**Supplemental information**

# A diverse collection of B cells responded

# to HIV infection in infant BG505

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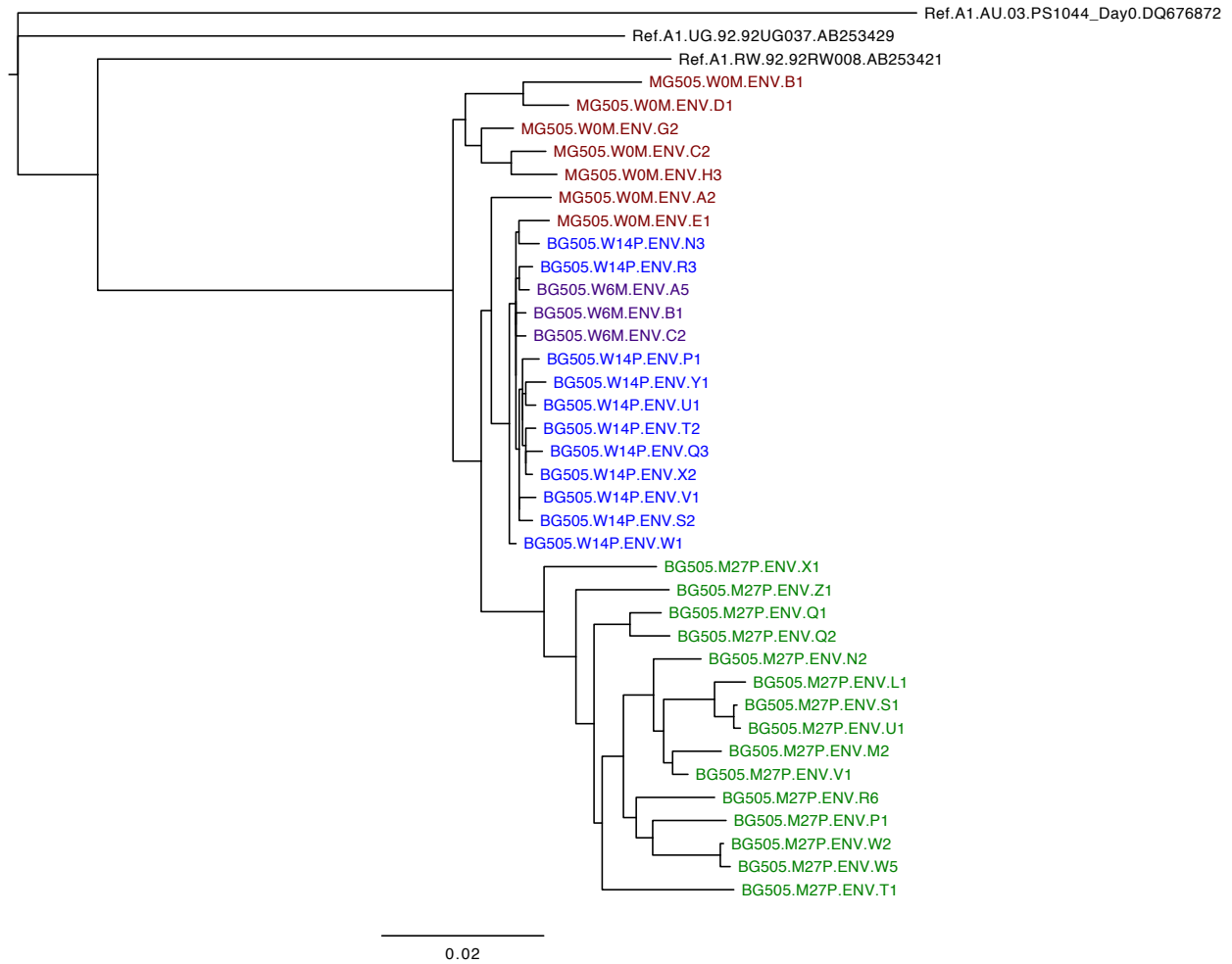
**Figure S1. Phylogenetic tree of BG505 Env variants, related to Figure 3.** Maximum likelihood phylogenetic tree of maternal- (MG505) and infant-derived (BG505) Envelope variants. Maternal variants were isolated around the time of delivery (W0, red; (Wu et al., 2006)) and are provided as a reference. BG505 Env variants are from 6 weeks (W6, purple), 14 weeks (W14, blue) and 27 months (M27, green) of age. Each Envelope sequence is indicated as either maternal (MG505) or infant (BG505), followed by the time of isolation, the source (P=plasma; M= PBMCs), and then a letter and number combination for tracking that is based on the PCR (letter) and clone number.
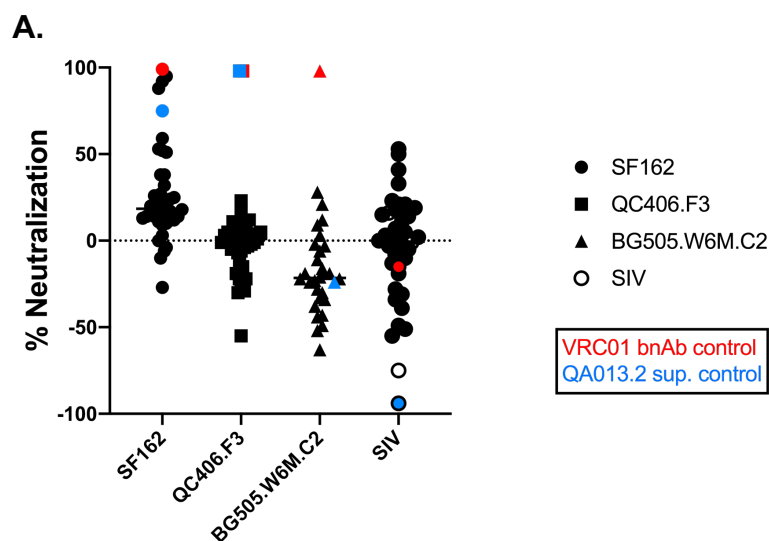
# A

