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CD4 receptor diversity in chimpanzees protects against SIV infection

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Supplementary Information for:

CD4 receptor diversity in chimpanzees protects against SIV infection

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SI Materials and Methods

Chimpanzee samples. Whole blood samples (50 - 100 ml) were obtained from healthy chimpanzees housed at the Yerkes Regional Primate Research Center in Atlanta, GA, the Southwest National Primate Research Center in San Antonio, TX, and the New Iberia Research Center in New Iberia, LA. Small amounts of blood or dried blood spots were also obtained from sanctuary chimpanzees cared for at the Sanaga-Yong Chimpanzee Rescue Center in Cameroon, the Chimpanzee Conservation Center in Guinea, and the Tchimpounga Chimpanzee Rehabilitation Center in the Republic of Congo. All samples were collected for veterinary purposes only or represented leftover specimens from yearly health examinations. Blood samples from US chimpanzees were shipped at room temperature, processed immediately, and used for SIVcpz infection as well as CD4 and CCR5 genotyping studies. Whole blood samples from sanctuary chimpanzees were preserved in RNAlater (1:1 vol/vol), frozen, and used for CD4 genotyping. DNA was extracted from whole blood and dried blood spots using the QIAmp Blood DNA Mini Kit or the Puregene Core Blood Kit (Qiagen). All samples were collected with the approval of the respective Institutional Animal Care and Use Committees. International samples were shipped in compliance with Convention on International Trade in Endangered Species of Wild Fauna and Flora regulations and country-specific import and export permits.

Chimpanzee fecal samples were selected from existing specimen banks previously obtained for molecular epidemiological studies of SIVcpz and *Plasmodium* infections (1-6). Selection criteria included geographic and subspecies distribution, SIVcpz infection status, individual information, sample availability and specimen quality. Samples from both habituated (Gombe, Tai, Bossou) and non-habituated chimpanzees were CD4 genotyped. In the latter cases, samples were selected to represent distinct individuals based on host mitochondrial, and in some instances, microsatellite data (1, 7, 8). Fecal DNA was extracted using the QIAamp Stool DNA mini kit (Qiagen). Relevant sample information is summarized in Tables S3 and S6.

Leftover blood samples were also available from three captive chimpanzees, who had been experimentally infected with SIVcpzANT over two decades ago as part of AIDS pathogenesis and/or vaccine studies (9). Two of these (Cotton and Quinn) were sampled at the National Chimpanzee Sanctuary Chimp Haven in Keithville, Louisiana, while the third (Debbie) was sampled at the Southwest National Primate Research Center in San Antonio, TX. Detailed infection histories and clinical information for these animals have previously been reported (9-11), with additional viral load determinations and CD4 genotyping data shown in Table S4. SIVcpzANT viral loads were determined using a previously reported quantitative PCR designed to detect both HIV-1 and SIVcpz vRNA in plasma (10, 12).

SIV and CD4 constructs. The construction and biological characterization of infectious molecular clones (IMCs) of SIVcpz*Ptt* strains MT145 (GenBank accession number: Q373066), EK505 (Q373065), MB897 (F535994), GAB2 (AF382828), and LB715 (KP861923), and SIVcpz*Pts* strains BF1167 (JQ866001), TAN1 (EF394356), TAN2 (Q374657), and TAN13 (JQ768416) have previously been reported (8, 13-16). Since full-length SIVcpz molecular clones are notoriously unstable, plasmids were grown in MAX Efficiency Stbl2 competent cells (Invitrogen) at 30°C, harvested before reaching saturating density, and each IMC was completely sequenced prior to the infection studies to confirm its integrity. The MB897 IMC was used to generate a replication competent SIVcpz-GFP reporter virus by inserting a GFP-IRES cassette between its *env* and *nef* genes. This construct was further modified by the introduction of a frameshift mutation at position 6,493 to generate an *env*-deficient (GFP-expressing) SIVcpz backbone for pseudotyping studies (the GenBank accession number for the MB897 Δ Env-GFP construct is MK284523).

To test CD4 usage, wild-type or codon-optimized SIVcpz and SIV *env* genes were cloned into the pcDNA3.1 expression vector and mutagenized using the Quikchange XL II kit (Agilent Technologies). *Env* genes from diverse SIV lineages were synthesized from publicly available nucleotide sequences or obtained from collaborators (17), cotransfected with MB897 Δ env-GFP,

and the resulting pseudoviruses were tested for their ability to utilize human and chimpanzee CD4 to mediate cell entry. Of 26 SIV Envs that were synthesized, 10 were infectious in TZM-bl cells (a HeLa-derived line that constitutively expresses human CD4, CCR5 and CXCR4 receptors), 3 of which were identified to be CD4-independent and thus excluded from further analysis. The 7 analyzed Envs included those of SIVmusGAB11 (KF304708), SIVagmTAN1 (U58991), SIVlhoUS7 (AF075269), SIVwrcGM05 (AM937062), SIVascRT11 (KJ461714), SIVsmmFTq (ANN46458), and SIVsmmSL92b (ANN46449).

Full-length chimpanzee and human CD4 genes were amplified from CD4+ T cell RNA using RT-PCR. To ensure linkage of polymorphic sites and preclude PCR artifacts, single genome amplification (SGA) was used to generate full-length chimpanzee CD4 gene sequences (18). Representative alleles were then cloned into the pMSCVpuro expression vector (Takara Bio Inc.) and sequence confirmed.

Generation of viral stocks. SIVcpz infectious molecular clones (6 µg) were transfected into 293T cells using Fugene 6 (Promega) and culture supernatants were tested for reverse transcriptase (RT) activity 72 hours later using a colorimetric assay (Sigma-Aldrich). SIVcpz stocks were titered on TZM-bl cells, which contain integrated luciferase and β-galactosidase reporter genes under the control of an HIV-1 LTR (19). Briefly, TZM-bl cells were seeded overnight in 96-well plates (15,000 cells per well), infected with 3-fold serial dilutions of transfection derived supernatant for 48 hours, and infectious units (IU) were determined by counting the number of β-galactosidase expressing cells (13). Pseudovirus stocks were generated by cotransfecting the MB897ΔEnv-GFP backbone (4.5µg) with wild-type (1.5 µg) or codon-optimized (0.03 µg) SIVcpz or SIV Env expression plasmids, and supernatants were tested for infectivity on TZM-bl cells as described above.

Activation of chimpanzee CD4+ T-cells. The activation of freshly isolated chimpanzee CD4+ T-cells has previously been described (13, 20). Briefly, peripheral blood mononuclear cells (PBMCs) were isolated by gradient centrifugation using Ficoll-Paque Plus (GE Healthcare Life Sciences), and chimpanzee CD4+ T cells were enriched using non-human primate CD4+ MicroBeads and magnetic cell sorting (Miltenyi Biotec). The resulting cell preparations, which contained both CD4+ T-cells and monocytes, were then incubated with staphylococcal enterotoxin B (Toxin Technology) for 12-15 hours (3 µg/ml), and cultured in macrophage media comprised of DMEM with 10% giant cell tumor conditioned medium (Irvine Scientific) and 10% human AB serum (Sigma) to allow differentiation of monocytes into macrophages. After 5 to 6 days, CD4+ T cells were removed from the macrophage feeder layer, and cultured at a density of 1×10^6 /ml in DMEM with 10% FBS and interleukin-2 (30 U/ml) for 24 hours prior to infection. To viably freeze chimpanzee CD4+ T-cells, aliquots were cultured for an additional 10 days at a cell density at 1.5×10^6 /ml. Cells were then rested for 7-8 days before they were frozen (CryoStor CS5, Sigma) and stored in liquid nitrogen. Human CD4+ T-cells and viably frozen chimpanzee CD4+ T-cells were activated using the human T cell Activation/Expansion Kit (Miltenyi Biotec Inc.) as described (21). Human cells were cultured in RPMI 1640-based T-cell medium and chimpanzee cells were cultured in DMEM-based T-cell medium.

