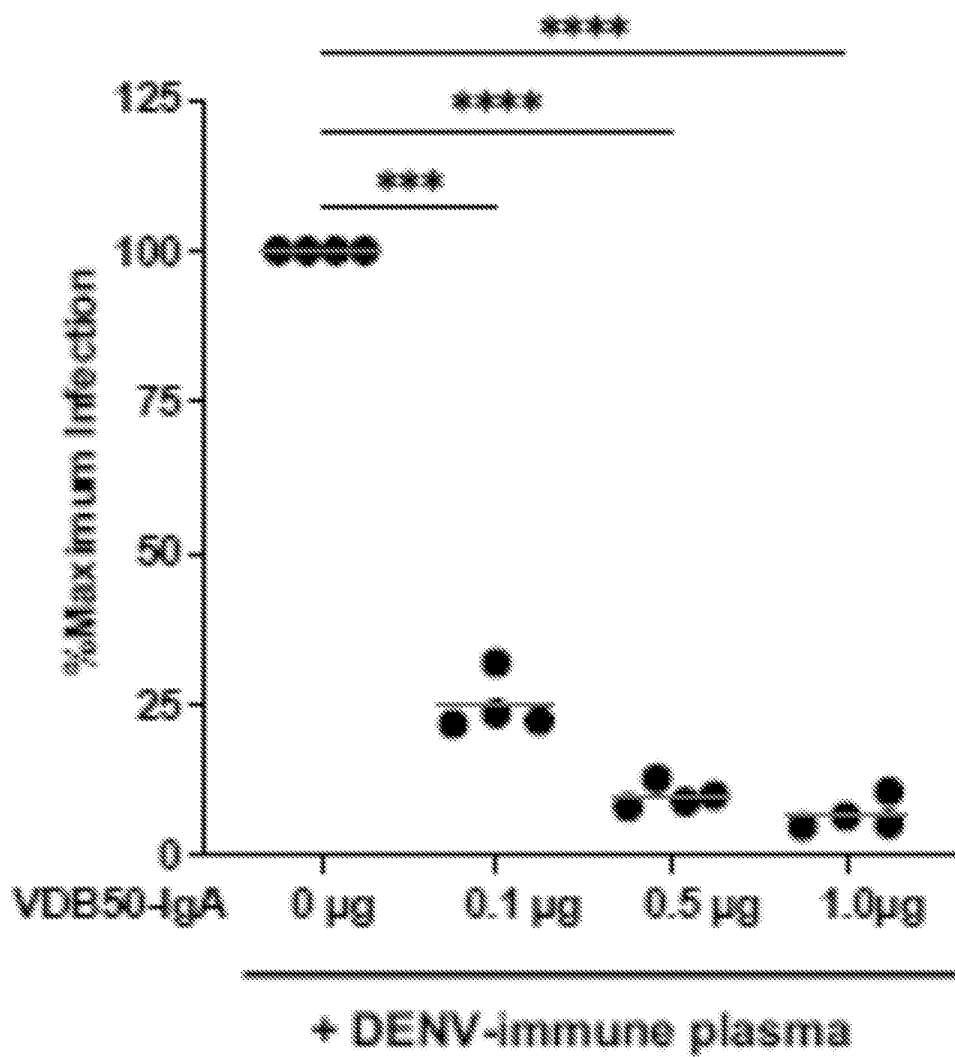


FIG. 4C

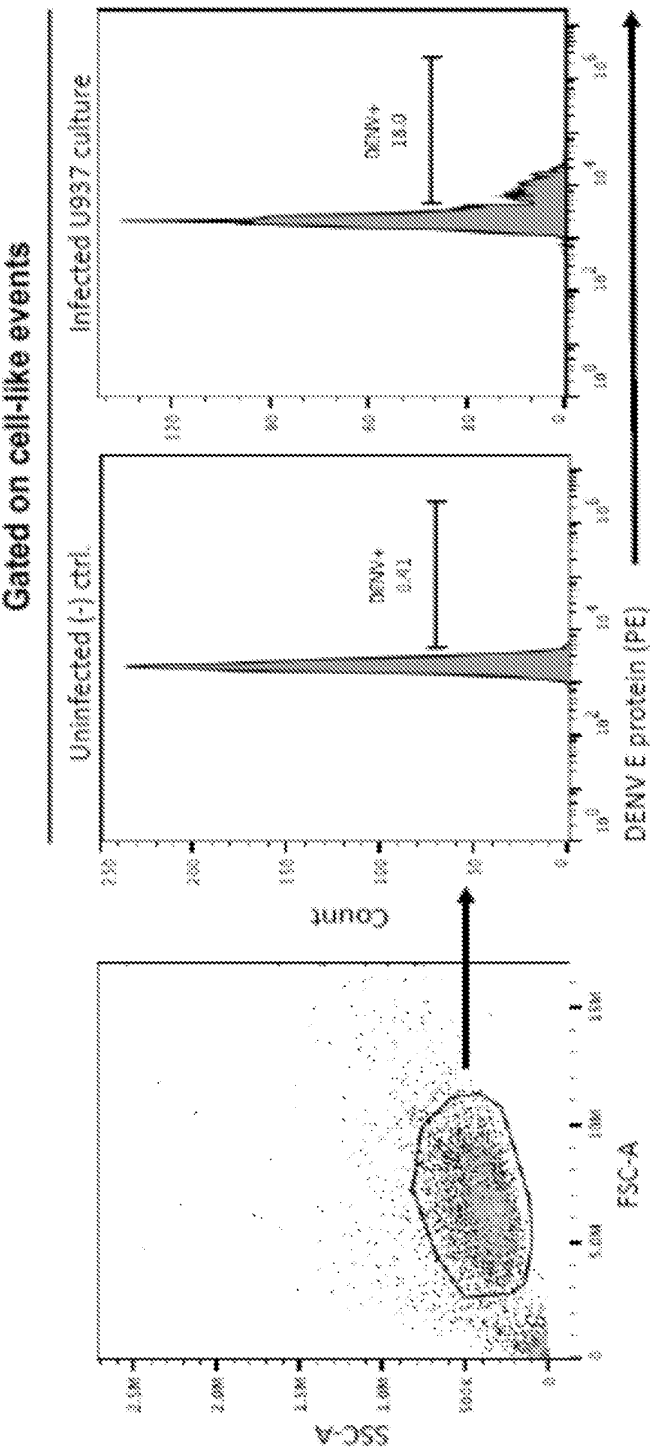


FIG. 5

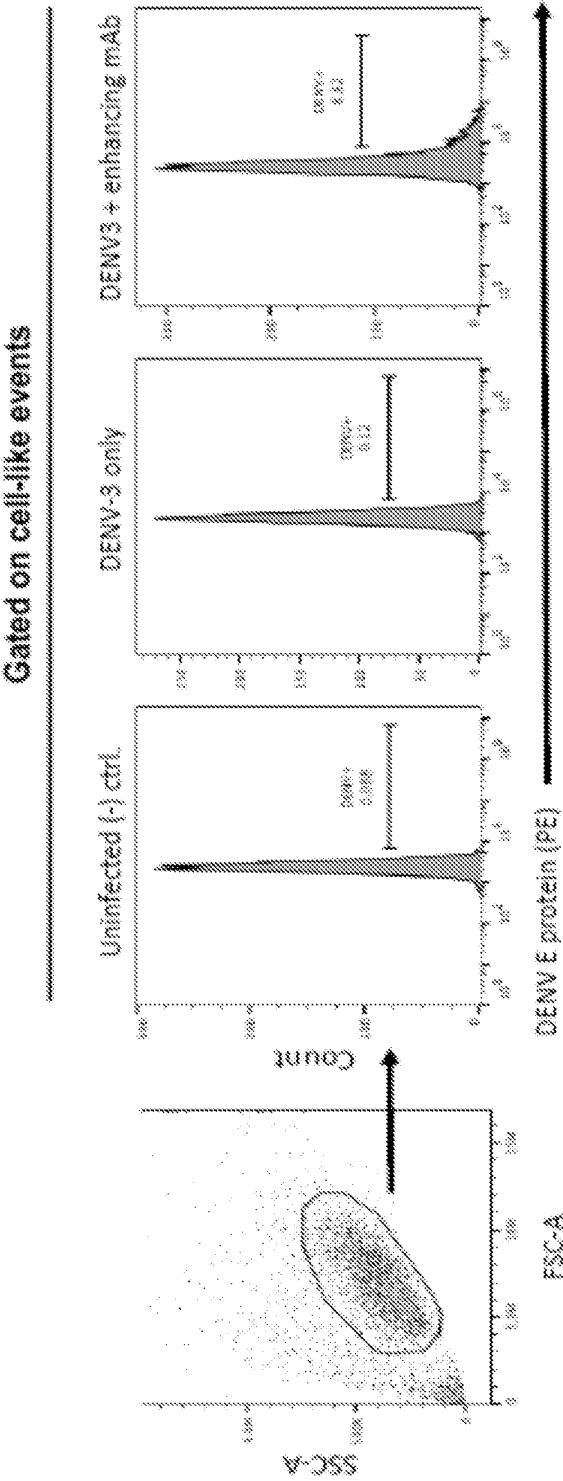