| | Month 27 Plasma IC50 |
|---|---|
| BG505.W6M.ENV.A5 | 581 |
| BG505.W6M.ENV.B1 | 553 |
| BG505.W6M.ENV.C2 | 711 |
| BG505.W14P.ENV.J1 | 363 |
| BG505.W14P.ENV.J2 | 533 |
| BG505.W14P.ENV.S2 | 722 |
| BG505.W14P.ENV.P1 | 763 |
| BG505.W14P.ENV.Q3 | 883 |
| BG505.W14P.ENV.L2 | 892 |
| BG505.W14P.ENV.X2 | 915 |
| BG505.W14P.ENV.T2 | 1120 |
| BG505.M27P.ENV.X1 | 222 |
| BG505.M27P.ENV.W2 | 229 |
| BG505.M27P.ENV.R6 | 232 |
| BG505.M27P.ENV.T1 | 260 |
| BG505.M27P.ENV.Q1 | 283 |
| BG505.M27P.ENV.U1 | 285 |
| BG505.M27P.ENV.W5 | 317 |
| BG505.M27P.ENV.P1 | 332 |
| BG505.M27P.ENV.Z1 | 353 |
| BG505.M27P.ENV.G1 | 406 |
| BG505.M27P.ENV.L1 | 445 |
| BG505.M27P.ENV.G2 | 581 |
| BG505.M27P.ENV.M2 | 643 |
| BG505.M27P.ENV.J4 | 1105 |
| BG505.M27P.ENV.K1 | 1875 |
| SIV | <1:100 |

# B

| | | BG505 Env Isolates | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Week 6 | Week 14 | | | | Month 27 | | | |
| Family | Antibody | C2 | J1 | Q3 | X2 | P1 | J4 | M2 | T1 | Z1 |
| 1 | BG505.02 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| | BG505.03 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| 2 | BG505.12 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| 3 | BG505.21 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| 4 | BG505.23 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| | BG505.26 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| | BG505.27 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| | BG505.33 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| 6 | BG505.35 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| | BG505.36 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| | BG505.37 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| 7 | BG505.40 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| | BG505.42 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| 10 | BG505.48 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| 12 | BG505.51 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| 13 | BG505.52 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| | BG505.54 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| 14 | BG505.59 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| 15 | BG505.60 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| 16 | BG505.62 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| | BG505.65 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |
| 17 | BG505.68 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 | >20 |