SIVcpz infection studies. Activated chimpanzee (and human for control) CD4+ T cells (0.5×10^6) were infected overnight at a multiplicity of infection (MOI) of 0.1 (based on TZM-bl infectious titers) in 300 µl of chimpanzee (or human) T-cell medium. After 12–15 hours, cells were washed three times with HBSS medium and plated in 24-well plates in 2 ml of chimpanzee (or human) T-cell medium. Culture supernatants (100 µl) were harvested every 2–3 days, stored at -70°C , and then monitored for virus replication by quantifying reverse transcriptase (RT) activity (Sigma-Aldrich), or p24 core protein content (AlphaLISA Detection Kit, Perkin Elmer). To infect reactivated chimpanzee CD4+ T cells, 250,000 cells were incubated with virus stocks (10 ng RT activity) in

300 µl of chimpanzee T-cell medium in the presence of 10 µg of DEAE-dextran/ml for 2 hours. Cells were washed thrice using PBS and further cultured in 250 µl of chimpanzee T-cell medium. Culture supernatants (125 µl) were harvested every 2–3 days, stored at –70°C, and 125 µl of fresh chimpanzee T-cell medium was added back to each well. Virus replication was monitored as above.

VSV-G complementation studies. To determine whether the inability of SIVcpz strains to infect chimpanzee CD4+ T cells was due to an entry or post-entry block, the replication competent SIVcpz-MB897-GFP IMC was cotransfected with a VSV-G expression vector (22) in 293-T cells. Transfection stocks (10 ng RT) of wildtype and VSV-G complemented SIVcpz-MB897-GFP virus were then used to infect 10×10^6 CD4+ T-cells from permissive and refractory chimpanzees (as well as from humans for control) in the presence of 10 µg/ml of DEAE-dextran for 2 hours. Cells were washed twice using PBS and further cultured in T-cell media. The number of infected cells was determined by measuring the percentage of GFP-positive cells 48 hours post-infection using a Guava flow cytometer (Millipore).

CD4 and CCR5 genotyping of captive chimpanzees. Total RNA was extracted from activated CD4+ T-cells using the RNA-Easy kit (Qiagen), and reverse transcribed using Superscript III and a CD4-specific primer (CD4-mRNA-out-R: 5'-GAAACGCGGGGCAGACACCTGG-3'). cDNA was amplified using ape-consensus primers and subjected to single genome amplification (SGA) to ensure linkage of polymorphic sites (18). Briefly, cDNA was end-point diluted such that fewer than one in three amplification reactions was positive, which precluded PCR artifacts such as *Taq* polymerase induced mutations and template switching (18). For the first round of PCR, cDNA was amplified in 20 µl containing 0.5 µl dNTPs (10 mM of each dNTP), 10 pmol of each first round primer (CD4-mRNA-out-F: 5'-GGCTCAGGTCCCTACTGGCTCA-3' and CD4-mRNA-out-R: 5'-GAAACGCGGGGCAGACACCTGG-3'), 1x High Fidelity platinum PCR buffer, 2 mM MgSO₄, and

0.025 U/μl platinum *Taq*High Fidelity polymerase (Invitrogen). For the second round PCR, 1 μl of the first round product was amplified in 20 μl under the same conditions using second round primers (5'-CD4-mRNA-in-F:TCAGGCCCTGCCTCCCTC-3' and CD4-mRNA-in-R: 5'-GGGAGGCTGCAAGTGGGATC-3'). Cycling conditions included an initial denaturation step of 2 minutes at 94°C, followed by 35 cycles of denaturation (94°C, 10 sec), annealing (55°C, 30 sec), and elongation (68°C, 2 min), followed by a final elongation step of 10 minutes at 68°C. For each chimpanzee, at least four amplicons were sequenced to determine the CD4 genotype (Table S2).

The chimpanzee CCR5 gene was amplified from CD4+ T cell RNA or genomic DNA using single round PCR and ape-consensus primers CCR5-F (5'-CGTTCCCCTACAAGAACTCTCC-3') and CCR5-R (5'-TTCCTTTTAAAAAGACCTCTC-3'). Cycling conditions included an initial denaturation step of 2 minutes at 94°C, followed by 40 cycles of denaturation (94°C, 10 sec), annealing (55°C, 30 sec), and elongation (68°C, 2 min), followed by a final elongation step of 10 minutes at 68°C. Amplicons were sequenced using MiSeq as described (21).

CD4 genotyping of wild and sanctuary chimpanzees. CD4 coding exons 2 and 3 were amplified from fecal or whole blood DNA using consensus primers located in adjacent intron regions (CD4-exon2-out-F 5'-GCAAAGGTGGAGGATGGGGTAG-3'; CD4-exon2-in-F 5'-TCGTCGGCAGCGTCAGATGTGTATAAGAGACAGGGCGACATTGAGACCTGACTCCT-3'; CD4-exon2-in-R 5'-GTCTCGTGGGCTCGGAGATGTGTATAAGAGACAGCATAGTGTGTTTTCTCCCTGGATG-3'; CD4-exon2-out-R 5'-GACCAGATCTCAGACACCAAAG-3'; CD4-exon3-out-F 5'-CCTGTCTCCAGGGCGCCTCAG-3'; CD4-exon3-in-F 5'-TCGTCGGCAGCGTCAGATGTGTA
TAAGAGACAGCTCAGTCCCCCCCATATGTC-3'; CD4-exon3-in-R 5'-GTCTCGTGGGCTCG
GAGATGTGTATAAGAGACAGGGTATCCTCATCCCCACCTGC-3'; CD4-exon3-out-R 5'-AAGG
GAACCAGGCAGGAGGTATC-3'). MiSeq-specific adapters were added to the 5' end of the inner primers (underlined). For the first round of PCR, 5 μl of sample DNA was amplified in a 25 μl reaction volume containing 0.5 μl dNTPs (10 mM of each dNTP), 10 pmol of each first round

primer, 2.5 µl PCR buffer, 0.1 µl BSA solution (50 µg/ml), and 0.25 µl Expand Long Template enzyme mix (Expand Long Template PCR System). Cycling conditions included an initial denaturation step of 2 minutes at 94°C, followed by 15 cycles of denaturation (94°C, 10 sec), annealing (50°C, 30 sec), and elongation (68°C, 45 sec), followed by 35 cycles of denaturation (94°C, 10 sec), annealing (52°C, 30 sec), and elongation (68°C, 45 sec; with 10-sec increments for each successive cycle), followed by a final elongation step of 10 minutes at 68°C. For the second round PCR, 2 µl of the first-round product was used in 25 µl reaction volume. Cycling conditions included an initial denaturation step of 2 minutes at 94°C, followed by 50 cycles of denaturation (94°C, 10 sec), annealing (55°C, 30 sec), and elongation (68°C, 45 sec), followed by a final elongation step of 10 minutes at 68°C. Exon 2 (247 bp) and exon 3 (222 bp) regions were initially amplified only once to determine their zygosity. Samples that exhibited a homozygous genotype at one or both loci were then amplified at least seven more times to preclude allelic drop-out. Amplification was examined by gel electrophoresis (2% agarose) and positive wells were pooled. For a minority of samples, only a subset of the PCR replicates was positive, indicating limited host DNA content (see Table S3 for the number of sequenced amplicons per CD4 allele).

For MiSeq sequencing, pooled PCR products were diluted in nuclease-free sterile water (1:10) and subjected to two rounds of PCR to add Illumina barcodes and enrich for properly indexed DNA products (21, 23, 24). The resulting libraries were pooled, purified with Ampure Beads (Beckman Coulter), quantified using a Qubit Fluorometer (Thermo Scientific) and TapeStation 2200 (Agilent), and diluted to a final DNA concentration of 4 nM. A randomly fragmented (adapter ligated) control library of PhiX DNA (Illumina) was added to increase read length diversity to ensure cluster recognition on the flow-cell. Both PhiX control and CD4 amplicon libraries were adjusted to a final DNA concentration of 12 pM and mixed 1:1 prior to loading onto the sequencing reagent cartridge. All exon 2 and 3 amplicons were sequenced in their entirety

using v2 chemistry (500 cycle kits) without fragmentation to ensure linkage of polymorphic sites (25, 26). A minimum of 10,000 reads was determined for each sample.

Transient transfection assay to determine CD4 usage. To determine the ability of SIVcpz and SIV Envs to utilize the various chimpanzee CD4 alleles, we developed a single round infection assay. 293T cells were co-transfected in a 6-well plate with chimpanzee CCR5 (0.25 µg) and CD4 (1.5 µg) expression plasmids using 5.25 µl of Fugene 6 (Promega). Cells were trypsinized 48 hours post-transfection and plated on 96-well plates at a density of 2×10^4 cells/well. The following day, cells were infected with 5,000 IU of SIVcpz and SIV Env containing (GFP expressing) pseudovirus by spinoculation (1,200g for two hours) in a 100 µl volume. Cells were cultured at 37°C for another 48 hours, after which cells were fixed in 2% formaldehyde and GFP expression was quantified using a Guava flow cytometer (Millipore). Cell aliquots removed at the time of infection were stained using CD4 (CD4-APC, ThermoFisher) and CCR5 (CCR5-PE, R&D Systems) specific antibodies to determine receptor and coreceptor expression. The percentage of infected cells was then calculated by dividing the number of GFP expressing cells by the number of CD4 and CCR5 expressing cells for each transfected cell population (Fig. S4). Each Env/CD4 combination was tested in triplicate and repeated in three different experiments.