FIG. 6

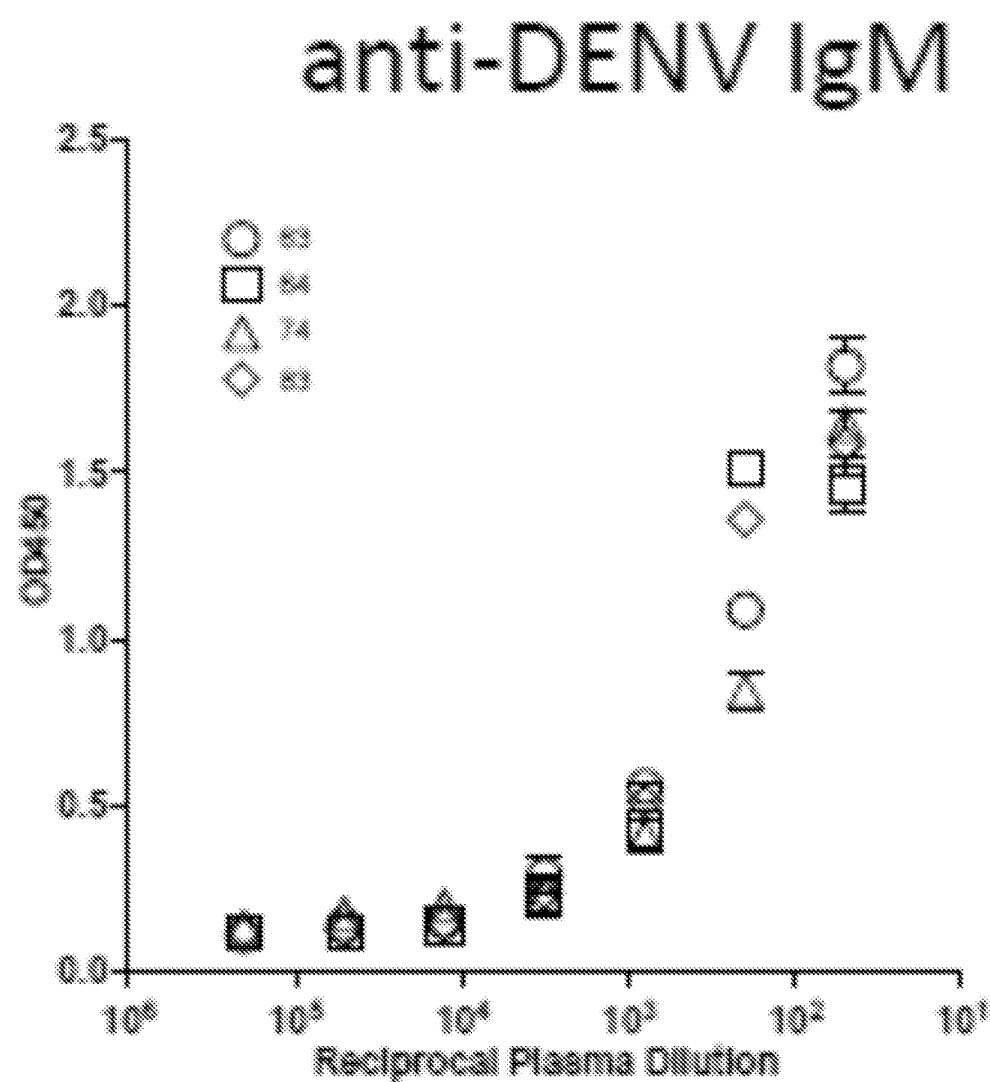


FIG. 7A

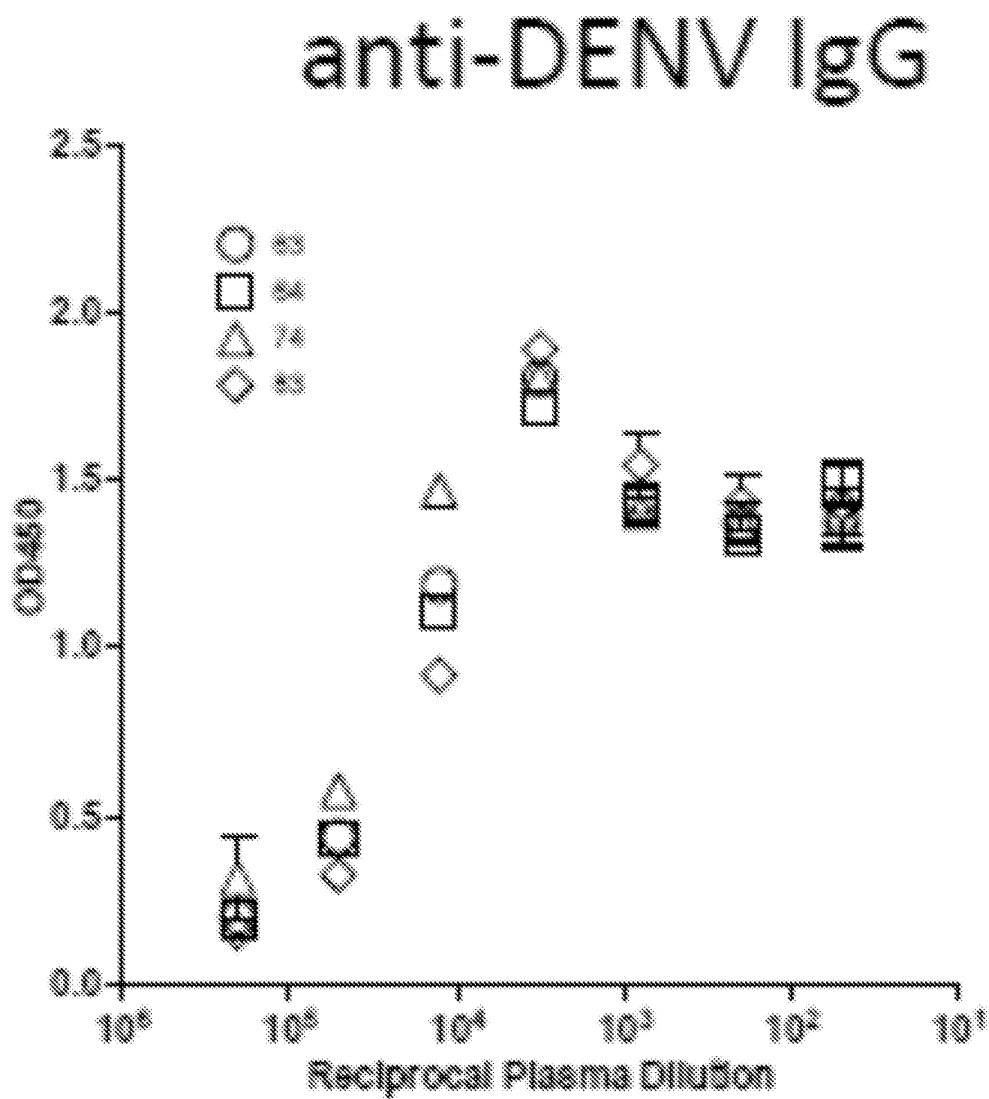


FIG. 7B