**Figure S2. Neutralization of autologous variants by BG505 plasma, related to Figure 3**. (A) BG505 M27 plasma neutralization of autologous Env variants in rows that were from 6 weeks (W6), 14 weeks (W14) and 27 months (M27) of age. SIV was included as a negative control. (B) BG505 nAbs are in rows and autologous Env isolates in columns. Gray indicates that 50% neutralization was not achieved at the highest mAb concentration tested.

**A.**



Legend:
- ● SF162
- ■ QC406.F3
- ▲ BG505.W6M.C2
- ○ SIV

VRC01 bnAb control
QA013.2 sup. control

**B.**

| Family | Antibody | Heavy Chain | CDRH3 Length (AAs) | VH SHM (%nt) | Light Chain | CDRL3 Length (AAs) | VL SHM (%nt) | Autologous Neutralization of BG505 Virus Variants | | | | | | Heterologous Neutralization of HIV-1 Pseudoviruses | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | W6 | | | W14 | | M27 | Tier 1 | | | | Tier 2 | | |
| | | | | | | | | | | | | | | Clade B | Clade A | Clade A | Clade B | Clade C | | Clade D |
| | | | | | | | | A5 | B1 | C2 | P1 | Q3 | X1 | SF162 | Q461.D1 | Q842.d16 | 6535 | QC406.F3 | CAP210.E8 | QD435.A4 |
| BG505 M27 Plasma | | | | | | | | 581 | 553 | 711 | 763 | 883 | 222 | >3200 | >3200 | 482 | 154 | 971 | 590 | 548 |
| 13 | BG505.70 | V5-51 D2-21 J3 | 22 | 5.9 | KV1-9 J3 | 11 | 15.8 | >50 | >50 | >50 | >50 | >50 | >50 | <1.5625 | <1.5625 | 7.0 | >50 | >50 | >50 | >50 |
| 2 | BG505.71 | V1-69 D4-17 J5 | 10 | 10.4 | KV4-1 J1 | 11 | 5.1 | >50 | >50 | >50 | >50 | >50 | >50 | <1.5625 | 2.10 | >50 | >50 | >50 | >50 | >50 |
| 19 | BG505.72 | V1-69 D2-2 J6 | 28 | 9.0 | KV1-33 J4 | 11 | 11.6 | >50 | >50 | >50 | >50 | >50 | >50 | 8.45 | 22.8 | >50 | >50 | >50 | >50 | >50 |
| 3 | BG505.73 | V1-69 D2-2 J6 | 28 | 7.9 | KV3-15 J1 | 10 | 4.7 | >50 | >50 | >50 | >50 | >50 | >50 | <1.5625 | <1.5625 | >50 | >50 | >50 | >50 | >50 |

**Figure S3. Isolation of additional M27 mAbs from BG505 using alternative primer sets, related to Figure 1.** (A) Screening summary of the 45 isolated mAbs from BG505 using alternate primer pools (Doria-Rose et al., 2016; Liao et al., 2009). Pseudoviruses used for initial mAb screening are shown on the x-axis, while percent neutralization is shown on the y-axis. All BG505 antibodies and the QA013.2 bnAb (Williams et al., 2018) were tested at a 1:2 dilution of unpurified supernatant three days following transfection. VRC01 bnAb was tested at 50 ug/mL final concentration. (B) Autologous and heterologous neutralization profiles of the four nAbs from (A) along with antibody characteristics. Antibodies were tested in serial dilution starting at 50 ug/mL. A second clade C pseudovirus was tested (CAP210.E8), and was not neutralized by any of the BG505 nAbs at 50 µg/mL. SIV was included as a negative control and was not neutralized by BG505 M27 plasma (1:100 dilution) or the four monoclonal nAbs (50 µg/mL). Darker blue shading indicates more potent neutralization. Gray indicates that 50% neutralization was not achieved at the highest mAb concentration tested.