Immunoprecipitation of radiolabelled CD4 and endoglycosidase H treatment. 293T cells (3×10^5) were transfected with human and chimpanzee (QQNVP and QQNVT) CD4 expression plasmids (3 µg) using the calcium phosphate method. One day after transfection, cells were metabolically labeled for 16 hours with 100 µCi/ml of [³⁵S] methionine-cysteine (³⁵S protein labeling mix; Perkin-Elmer) in Dulbecco's modified Eagle's medium (DMEM) lacking methionine and cysteine and supplemented with 5% dialyzed fetal bovine serum (FBS). Cells were subsequently lysed in RIPA buffer (140 mM NaCl, 8 mM Na₂HPO₄, 2 mM NaH₂PO₄, 1% NP40, and 0.05% sodium dodecyl sulfate) and radiolabeled CD4 was precipitated from cell lysates using

1 µg of the anti-CD4 monoclonal antibody OKT4 (BioLegend) in the presence of 10% protein A-Sepharose (American BioSciences). Half of the precipitated CD4 was treated with glycoprotein denaturing buffer at 100 °C for 10 min, followed by endoglycosidase H treatment at 37°C for 1 hour (Endo H kit, New England BioLabs). Aliquots of endoglycosidase H treated and untreated CD4 were loaded on 12.5% polyacrylamide gels and analyzed by autoradiography using a PhosphorImager (Molecular Dynamics).

Frequency of D1 domain polymorphisms in human CD4. Three data sets were queried for missense mutations in the D1 domain of the human *CD4* gene using dbSNP (<https://www.ncbi.nlm.nih.gov/snp> dbSNP Build ID: 152) or the gnomAD browser. These included the UK10K data base (27), the NHLBI Trans-Omics for Precision Medicine database (<https://www.nhlbiwgs.org/>), and the gnomAD v2.1 no-TopMed filter database (28), where human genome sequences from over 30 studies are compiled. Polymorphisms with only one occurrence across all data sets were not considered. Frequencies for each missense polymorphism were calculated as the number of occurrences of the variant allele divided by the number of samples, including only studies in which the variant allele was reported. The most common amino acid polymorphism was an alanine to threonine substitution at position 55 (A55T) of the mature CD4 protein (reference SNP ID rs201343243), which was identified by both gnomAD and TOPMed, and has an allele frequency of 6.6×10^{-5} .

Codon based analysis of positive selection. CD4 domain 1 (D1) sequences from 40 primate species, including great apes as well as Old World and New World monkeys, were aligned to perform codon-based tests for positive selection. To account for the diversity of the chimpanzee CD4, two alignments were used. One contained a chimpanzee CD4 sequence (QQNIP allele) frequently found in *P. t. troglodytes*, while the other contained a chimpanzee CD4 sequence (QQNVT allele) almost exclusively found in *P. t. verus*. Applying the Branch-site Unrestricted

Statistical Test for Episodic Diversification (BUSTED) (29) and a site model test from the Phylogenetic Analysis for Maximum Likelihood (PAML) package (30) to both alignments, we found that models that allowed for positive selection in the phylogeny were a significantly better fit to the data than models that did not (Fig. S9). To identify sites under positive selection, we used three different methods: sites indicated by the evidence ratio (ER) metric in BUSTED, the mixed effects model of evolution (MEME), and the Bayes empirical Bayes (BEB) method in PAML (31). The primate sequences that were used included: *Alouatta sara*, KJ531724; *Aotus azarae*, KR902342; *Aotus nancymae*, KR902343; *Aotus vociferans*, KR902344; *Callithrix jacchus*, AF452616; *Cebus capucinus*, XM_017517039; *Cercocebus atys*, KP406149; *Cercopithecus cephus*, LC017837; *Cercopithecus wolfi*, KJ531717; *Chlorocebus aethiops*, D86589; *Chlorocebus pygerythrus*, KU382464; *Chlorocebus sabaeus*, KY225914; *Chlorocebus tantalus*, AF001221; *Colobus angolensis*, XM_011952091; *Colobus guereza*, KJ531721; *Erythrocebus patas*, X73324; *Gorilla beringei*, MK208846; *Gorilla gorilla*, KJ531711; *Homo sapiens*, NM_000616; *Hylobates agilis*, KJ531714; *Lophocebus albigena*, KJ531719; *Macaca fascicularis*, D63349; *Macaca fuscata*, D63348; *Macaca mulatta*, D63347; *Macaca nemestrina*, D63346; *Mandrillus leucophaeus*, XM_011982989; *Microcebus murinus*, XM_012760698; *Miopithecus talapoin*, KJ531716; *Nomascus leucogenys*, KJ531715; *Pan troglodytes troglodytes*, EF437467; *Pan troglodytes verus*, EF437437; *Papio anubis*, KJ531718; *Plecturocebus cupreus*, KJ531723; *Pongo pygmaeus*, KJ531712; *Propithecus coquereli*, XM_012637804; *Rhinopithecus bieti*, XM_017891842; *Rhinopithecus roxellana*, XM_010385914; *Saimiri boliviensis*, XM_003944856; *Saimiri sciureus*, AF452617; *Symphalangus syndactylus*, KJ531713; and *Trachypithecus francoisi*, KJ531722.

Diversity analyses across the chimpanzee CD4 locus. Filtered diversity data were obtained from the Great Ape Genome Project (32) as vcf files. The mean pairwise diversity (π) for each chimpanzee subspecies (excluding known hybrid individuals) was calculated for the region

surrounding the CD4 locus using sliding windows and vcfTools, with window sizes (parameter window-pi) ranging from 100 bp to 5,000 bp moved in steps (parameter window-pi-step) of 5 bp to 100 bp along the chromosome. Since windows with zero diversity are not reported by vcfTools, missing windows in the output were assigned a value of 0. Diversity values along the chromosome were plotted and manually inspected for troughs of diversity. None were observed for *P. t. verus* (Fig. S10). As an alternative method to scan for selective sweeps, allele frequencies for *P. t. verus* polymorphic sites were extracted using bcftools (33) and run in SweepFinder2 (34), with default settings for the -s option and either 5 kb or 100 bp grid size. No selective sweep regions were identified within the CD4 gene with either grid size (using as a threshold the 90th percentile of likelihood ratio values).

Statistical analyses. To assess the effects of CD4 polymorphisms on SIVcpz infection in wild-living chimpanzee communities, we performed a logistic regression of SIVcpz status on sets of indicator variables that specified whether a chimpanzee encoded a particular CD4 substitution or allelic variant. Two different locations were selected where CD4 diversity could be analyzed in the context of high SIVcpz prevalence rates. One included Gombe National Park in Tanzania and the other the Lobéké (LB) and Mambélé (MB) area in southeastern Cameroon. Since the circulating SIVcpz strains differed between the two locations, we modeled the Gombe and Lobéké/Mambélé chimpanzee communities separately. To set the ancestral state as the background, any polymorphism contained within the (g)QQNVP allele was not given an indicator variable. Note that this model does not account for differences in zygosity or synergistic effects of polymorphisms. Instead, the model asks whether the presence of a given substitution or allele in a community is associated with an increase or decrease of SIVcpz infection rate relative to the ancestral (g)QQNVP genotype.

To estimate the effects of CD4 variants on *in vitro* SIVcpz and SIV Env mediated infectivity, we used a hierarchical Bayesian model (35). The proportion of infected cells was measured in

three independent experiments for each Env-CD4 allele combination. The fold-change in infectivity between the two alleles for each Env pseudotyped virus as well as the overall effect for all Envs (Fig. S6) was modeled using Stan (36).