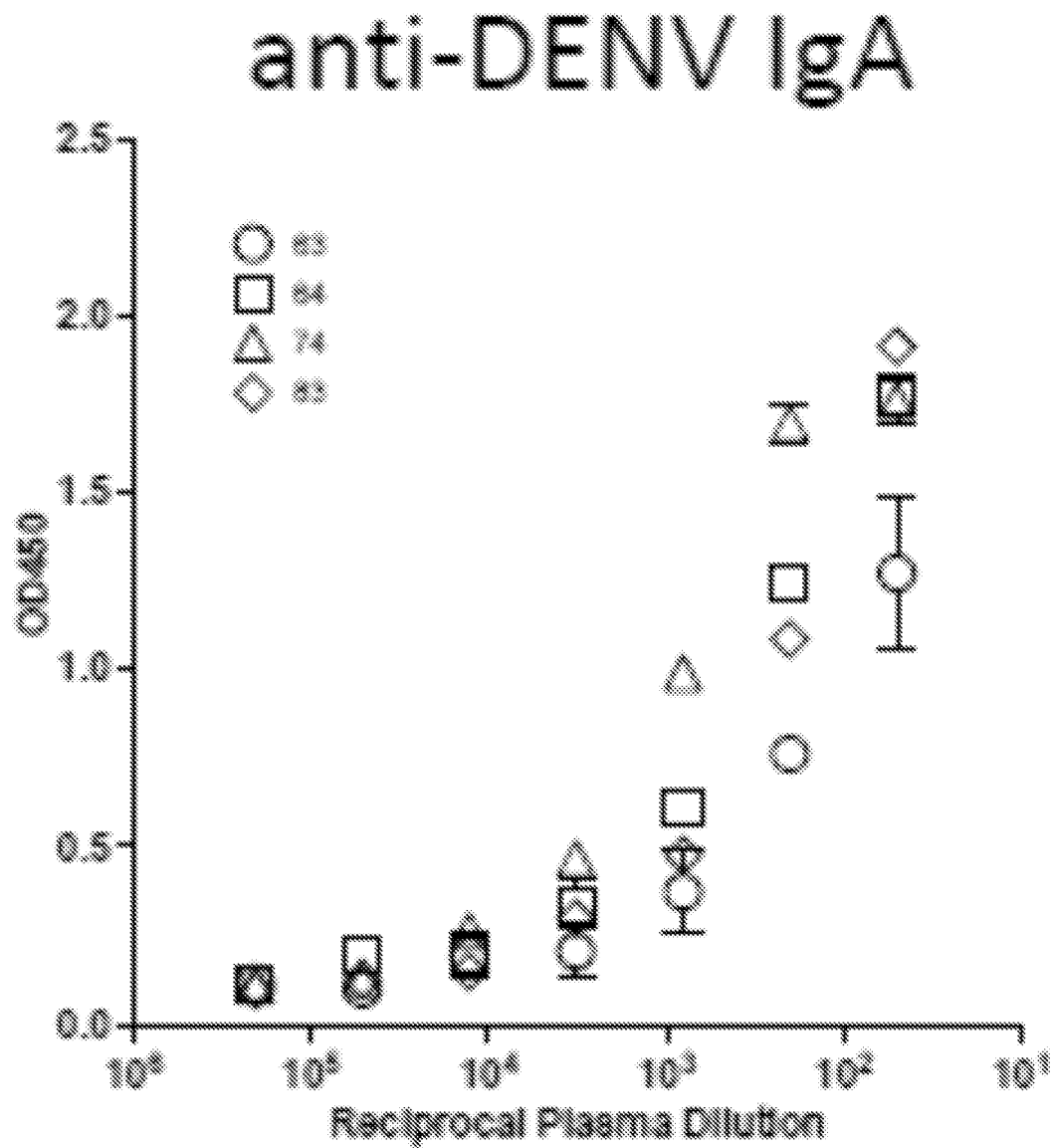


FIG. 7C

FIG. 8A

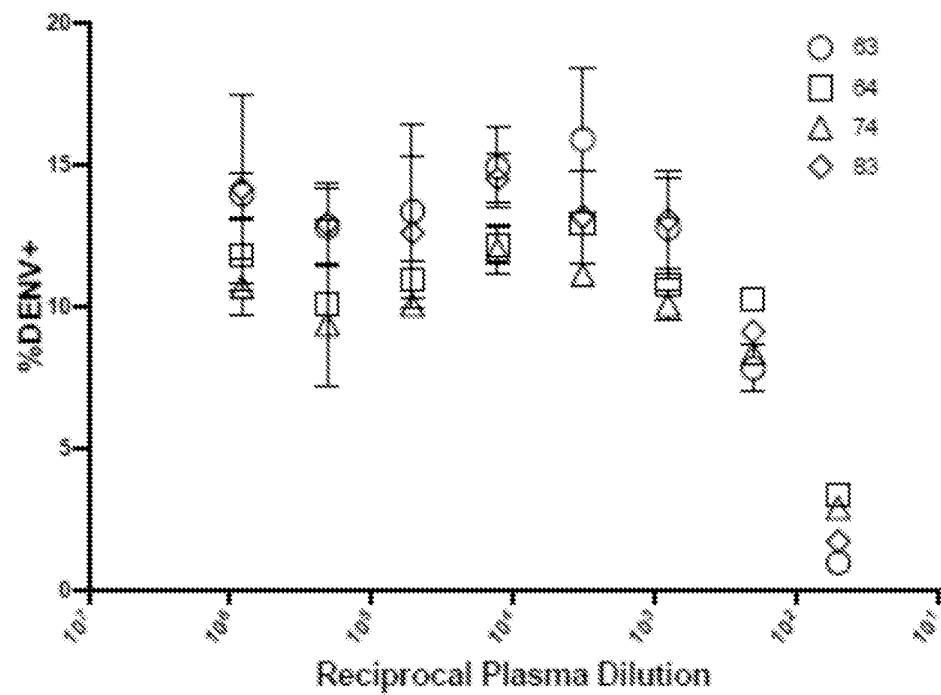
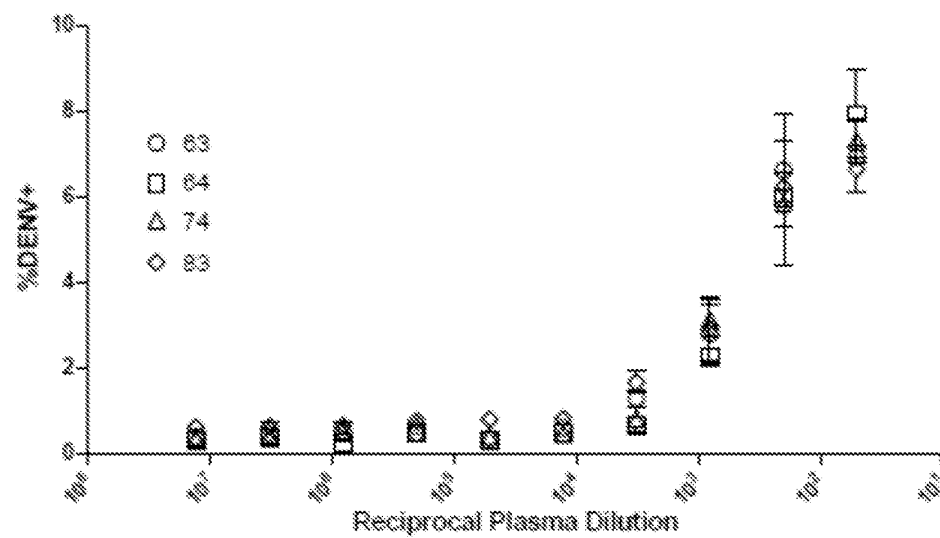