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BG505.57
HIV_BG505.W6.C2 Reference    IRSENITNNAKNILVQFNTPVQINCTRPNNNTRKSIRIGPGQAFYATGDIIGDIRQAHCTVSKATWNETLGKVVKQLRKH    Fold-enrichment
HIV_Env_BG505.W6.C2          ----------KNILVQFNTPVQINCTRPNNNTRKSIRIGPGQAFYATGD-----------------------------    495
HIV_Env_CladeA1             ---------------VQLTKPVKINCTRPNNNTRKSIRIGPGQAFYATGDIIGD------------------------    465
HIV_Env_CladeC              --------------------EIVCTRPNNNTRKSIRIGPGQTFYATGDIIGDIRQAHCN------------------    376
HIV_Env_Q23                 ----------------VQPVTIKCIRPNNNTRKSIRIGPGQAFYATGDIIGDIRQ--------------------    310
HIV_Env_BG505.W6.C2         ------------------------------NTRKSIRIGPGQAFYATGDIIGDIRQAHCTVSKATWNET----------    249
HIV_Env_CladeB              -------------------------RKSIHIGPGRAFYTTGEIIGDIRQAHCNISRAKWNNTLK---------    191
HIV_Env_Q461.d1             ------------------------CIRPGNNTRKSVRIGPGQAFYATGDITGDIRNAHCVVNR----------------    107
HIV_Env_QB850.632p.B10      ------------------------PNNNTRTSIRIGPGQAFYATGDIIGDIRQAHCNVSKSKW---------    63
HIV_Env_QB850.72p.C14_A1    ------------------------RTSIRIGPGQAFYATGGIIGDIRQAHCNVSKSKWNETLQ---------    37
HIV_Env_CladeA2             ----------------NKPVPITCIRPNNNTRKSIRFGPGQAFYT-NDIIGDIRQA----------------------    31
HIV_Env_CladeB              -------------IIVQLNESVEINCTRPNNNTRKSIHIGPGRAFYTTGEII----------------------    27
HIV_Env_CladeC              -RSENLTNNAKTIIVHLNESVEIVCTRPNNNTRKSIRIGF------------------------------    14
HIV_Env_Q461.d1             ----NITNNAKNIIVQFTKFVNITCIRPGNNTRKSVRIGPGQA------------------------------    5

HIV_Env_BF520.W14.C2        ---------------QLASPVTINCIRPNNNTRKSVHLGPGQAFYATDGIIGEI----------------------
HIV_Env_QA013.70I.ENV.H1    ----------------LNESVPINCTRFYNNTRKGEHMGPGRALFT-ERIVGDIRQ----------------------
HIV_Env_QA013.385M.ENV.R3   ------------------IKINCIRPNNNTGKSVHIGPGQAFYATGEIIGDIRQAHC-------------------
HIV_Env_QB850.72p.C14_A1    ------------IIVQLNESVIINCTRPNNNTRTSIRIGPGQAFYATGGII----------------------
HIV_Env_QB850.632p.B10      -------NNAKNILVQLNESVIINCTRPNNNTRTSIRIGPGQAFYA----------------------
HIV_Env_QC406.F3            ------------IIVHLKEPVSINCTRPNNNTRESIGIGPGQMFYAMGAII----------------------
HIV_Env_CladeD              ----------------VQLNESVTINCTRFYNNTRQRTPIGPGQALYT-TRIKGDI----------------------
HIV_Env_BF520.W14.C2        ----------------------------------VHLGPGQAFYATDGIIGEIRQAHCNVSKKEWNSTLQKVA------
HIV_Env_CladeA2             -----------------------------------FGPGQAFYT-NDIIGDIRQAHCNINKTKWNATLQKVAEQL---
HIV_Env_CladeC              -----------------------------------QTFYATGDIIGDIRQAHCNISEDKWNKTLQKVSKKLKEH
HIV_Env_CladeD              -----------------------------------RTPIGPGQALYT-TRIKGDIRQAHCNISRAEWNKTLQQVA-----
HIV_Env_Q23                 -----------------------------------IGPGQAFYATGDIIGDIRQAHCNVTRSRWNKTLQEVAEK----
HIV_Env_QA013.70I.ENV.H1    -----------------------------------HMGPGRALFT-ERIVGDIRQAYCSISGMGWNKTLQQVADK----
HIV_Env_QA013.385M.ENV.R3   -----------------------------------GQAFYATGEIIGDIRQAHCNVSKTQWNKTLQEVANKLKT-
HIV_Env_QC406.F3            -----------------------------RESIGIGPGQMFYAMGAIIGDIRQAHCNISGEKWNNTLQ---------
HIV_Env_CladeA1             -----------------------------SIRIGPGQAFYATGDIIGDIRQAHCNVSRSEWNKTLQKV-------