For the SIVcpz Envs and SIV Env glycan panel analysis, the true log of the proportion of infected cells $p_{i,j}$ for env i and allele 1 and replicate j was assumed to be normally distributed with mean:

$$p_{i,1,j} = b_i + r_j + n_{i,j}$$

where b_i represents the base infection rate of env i in allele 1 modeled as:

$$b_i \sim \text{Normal}(x, y)$$

r_j represents a replicate effect of batch effects related to the cell pool, transfection and culture in a particular set of experiments where $r_1 = 0$ and r_2 and r_3 were given flat priors. And $n_{i,j}$ represents variation in infectivity between replicates:

$$n_{i,j} \sim \text{Normal}(0, z)$$

For allele 2, the true log of the proportion of infected cells was modeled as the proportion from allele 1 plus the effect of the change from allele 1 to allele 2:

$$p_{i,2,j} = p_{i,1,j} + c_i$$

where c_i reflects the fold change in infectivity between allele 1 and 2 (note these are log scaled proportions so the fold-change is additive).

In addition, we incorporated the effect of background fluorescence in this assay by modeling the log of the proportion of background fluorescing cells for each replicate as independently normally distributed:

$$b_{i,k,j} \sim \text{Normal}(-6.43, 0.97)$$

where the mean and standard deviation were estimated by measuring the proportion of GFP positive cells in 30 replicates of cells treated with the non-pseudotyped virus backbone. To incorporate this additive error into the log model, it was scaled to an expected fold change as:

$$f_{i,k,j} = \log((e^{b_{i,k,j}} + e^{p_{i,k,l}}) / e^{p_{i,k,l}})$$

The log observed proportion was then:

$$o_{i,k,j} \sim \text{Normal}(p_{i,k,l} + f_{i,k,l}, \sigma^2)$$

where σ^2 was a shared variance across the logged proportions. Parameter x was given a flat prior; variance parameters y , z and σ were given a Gamma(1, .1) prior.

When SIV Envs were tested for infectivity on cells expressing chimpanzee CD4 alleles differing at positions 25, 40, 52 and 55 (Fig. 6C), results were obtained from different transfection experiments, and so a separate replicate term was included for allele 1 and allele 2, $r_{j,1}$ and $r_{j,2}$.

For MB897 Envs with different PNGS changes (Fig. 5B), results were also obtained from different transfection experiments, and so the replicate terms were removed from the model. In addition, to allow for comparison against the wild-type allele, fold change was modeled as change relative to wild type. That is:

$$p_{i,2,j} = p_{i,1,j} + c_i + c_1 \quad \forall i \in 2 \dots n$$

where c_1 was the estimated fold change in infectivity seen in wild type Env and n the number of Envs. The wild type Env was measured in the SIVcpz Env set, and so was given a prior based on the posterior mean estimate of the mean and variance of the overall effect from the corresponding pair of alleles from that analysis.

All analyses were performed in R 3.4.4 (37). Analysis code is archived on Zenodo (<https://zenodo.org/record/2527032>) at DOI <http://doi.org/10.5281/zenodo.2527032>.

SI Figures

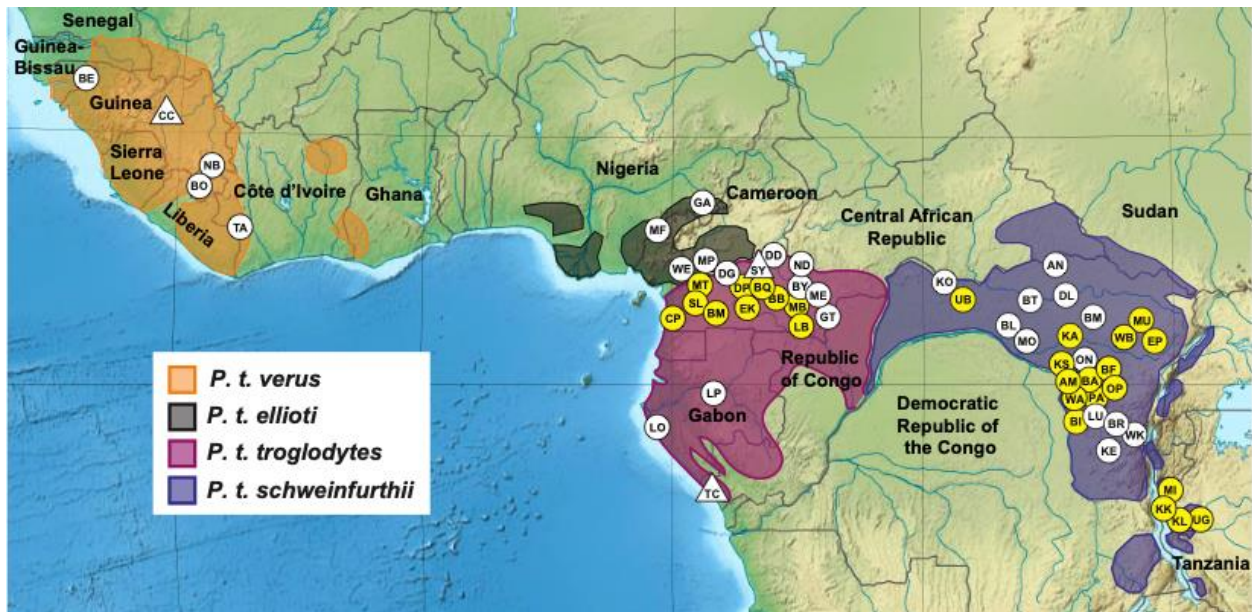


Fig. S1. Location of study sites. Field sites are shown in relation to the ranges of the four subspecies of the common chimpanzee (*P. t. verus*, orange; *P. t. ellioti*, black; *P. t. troglodytes*, magenta; *P. t. schweinfurthii*, blue). Circles identify field sites where fecal samples were collected from wild-living chimpanzees, while triangles denote the location of wildlife rescue centers (SY, Sanaga-Yong Chimpanzee Rescue Center; CCC, Chimpanzee Conservation Center; TC, Tchimpounga Chimpanzee Rehabilitation Center). Forested areas are shown in green, while arid and semiarid areas are depicted in yellow. Major lakes and rivers are shown in blue. Grey lines indicate national boundaries. Sites where SIVcpz was detected are highlighted in yellow.