FIG. 8B



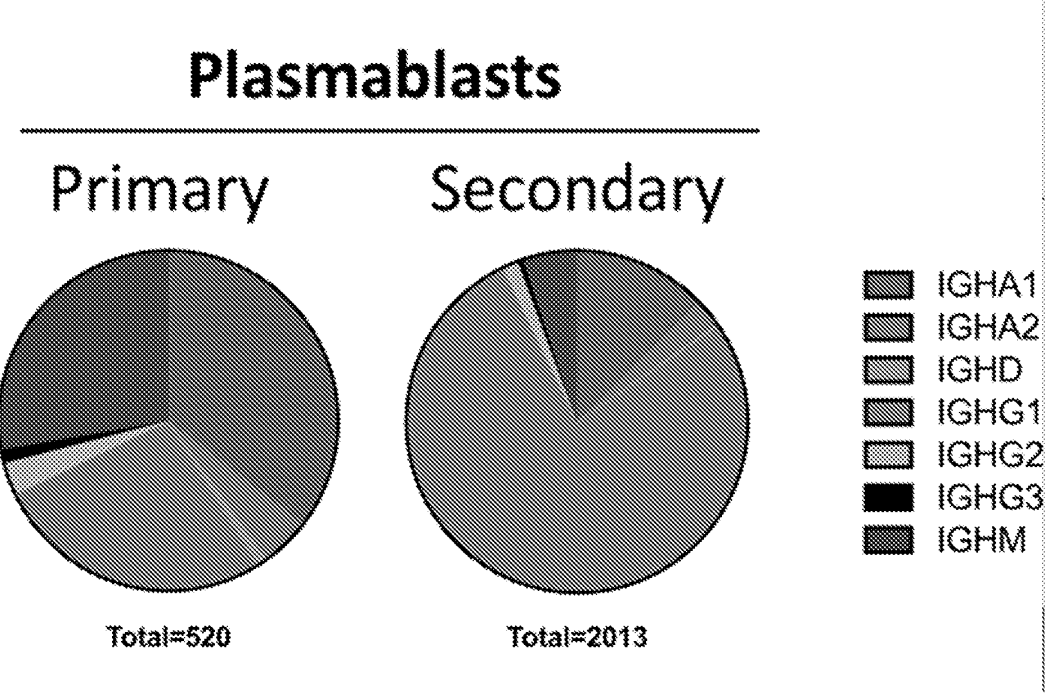


FIG. 9

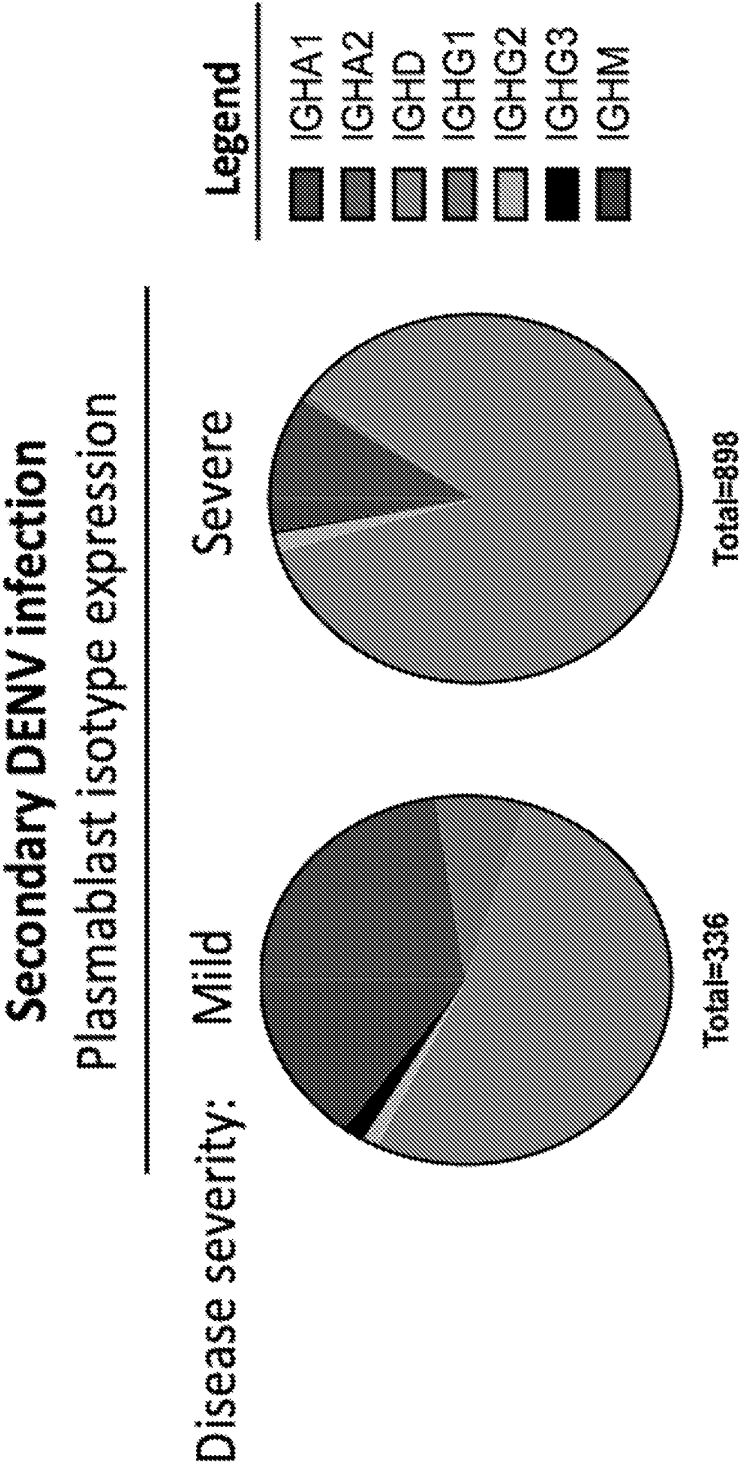


FIG. 10

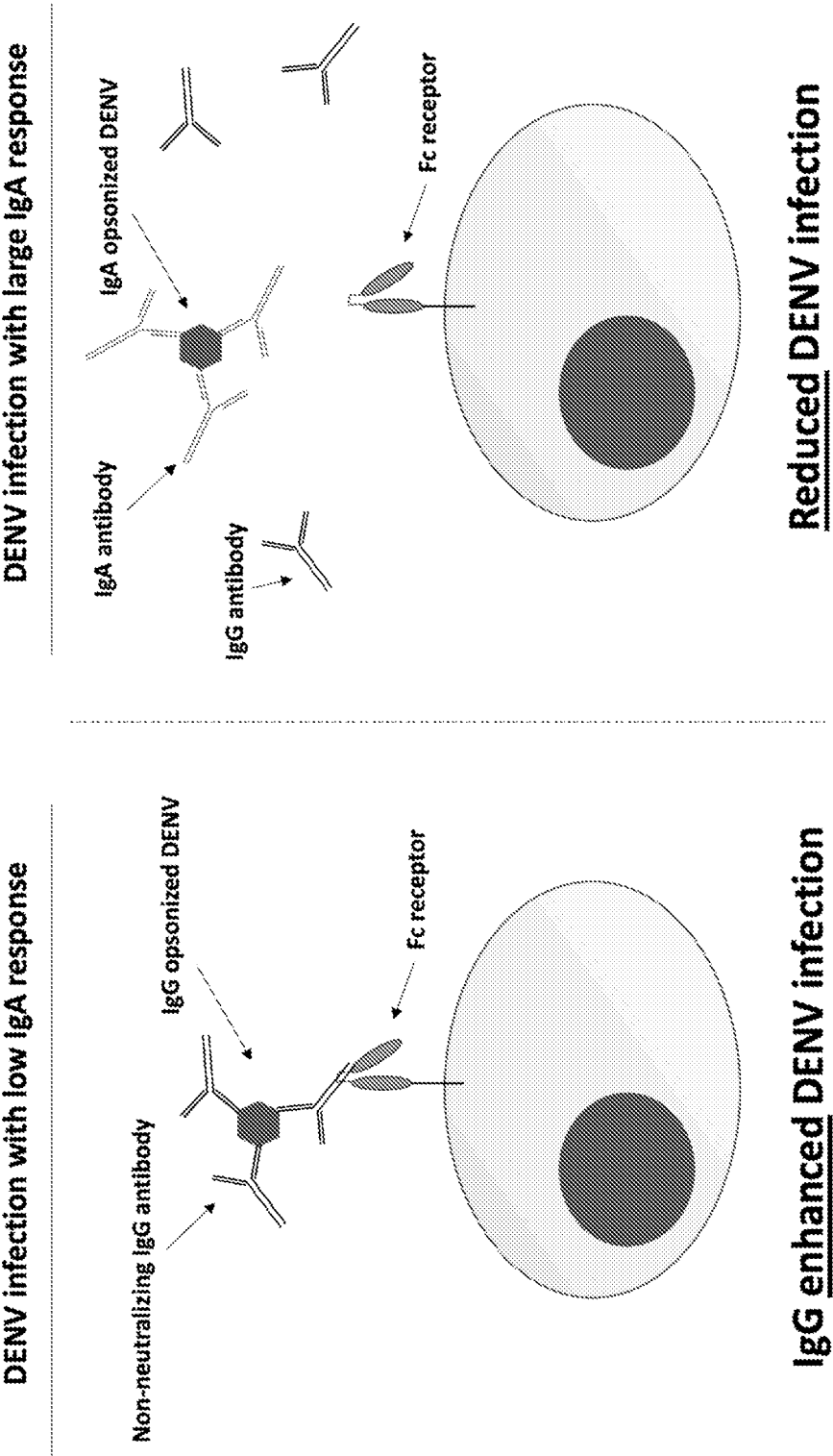


FIG. 11

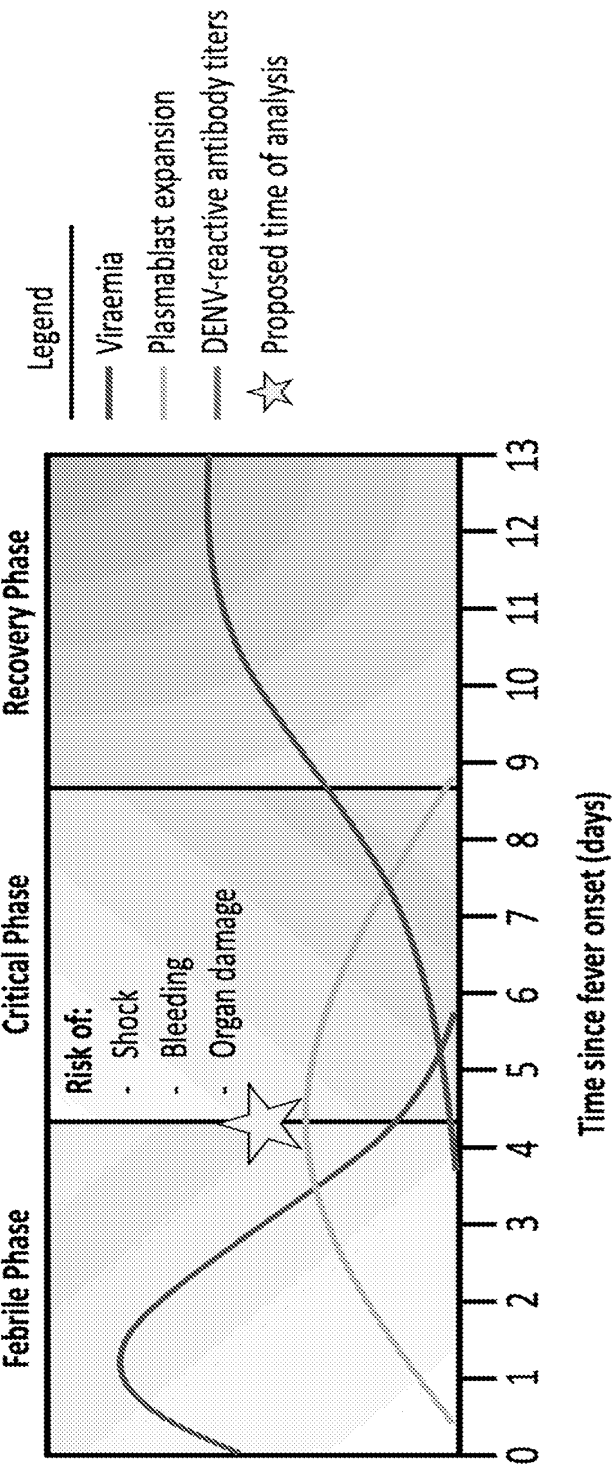