BG505.61
HIV_BG505.W6.C2 Reference    IRSENITNNAKNILVQFNTPVQINCTRPNNNTRKSIRIGPGQAFYATGDIIGDIRQAHCTVSKATWNETLGKVVKQLRKH    Fold-enrichment
HIV_Env_CladeA1             --------------VQLTKPVKINCTRPNNNTRKSIRIGPGQAFYATGDIIGD-----------------------    478
HIV_Env_BG505.W6.C2         ----------KNILVQFNTPVQINCTRPNNNTRKSIRIGPGQAFYATGD-----------------------------    472
HIV_Env_CladeC              -----------------EIVCTRPNNNTRKSIRIGPGQTFYATGDIIGDIRQAHCN------------------    396
HIV_Env_Q23                 ------------------VQPVTIKCIRPNNNTRKSIRIGPGQAFYATGDIIGDIRQ------------------    332
HIV_Env_BG505.W6.C2         --------------------------NTRKSIRIGPGQAFYATGDIIGDIRQAHCTVSKATWNET-----------    211
HIV_Env_CladeB              ----------------------------RKSIHIGPGRAFYTTGEIIGDIRQAHCNISRAKWNNTLK---------    189
HIV_Env_Q461.d1             ------------------------CIRPGNNTRKSVRIGPGQAFYATGDITGDIRNAHCVVNR------------------    90
HIV_Env_QB850.72p.C14_A1    ---------------------------RTSIRIGPGQAFYATGGIIGDIRQAHCNVSKSKWNETLQ---------    69
HIV_Env_QB850.632p.B10      ---------------------------PNNNTRTSIRIGPGQAFYATGDIIGDIRQAHCNVSKSKW--------------    51
HIV_Env_CladeB              -----------IIVQLNESVEINCTRPNNNTRKSIHIGPGRAFYTTGEII----------------------    22
HIV_Env_CladeA2             ----------------NKPVPITCIRPNNNTRKSIRFGPGQAFYT-NDIIGDIRQA----------------------    19