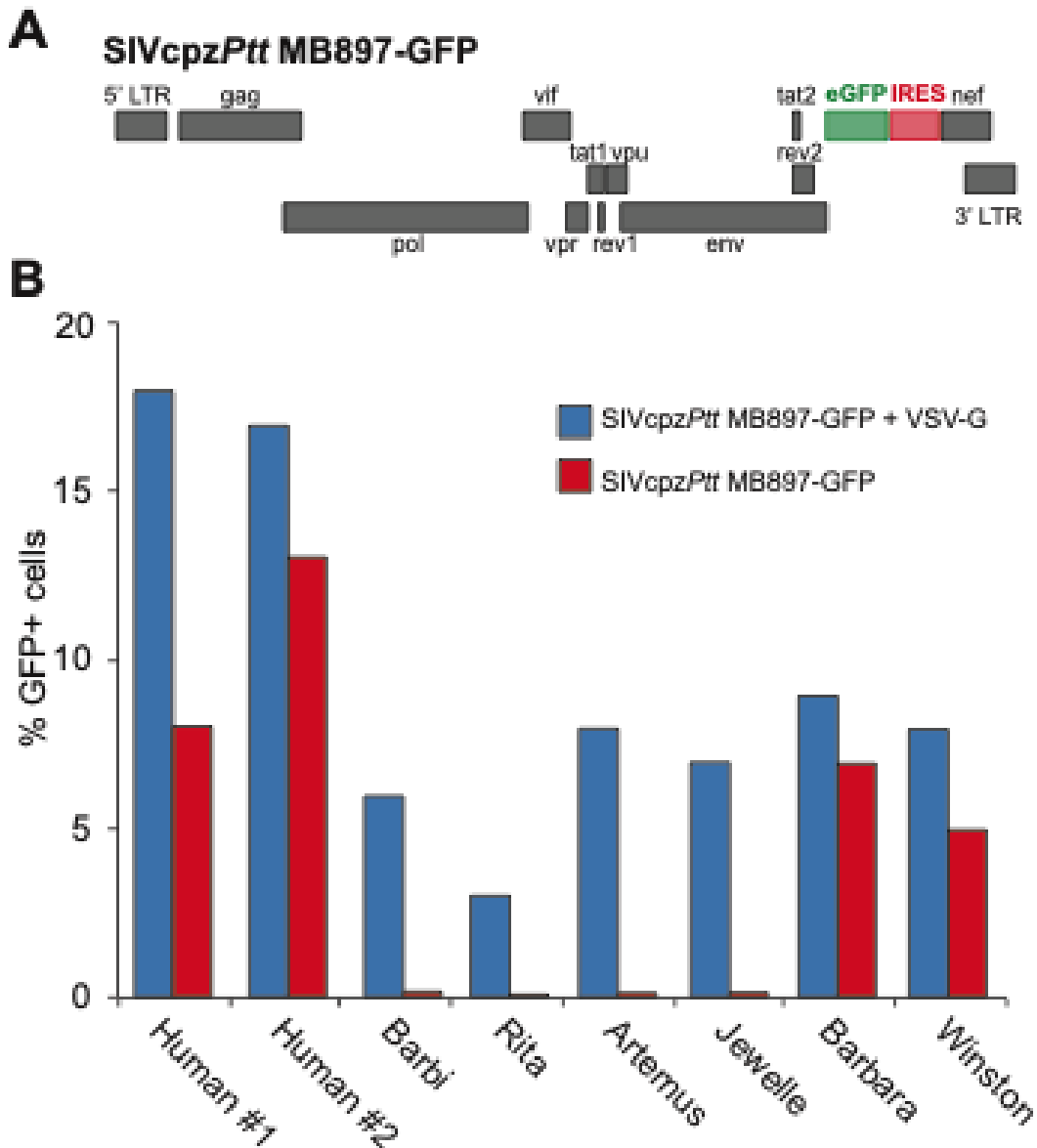


Fig. S2. SIVcpz refractory CD4⁺ T cells exhibit a viral entry block (A) Generation of a replication competent SIVcpz reporter virus. An eGFP-IRES cassette was inserted into the SIVcpzPtt MB897 IMC between the *env* and *nef* genes. (B) CD4⁺ T-cells from two humans, four refractory chimpanzees, and two permissive chimpanzees were infected with the SIVcpzPtt MB897-GFP reporter virus, in the presence (blue bars) and absence (red bars) of VSV-G complementation. The frequency of GFP⁺ cells was measured 48 hours post-infection.

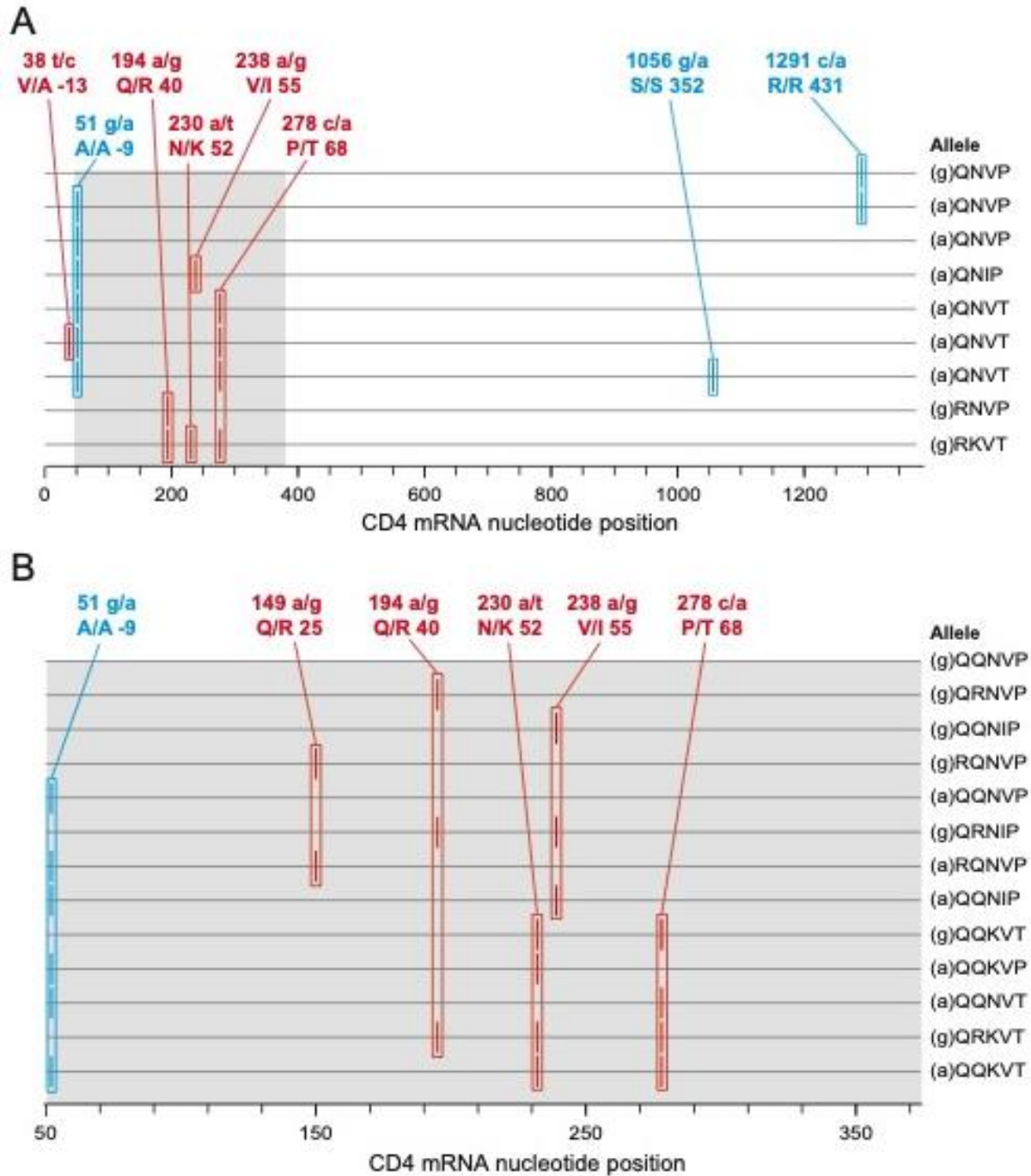


Fig. S3. The chimpanzee CD4 receptor is highly polymorphic. Highlighter plots of (A) full-length CD4 coding sequences amplified from RNA extracted from activated CD4⁺ T cells of captive chimpanzees (Table S2) and (B) partial CD4 alleles inferred from exon 2 and 3 sequences amplified from fecal and blood DNA of wild-living and sanctuary chimpanzees (Table S3). Blue

and red tick marks indicate synonymous and non-synonymous changes, respectively, compared to the ancestral (g)QQNVP allele. Polymorphisms in the D1 domain (grey shaded area) are indicated, with numbers referring to the position in the CD4 nucleotide sequence relative to the ATG start codon (upper numbering) and amino acid position in the mature CD4 protein (lower numbering). Alleles are named to reflect the linkage of polymorphic nucleotide (lower case letter) and amino acid (upper case letters) sequences in the D1 domain.