FIG. 12

ADE curves from mAb VDB33

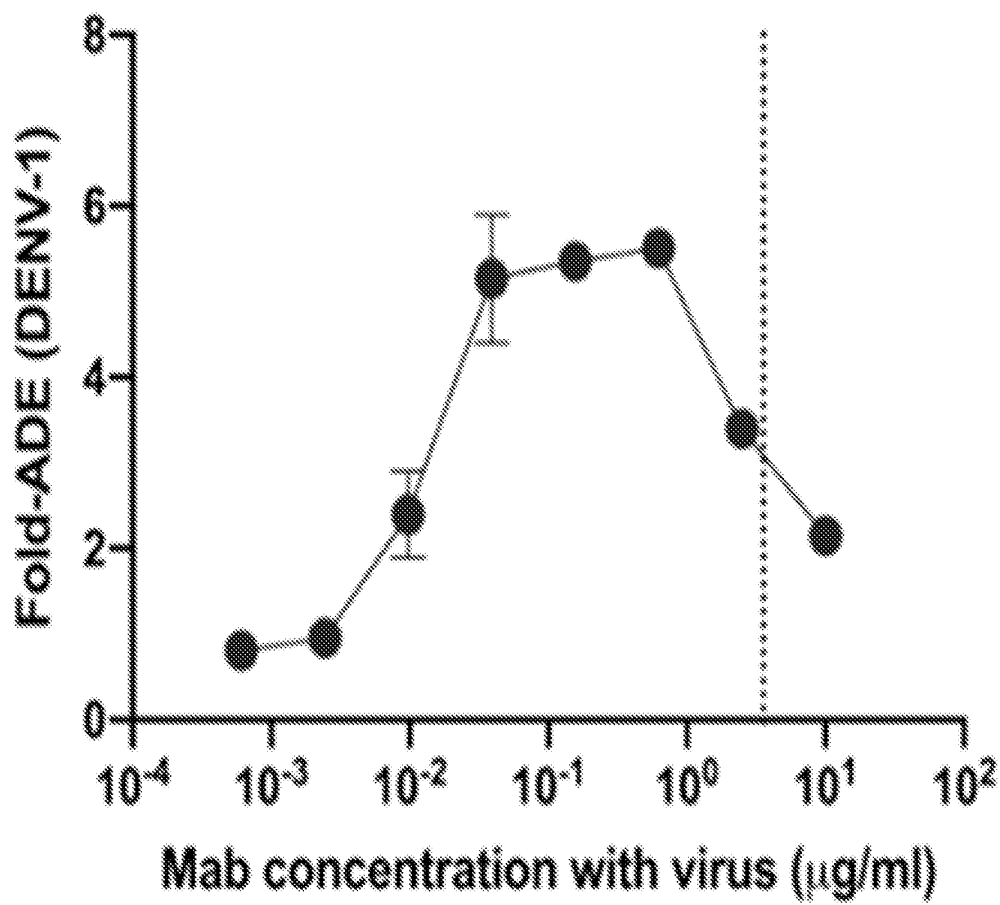


FIG. 13A

ADE curves from mAb VDB33

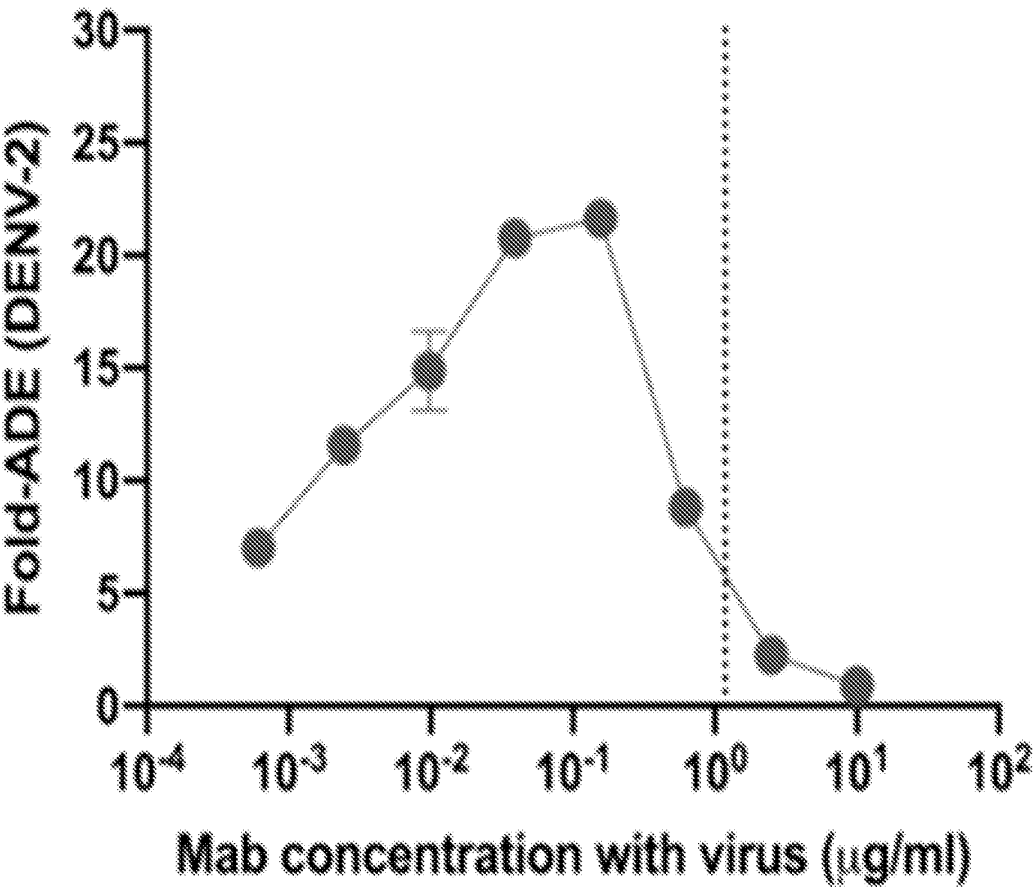


FIG. 13B

ADE curves from mAb VDB33