HIV_Env_BF520.W14.C2        ---------------QLASPVTINCIRPNNNTRKSVHLGPGQAFYATDGIIGEI----------------------
HIV_Env_QA013.70I.ENV.H1    ----------------LNESVPINCTRFYNNTRKGEHMGPGRALFT-ERIVGDIRQ----------------------
HIV_Env_QA013.385M.ENV.R3   ---------------IKINCIRPNNNTGKSVHIGPGQAFYATGEIIGDIRQAHC--------------------
HIV_Env_QB850.72p.C14_A1    ----------IIVQLNESVIINCTRPNNNTRTSIRIGPGQAFYATGGII----------------------
HIV_Env_QB850.632p.B10      ------NNAKNILVQLNESVIINCTRPNNNTRTSIRIGPGQAFYA----------------------
HIV_Env_QC406.F3            -----------IIVHLKEPVSINCTRPNNNTRESIGIGPGQMFYAMGAII----------------------
HIV_Env_CladeD              --------------VQLNESVTINCTRFYNNTRQRTPIGPGQALYT-TRIKGDI----------------------
HIV_Env_BF520.W14.C2        -------------------------------VHLGPGQAFYATDGIIGEIRQAHCNVSKKEWNSTLQKVA------
HIV_Env_CladeA2             -------------------------------FGPGQAFYT-NDIIGDIRQAHCNINKTKWNATLQKVAEQL---
HIV_Env_CladeC              -------------------------------QTFYATGDIIGDIRQAHCNISEDKWNKTLQKVSKKLKEH
HIV_Env_CladeD              -------------------------------RTPIGPGQALYT-TRIKGDIRQAHCNISRAEWNKTLQQVA-----
HIV_Env_Q23                 -------------------------------IGPGQAFYATGDIIGDIRQAHCNVTRSRWNKTLQEVAEK----
HIV_Env_QA013.70I.ENV.H1    -------------------------------HMGPGRALFT-ERIVGDIRQAYCSISGMGWNKTLQQVADK----
HIV_Env_QA013.385M.ENV.R3   -------------------------------GQAFYATGEIIGDIRQAHCNVSKTQWNKTLQEVANKLKT-
HIV_Env_QC406.F3            -----------------------------RESIGIGPGQMFYAMGAIIGDIRQAHCNISGEKWNNTLQ---------
HIV_Env_CladeA1             -----------------------------SIRIGPGQAFYATGDIIGDIRQAHCNVSRSEWNKTLQKV-------


BG505.63
HIV_BG505.W6.C2 Reference    IRSENITNNAKNILVQFNTPVQINCTRPNNNTRKSIRIGPGQAFYATGDIIGDIRQAHCTVSKATWNETLGKVVKQLRKH    Fold-enrichment
HIV_Env_BG505.W6.C2         ----------KNILVQFNTPVQINCTRPNNNTRKSIRIGPGQAFYATGD-----------------------------    520
HIV_Env_CladeA1             --------------VQLTKPVKINCTRPNNNTRKSIRIGPGQAFYATGDIIGD-----------------------    498
HIV_Env_CladeC              --------------------EIVCTRPNNNTRKSIRIGPGQTFYATGDIIGDIRQAHCN------------------    416
HIV_Env_Q23                 ------------------VQPVTIKCIRPNNNTRKSIRIGPGQAFYATGDIIGDIRQ------------------    364
HIV_Env_BG505.W6.C2         --------------------------NTRKSIRIGPGQAFYATGDIIGDIRQAHCTVSKATWNET-----------    254
HIV_Env_Q461.d1             ------------------------CIRPGNNTRKSVRIGPGQAFYATGDITGDIRNAHCVVNR----------------    194
HIV_Env_CladeB              ----------------------------RKSIHIGPGRAFYTTGEIIGDIRQAHCNISRAKWNNTLK---------    115
HIV_Env_QB850.72p.C14_A1    ---------------------------RTSIRIGPGQAFYATGGIIGDIRQAHCNVSKSKWNETLQ---------    45
HIV_Env_QB850.632p.B10      ---------------------------PNNNTRTSIRIGPGQAFYATGDIIGDIRQAHCNVSKSKW--------------    45
HIV_Env_CladeB              -----------IIVQLNESVEINCTRPNNNTRKSIHIGPGRAFYTTGEII----------------------    8