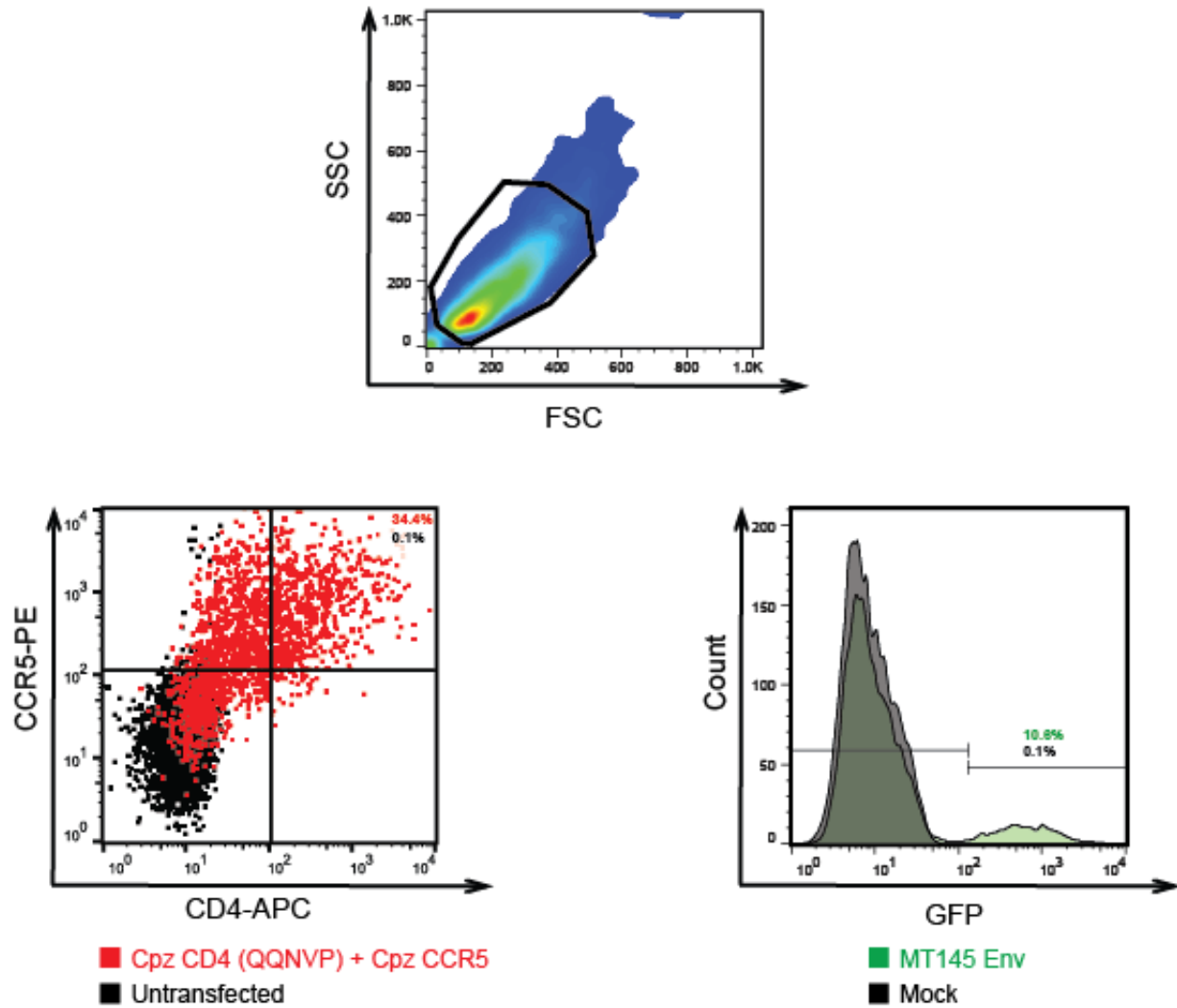


Fig. S4. Flow cytometric analysis of SIV Env mediated cell entry. 293T cells transiently transfected with chimpanzee CD4 and CCR5 were first gated based on size (top), and then analyzed for CD4 and CCR5 expression at the time of infection (lower left). Gates were set based on the fluorescence intensity of non-transfected 293T cells (black). A representative plot of CD4 and CCR5 expression is shown in red. GFP expression was measured 48 hours post virus infection (lower right). Gates were set based on the GFP intensity of cells treated with the non-pseudotyped MB897 Δ env-GFP vector (gray). A representative plot of the GFP signal observed after infection with a MT145 Env pseudotyped virus is shown.

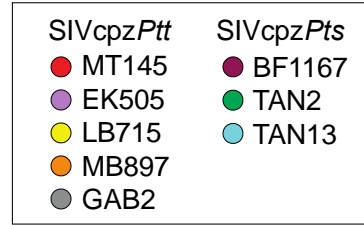
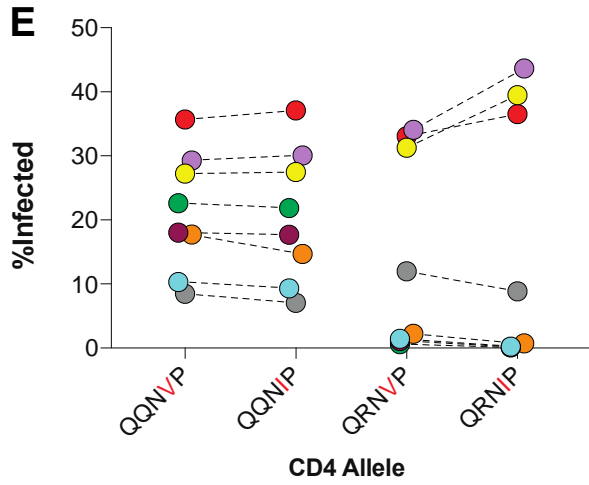
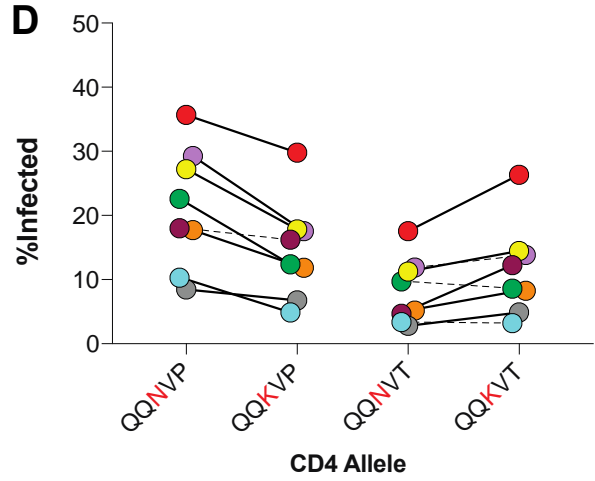
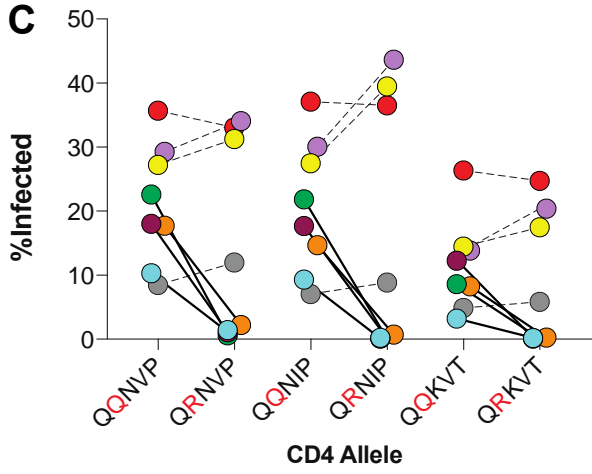
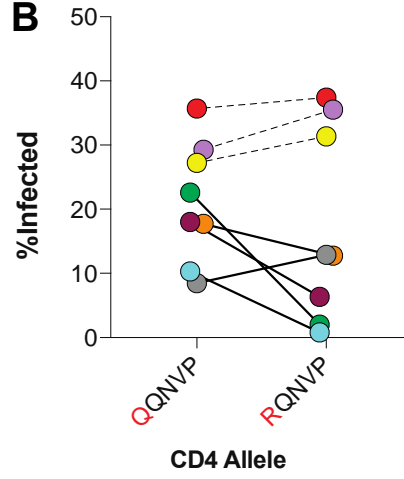
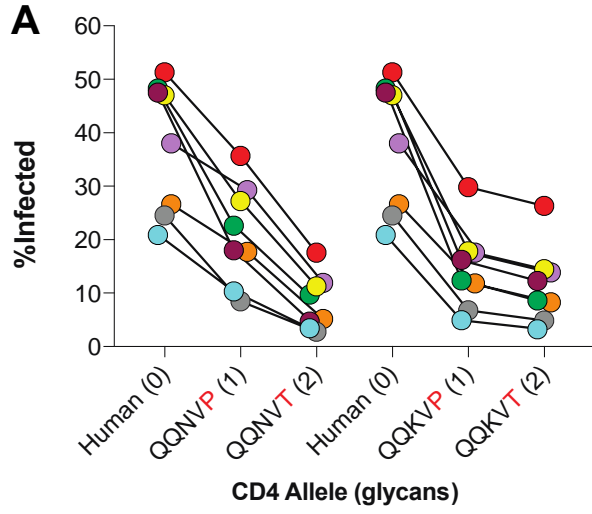


Fig. S5. Effect of CD4 polymorphisms on SIVcpz virus entry. (A-E) The percent of GFP positive cells (y-axis) expressing different CD4 alleles (x-axis) was determined following infection with pseudoviruses carrying the indicated SIVcpz Envs (color coded). (A) Utilization of the human CD4 (no D1 domain PNGS) compared to chimpanzee QQNVP and QQKVP (1 D1 domain PNGS) as well as QQNVT and QQKVT (2 D1 domain PNGSs) alleles. (B-E) Utilization of chimpanzee CD4 allele pairs that differ by single polymorphic residues (highlighted in red). Each data point represents the average of three independent transfection experiments, done in triplicate. Solid lines indicate statistically significant differences as shown in Fig. S6.