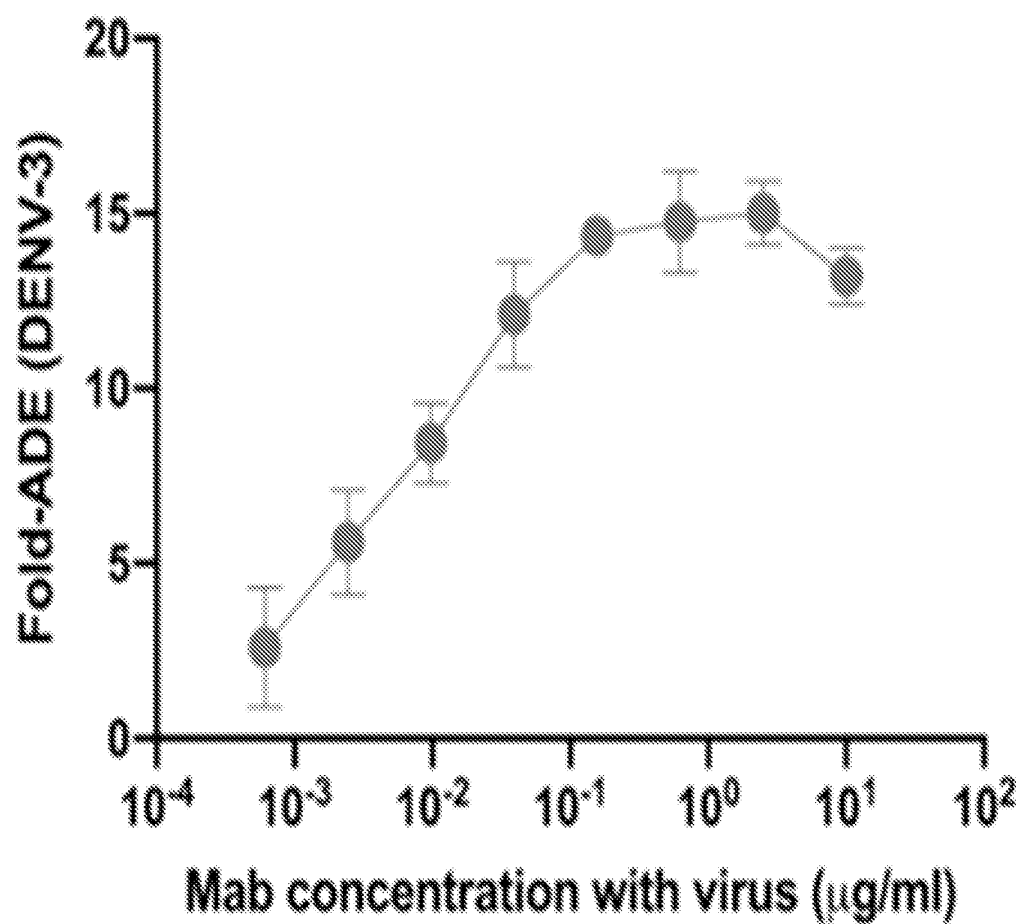


FIG. 13C

ADE curves from mAb VDB33

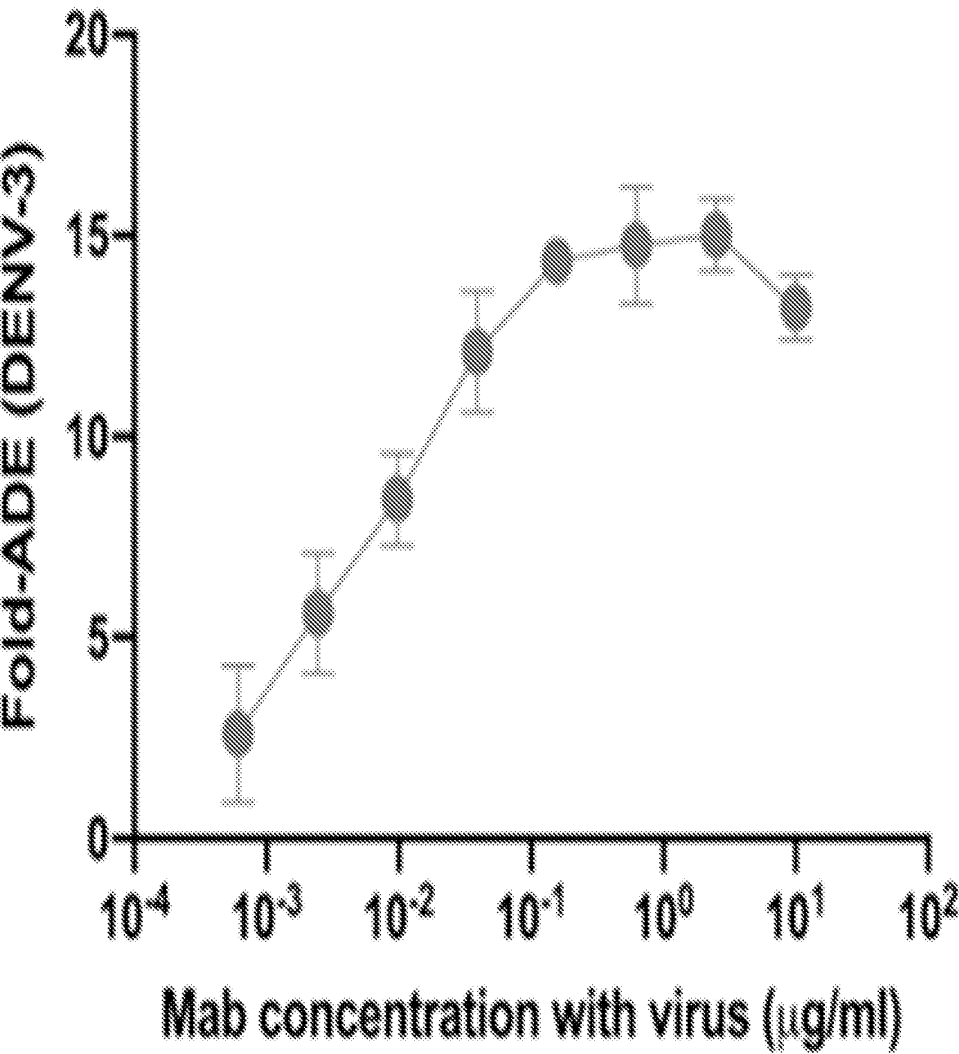


FIG. 13D

>VDB33_IgG_HC

MGWSCIILFLVATATGVHSQLQLQASGPGLVKPSETLSLTCTVSGGSISSSYFWGWIROPPEKELQWLGSIFSRGNAYYNPSLKSRVTVSVDTSKNQPSLKLTSTVATDITAVYYCARLLQYKNNWLFDPWGGTILVTVSASTKGPSVFEPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPEVLDSGDSFFLYSKLTVDKSRWQOGNVFSCSVMEALHNHYTQKSLSLSPGK