HIV_Env_BF520.W14.C2        ---------------QLASPVTINCIRPNNNTRKSVHLGPGQAFYATDGIIGEI----------------------
HIV_Env_QA013.70I.ENV.H1    ----------------LNESVPINCTRFYNNTRKGEHMGPGRALFT-ERIVGDIRQ----------------------
HIV_Env_QA013.385M.ENV.R3   --------------------IKINCIRPNNNTGKSVHIGPGQAFYATGEIIGDIRQAHC--------------------
HIV_Env_QB850.72p.C14_A1    -----------IIVQLNESVIINCTRPNNNTRTSIRIGPGQAFYATGGII----------------------
HIV_Env_QB850.632p.B10      -------NNAKNILVQLNESVIINCTRPNNNTRTSIRIGPGQAFYA----------------------
HIV_Env_QC406.F3            -----------IIVHLKEPVSINCTRPNNNTRESIGIGPGQMFYAMGAII----------------------
HIV_Env_CladeD              ----------------VQLNESVTINCTRFYNNTRQRTPIGPGQALYT-TRIKGDI----------------------
HIV_Env_Q461.d1             ----NITNNAKNIIVQFTKPVNITCIRPGNNTRKSVRIGPGQA----------------------
HIV_Env_CladeA2             ----------------NKPVPITCIRPNNNTRKSIRFGPGQAFYT-NDIIGDIRQA----------------------
HIV_Env_BF520.W14.C2        ----------------------------------VHLGPGQAFYATDGIIGEIRQAHCNVSKKEWNSTLQKVA------
HIV_Env_CladeA2             ----------------------------------FGPGQAFYT-NDIIGDIRQAHCNINKTKWNATLQKVAEQL---
HIV_Env_CladeC              ----------------------------------QTFYATGDIIGDIRQAHCNISEDKWNKTLQKVSKKLKEH
HIV_Env_CladeD              ----------------------------------RTPIGPGQALYT-TRIKGDIRQAHCNISRAEWNKTLQQVA-----
HIV_Env_Q23                 ----------------------------------IGPGQAFYATGDIIGDIRQAHCNVTRSRWNKTLQEVAEK----
HIV_Env_QA013.70I.ENV.H1    ----------------------------------HMGPGRALFT-ERIVGDIRQAYCSISGMGWNKTLQQVADK----
HIV_Env_QA013.385M.ENV.R3   ----------------------------------GQAFYATGEIIGDIRQAHCNVSKTQWNKTLQEVANKLKT-
HIV_Env_QC406.F3            ------------------------------RESIGIGPGQMFYAMGAIIGDIRQAHCNISGEKWNNTLQ---------
HIV_Env_CladeA1             ------------------------------SIRIGPGQAFYATGDIIGDIRQAHCNVSRSEWNKTLQKV-------
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**Figure S4. Peptide enrichment for three antibodies tested in PhIP-seq, related to Figure 4.** Alignments in black show the peptides that were significantly enriched in both conditions (2 ng, 20 ng), arranged in descending order of fold-enrichment. Alignments in red show peptides that span this region that were not significantly enriched in both conditions tested. Residues in blue signify where the minimal epitope was extended in cases where there was weak but significant enrichment of a peptide that truncated the minimal epitope sequence. Common sequences among all the enriched peptides are highlighted in gray.