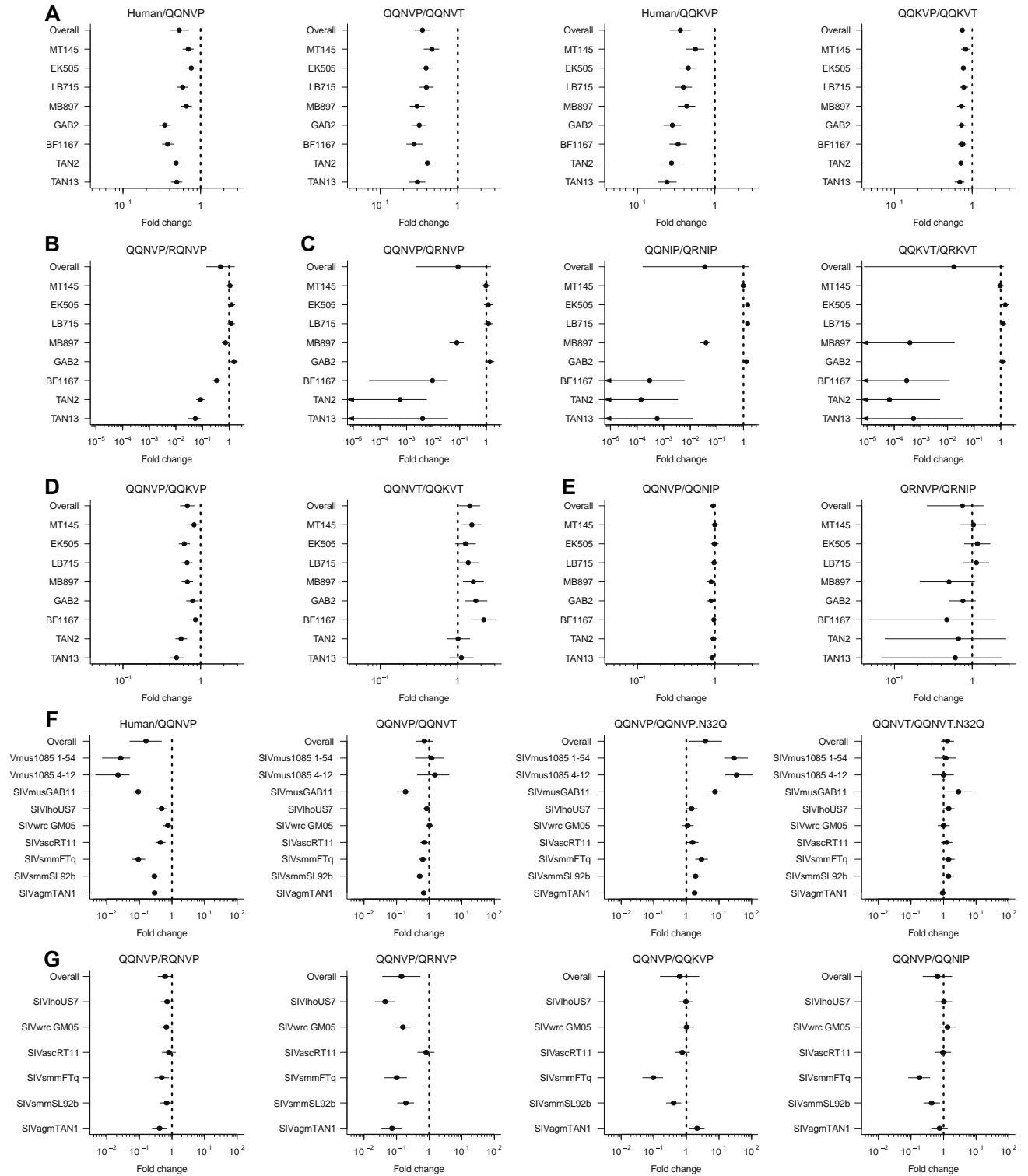


Fig. S6. Statistical analysis of SIV Env infectivity results. A Bayesian hierarchical model was used to estimate differences in SIV Env mediated infectivity between pairs of CD4 alleles. Each

dot shows the posterior mean of the fold change in infectivity between the two alleles for a particular Env as well as the global effect (Overall) for all Envs. Horizontal lines span the 95% credible interval for fold change in infectivity for the SIV Envs indicated; the dotted vertical line corresponds to a fold change of 1 indicating no change in infectivity between alleles. Arrows at the left border indicate where the credible interval continues beyond the range of the plot, indicating that the model cannot accurately estimate just how far infectivity is decreased (i.e., a fold change that drives infectivity to background levels). (A-E) Analyses shown in panels A-E correspond to results shown in Fig. S5A-E. (F) Analyses shown in panel F correspond to results shown in Fig. 6A and B. (G) Analyses shown in panel G correspond to results shown in Fig. 6C.

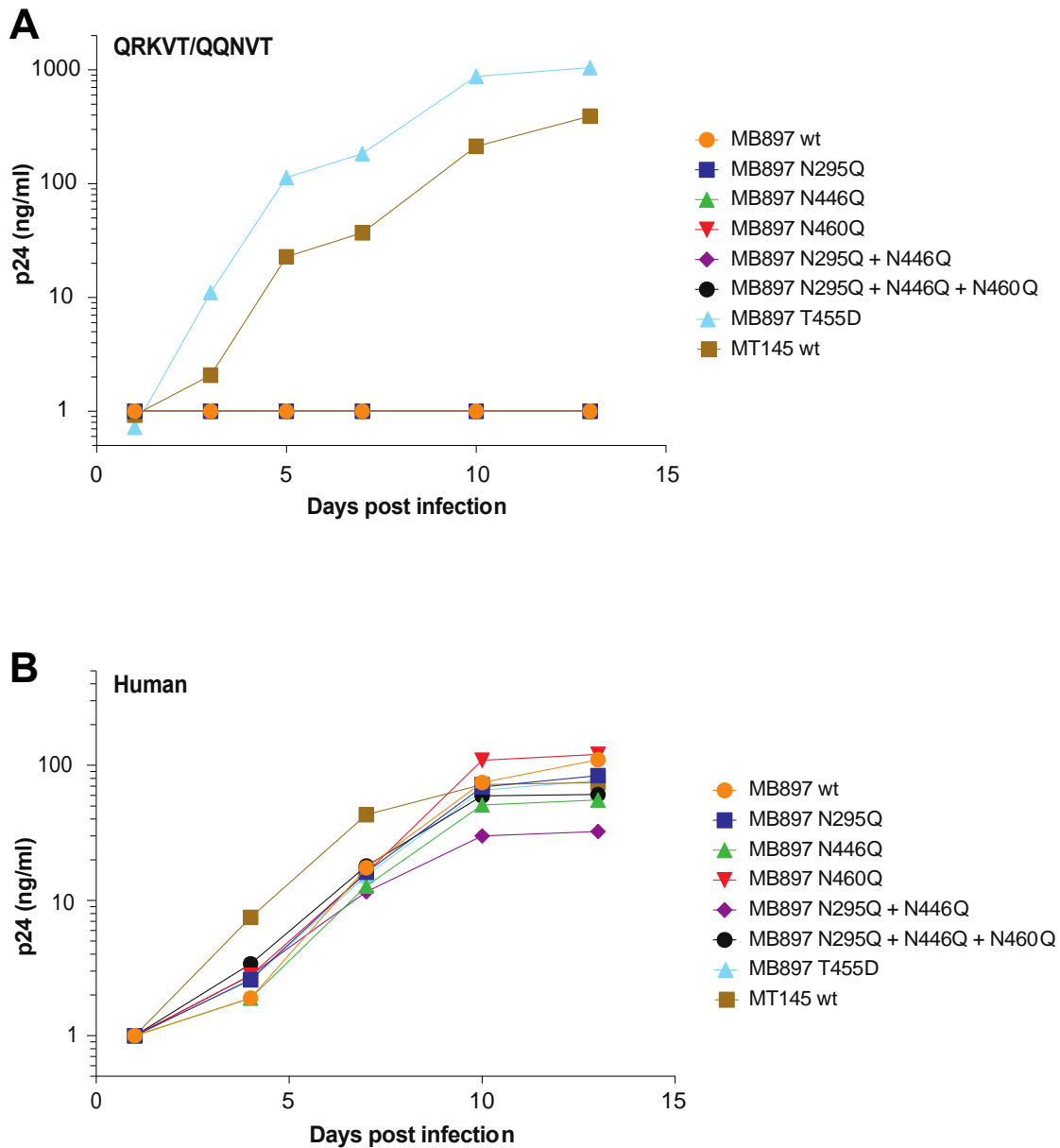


Fig. S7. Replication of SIVcpz MB897 wildtype and mutant viruses in CD4+ T cells. Primary CD4+ T cells from one chimpanzee (A) and a pool of human donors (B) were infected with the indicated SIVcpz MB897 mutants; the promiscuous SIVcpz MT145 strain is shown as a positive control. Virus replication was measured by determining p24 antigen in culture supernatants. The CD4 genotype for the chimpanzee in panel A is indicated.