>VDB33_IgG_LC

MGWSCIILFLVATATGVHSSYVLTQPPSVSVAPGKTARITCGGNNIESKSVHWYQQKSRQAPVLVIFYDHS DRPSGIPERFSASNSGHTATLIISGVEAGDEADYHCQVWSDSDHPVFGGGTKLTVLGQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTTPSKQSNNKYAASSYLSLTPEQWKSHRSYSCQVTHEGSTVEKTVAPTECS

>VDB33_IgA1_HC

MGWSCIILFLVATATGVHSQLQLQASGPGLVKPSETLSLTCTVSGGSISSSYFWGWIROPPEKELQWLGSIFSRGNAYYNPSLKSRVTVSVDTSKNQPSLKLTSTVATDITAVYYCARLLQYKNNWLFDPWGGTILVTVSASTKGPSVFEPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPEVLDSGDSFFLYSKLTVDKSRWQOGNVFSCSVMEALHNHYTQKSLSLSPGK

SEQ ID NO: 1

>VDB33_IgA1_LC

MGWSCIILFLVATATGVHSSYVLTQPPSVSVAPGKTARITCGGNNIESKSVHWYQQKSRQAPVLVIFYDHS DRPSGIPERFSASNSGHTATLIISGVEAGDEADYHCQVWSDSDHPVFGGGTKLTVLGQPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAWKADSSPVKAGVETTTPSKQSNNKYAASSYLSLTPEQWKSHRSYSCQVTHEGSTVEKTVAPTECS

SEQ ID NO:2

Annotation

Signal peptide (for secretion)

Heavy Chain V region (antigen binding)

IgG1 heavy chain constant region

IgA1 heavy chain constant region

FIG. 14

>VDB50_IgG1_Heavy_Chain

[REDACTED]EVQLLESGGGLVQPGGSLRLSCAASGFTFSFVMAWVRQAPGKGLEWVSVIYDGSST
 YYADSVKGRFTISRDNKNTLYLQMNSLRAEDTAVYYCAKASQMATVFIDYWGQGLVTVSSASTKGPSVFPLAPSS
 KSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVFSSSLGTQTYICNVNHKPSNT
 KVDKKVEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHN
 AKTKPPEEQYNSTYRVVSVLTVLIHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQV
 SLTCLVKRGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTVDKSRWQQGNVFCFSVMHEALHNHYTQKS
 LSLSPGK

>VDB50_IgG1_Light_Chain

[REDACTED]QSVLTQPPSVSGAPGQRVVISCTGSSSNIGAGFDVHWYQQLPGTAPKLLIYGNNNRPS
 AVFDKFSGSKSGTSASLAIITGLQAEDEADYYCQSYDSSLGGVFGGGKLTVLQGPRAAPSVTFLEPPSSEELQANKA
 TLVCLISDFYPGAVTVANKADSSPVKAGVETTTTPSKQSNNKYAASSYLSLTPEQWKSRRSYSCQVTHEGSTVENTVA
 PTECS

Legend

[REDACTED] leader sequence (for secretion)

V region, heavy chain

V region, light chain

IgG1 heavy chain constant region

Light chain constant region

FIG. 15

>DENV1_E protein (Wp74, UniProt P17763.2)
Mrcvgignrdfveglsgatwvdvvhgscvttmakdkptldiellktevtnpavlrklcieak
isnttttdsrcptqgeatlveeqdtnfvcrrtfvdrggngcgllgkgslitcakfkcvtklegk
ivqyenlkysvivtvhtgdqhgvgnettehgttatitpqaptseiqltdygaltldcsprtgd
fnemvlltmekkswlvhkqwflldlplpwtsgastsqetwnrqdllvtfktahakkqevvvlgsq
egamhtaltgateiqtsgtttifaghlkcrlkmdkltlkgmsyvmctgsfklekevaetqhgtv
lvqvkyegtdapckipfssqdekgtqngrlitanpivtdkekpvnleaepffgesyivvgage
kalklswfkkgssigkmfeatargarrmailgdtawdfgsiggvftsvgklihqifgtaygvlf
sgvswtmkigigilltwlglnsrstslsmtciavgmvtlylgvmvqa SEQ ID NO: 5

Legend

VDB33 target epitopes: W101, G106, L107, F108

Green highlight is the target loop

FIG. 16

VDB50_IgA_heavy_chain_AA

EVQLLESGGGLVQPGGSLRLSCAASGFTTFSSFVMAWVRQAPGKGLEWVSVIYDGGSSITYADSVKGRFTISRDN SKN
TLYLQMNSLRAEDTAVYYCAKASQMATVFIDYWGQGTLLVTVSSASPTSPKVFPPLSLCSTQPDGNVVIACL VQGFPPQ
EPLSVTWSESGQGV TARNFPPSQDASGDLYTTSSQLTLPATQCCLAGKSVTCHVKHYTNFSQLVTVPCFVPSTPPTPS
PSTPPTPSPSCCHPRLSLHRALEDLLLGSEANLTCTLTGLRDASGVFTFTWTPSSGKSAVQGFPERDLGGCYSVSSV
LPGCAEPWNHGTFTCTAAYPESKTPITATLSKSGNTFRPEVHLLFPPEELALNELVTLTCLARGFSPKDVLRWL
QGSQELPREKYL TWASRQEPSQGTTFFAVTSILRVAEDWKKGDTTSCMVGHEALPLAFTQKTI DRLAGKPTHVNV
VVM AEVDGTCY

VDB50_IgA_light_chain_AA

QSVLTQPPSVSGAPGQRV IISCTGSSSNIGAGFDVHWYQQLPGTAPKLLIYGNNNRPSAVPDRFSGSKSGTSASLAI
TGLQAEDEADYYCQSYDSSLGGVFGGGTKLTVLQCPKAAASVILEFPSSSEELQARIATLYCLISGFYPSAVTANK
ADSSGVRAQVETFTTSKQSNISYARSSYLCLTPEQWEEGRSYSCQVTELEGSTVGETVPEFEL

Annotation

Heavy chain V region

Light chain V region

IgA heavy chain constant region

Light chain constant region

FIG. 17

>DENV1_E_protein (Wp74, UniProt P17763.2)

Mrcvgignrdrfveglsgatwvdvvhgscvttmakdkptldiellktevtnpavlrlklcieakisnttttdsrcptq
geatlveeqdtnfvcrrtfvdrqgngcgllgkgslltcakfkcvtklegkivqyenlkysvvtvhtgdqhvgne
ttehgttatitpqaptseiqltdygaltldcsprtgldefnemvlltmekksvlvhkqwfldlplpwtsgastsqetw
nrqdllvtfktahakkqevvvlgsqegamhtaltgateiqtsgtttifaghlkcrlkmdkltlkgmsyvmctgsfkl
ekevaetqhgvtlvqvkyegtdapckipfssqdekgtqngrlitanpivtdkekpvnleaappfgesyivvgagek
alklswfkkgssigkmfeatargarmailgdtawdfgsiggvftsvgkqlihqifgtaygvlfsgvswtmkigigil
ltwlglnsrstslsmtciavgmvtlylgvmvqa

Legend

YDR50 target epitopes: G100, W103, F106

FIG. 18