| | gp120 | | | | | gp140 | gp41 | | V1V2 Scaffolds | | V3 Peptides | | | | RSC3 | Trimer | Epitope specificity | | RF-ADCC activity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Clade A | Clade A | Clade A/D | Clade B | Clade C | Clade A | Clade B | Clade C | Clade C | Clade C | Clade A | Clade B | Clade C | Clade D | | Clade A | PhIP-seq | BAMA | |
| | BG505 | Q461.d1 | BL035 | SF162 | ZM109 | ConA | MN | ZA1197 | ZM109 | ZM53 | ConA | ConB | ConC | ConD | RSC3 | BG505 | | | |
| BG505.13 | 23113 | 18527 | 245 | 345 | 8915 | 7908 | 377 | 1 | 0 | 0 | 26454 | 269 | 26323 | 16 | 8 | 8553 | V3 | V3 | -1 |
| BG505.34 | 23889 | 23511 | 23824 | 1266 | 16250 | 12376 | 436 | 8 | 0 | 0 | 26433 | 25965 | 27194 | 23 | 12 | 15248 | V3 | V3 | 58 |
| BG505.48 | 23854 | 21257 | 23694 | 526 | 1041 | 11916 | 395 | 2 | 0 | 0 | 26191 | 25659 | 26987 | 19 | 11 | 15400 | V3 | V3 | 77 |
| BG505.49 | 20908 | 20243 | 20747 | 161 | 1402 | 7058 | 326 | 2 | 0 | 0 | 25468 | 23722 | 26113 | 18 | 3 | 3665 | V3 | V3 | 39 |
| BG505.50 | 23605 | 22647 | 23745 | 291 | 1453 | 9521 | 379 | 4 | 0 | 0 | 25788 | 25213 | 26744 | 17 | 10 | 14968 | V3 | V3 | 59 |
| BG505.56 | 23813 | 23435 | 23866 | 2010 | 11200 | 13331 | 420 | 6 | 0 | 0 | 26031 | 25490 | 26817 | 21 | 7 | 14285 | V3 | V3 | 62 |
| BG505.57 | 23838 | 23449 | 23869 | 2029 | 12480 | 13510 | 437 | 5 | 0 | 0 | 26207 | 25590 | 26785 | 23 | 5 | 14232 | V3 | V3 | 71 |
| BG505.61 | 23779 | 23306 | 23815 | 755 | 4518 | 12517 | 424 | 4 | 0 | 0 | 26231 | 25477 | 26882 | 22 | 8 | 15894 | V3 | V3 | 62 |
| BG505.63 | 23872 | 23775 | 23759 | 527 | 8209 | 12976 | 421 | 2 | 0 | 0 | 26230 | 25726 | 26974 | 23 | 10 | 16357 | V3 | V3 | 82 |
| BG505.68 | 23526 | 21396 | 23505 | 880 | 1102 | 10959 | 403 | 3 | 0 | 0 | 25978 | 25462 | 26707 | 19 | 10 | 11306 | V3 | V3 | 58 |
| BG505.69 | 23880 | 23309 | 23899 | 671 | 6805 | 13223 | 431 | 3 | 0 | 0 | 26504 | 25940 | 27074 | 20 | 11 | 15959 | V3 | V3 | 83 |
| BG505.23 | 3633 | 5194 | 251 | 1928 | 2796 | 65 | 27 | 3 | 2 | 15 | 47 | 26 | 20 | 9 | 13 | 1371 | no hit | gp120, trimer | 0 |
| BG505.25 | 4422 | 6335 | 494 | 3488 | 3296 | 82 | 39 | 3 | 1 | 18 | 42 | 24 | 11 | 10 | 11 | 2165 | no hit | gp120, trimer | 0 |
| BG505.36 | 4246 | 6589 | 32 | 65 | 2673 | 68 | 43 | 1 | 2 | 21 | 44 | 24 | 13 | 10 | 7 | 1322 | no hit | gp120, trimer | 0 |
| BG505.03 | 18 | 12 | 2 | 20 | 782 | 8 | 1 | 1 | 0 | 18 | 36 | 18 | 7 | 7 | 1 | 334 | no hit | no hit | 1 |
| BG505.19 | 2 | 1 | 0 | 1 | 14 | 2 | 1 | 0 | 2 | 14 | 39 | 20 | 6 | 7 | 1 | 269 | no hit | no hit | 4 |
| BG505.42 | 37 | 63 | 6 | 90 | 352 | 10 | 1 | 0 | 1 | 11 | 38 | 19 | 7 | 6 | 2 | 290 | no hit | no hit | 64 |
| BG505.46 | 74 | 113 | 28 | 108 | 278 | 29 | 3 | 1 | 0 | 7 | 159 | 101 | 145 | 8 | 2 | 407 | no hit | no hit | 55 |
| BG505.47 | 243 | 270 | 22 | 102 | 5 | 6 | 3 | 0 | 1 | 15 | 36 | 19 | 7 | 8 | 2 | 119 | | no hit | -2 |

Legend:
- Less than 1,000 MFI
- 1,000 - 10,000 MFI
- 10,000 - 20,000 MFI
- Greater than 20,000 MFI

**Figure S5. BG505 mAb biding to HIV antigens as determined by binding antibody multiplex assay (BAMA), related to Figures 2 and 4.** mAbs were assayed at 25 µg/mLfor binding to various HIV antigens. Binding results are reported as the average median fluorescent intensity (MFI) of background-subtracted technical duplicates.