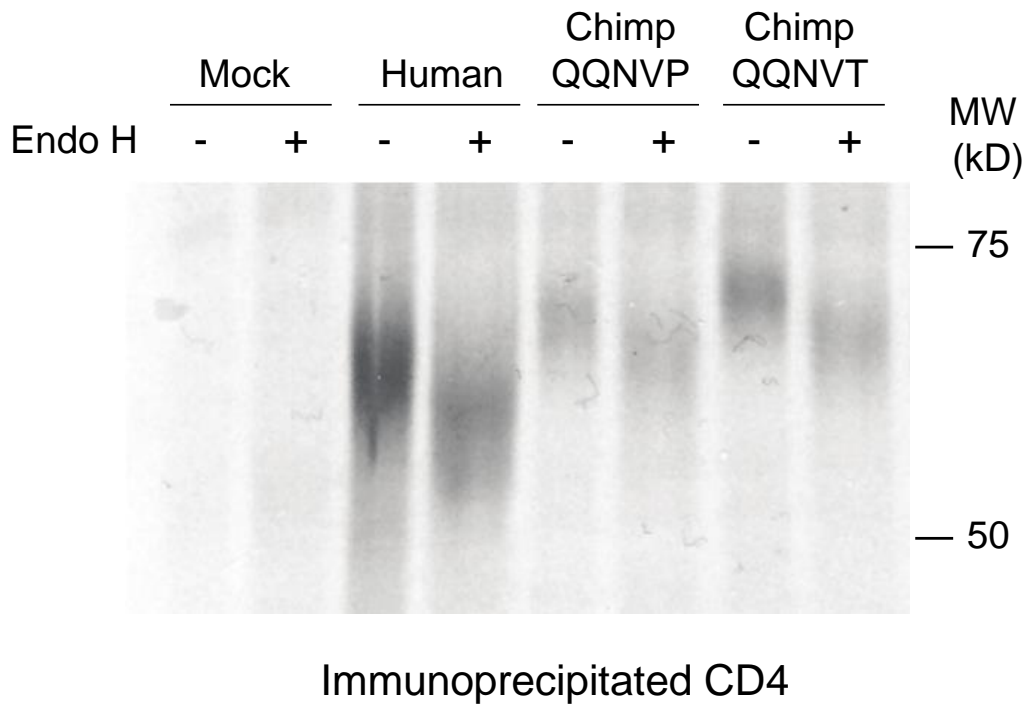


Fig. S8. Glycosylation analysis of human and chimpanzee CD4 receptors. 293T cells were transfected with plasmids encoding the indicated CD4 alleles. Cells were incubated with [³⁵S] methionine-cysteine for 16 hours to label nascent proteins, lysed, and radiolabeled CD4 was immunoprecipitated before (-) and after (+) endoglycosidase H (Endo H) treatment and subjected to SDS-polyacrylamide gel electrophoresis (SDS-PAGE). Migration differences are consistent with the number of PNGSs in the respective CD4 alleles. Shifts of the same CD4 allele before and after Endo H treatment indicate glycan occupancy (note that both human and chimpanzee CD4 proteins encode PNGSs outside the D1 domain; See Fig. 1E).

Site	N	T/S	BUSTED	MEME	PAML		Previous analyses
					M1a/M2a	M7/M8	
15	N15		█				█
17	N17	N15	█	█		Ptv only	█
19		N17	█				
21	N21						
23		N21	█		█	█	█
32	N32		█		█		█
34		N32	█		█		█
66	N66		█	█			█
68		N66					
2			█	█		█	
11			█	█			
20			█	█		█	█
24			█		█		█
25			█			█	
30			█	█			
39			█	█	█	█	█
41			█	█	█		
42			█			█	
44			█		█	█	
48			█			█	█
52			█	█	█	█	█
55			█	█	█	█	█
59			█	█			
80			█			█	
88			█	█	█	█	█
All, Ptv			6.8x10 ⁻⁴	N/A	3.3x10 ⁻⁷	8.7x10 ⁻⁹	
All, Ptt			3.3x10 ⁻³	N/A	1.3x10 ⁻⁷	3.2x10 ⁻⁹	

Fig. S9. The D1 domain of primate CD4 is under positive selection. Each row corresponds to a codon of interest, with its position in the mature CD4 protein indicated on the left (column 1).

Codons highlighted in red were found to be under positive selection using at least two methods. 'All, Ptv' and 'All, Ptt' rows give p-values in tests for positive selection anywhere in the sequence ('All, Ptv' and 'All, Ptt' refer to alignments that contain either the QQNVT or the QQNIP chimpanzee CD4 allele, respectively). Upper panel, all N-linked glycosylation sites present in the primate CD4 sequences included in the analysis; lower panel, other sites under positive selection. Black boxes with red text indicate whether a site is the Asn (column 2) or Ser/Thr (column 3) of the PNGS motif. Green boxes indicate codons found to be under positive selection by BUSTED (evidence ratio > 4; column 4), MEME ($p < 0.1$; column 5) and/or either model pair in PAML ($P(w>1) > 0.95$; columns 6 and 7, with the model pair indicated in the header row). Both alignments yielded the same results, except where indicated. Black boxes in column 8 indicate codons identified to be under selection in previous studies (38-40). BUSTED, Branch-site Unrestricted Statistical Test for Episodic Diversification; PAML, Phylogenetic Analysis for Maximum Likelihood site model test; MEME, mixed effects model of evolution; Ptv, *P. troglodytes verus*; Ptt, *P. troglodytes troglodytes*; N/A, not applicable.

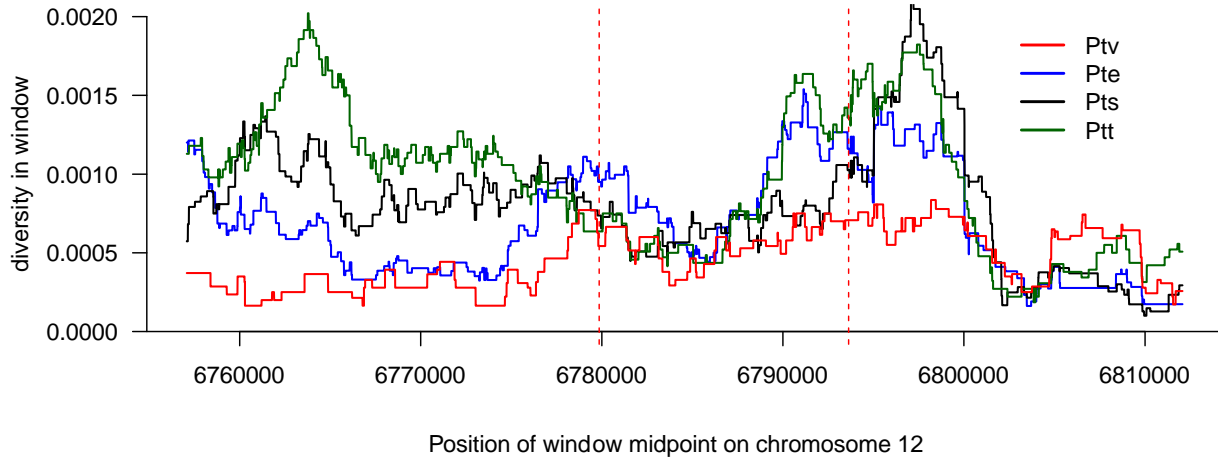


Fig. S10. Nucleotide sequence diversity surrounding the chimpanzee CD4 locus. Pairwise diversity values are shown for each chimpanzee subspecies (from the Great Ape Genome Project) in overlapping windows of 5 kb, plotted against the window position on human chromosome 12. Red vertical dashed lines indicate the approximate position of the two polymorphism clusters on exon 2 (left) and exon 3 (right). No trough of diversity indicative of a selective sweep is apparent surrounding these polymorphisms. Ptv, *P. t. verus*; Pte, *P. t. ellioti*; Pts, *P. t. schweinfurthii*; Ptt, *P. t. troglodytes*.

SI Tables

Table S1. Replication kinetics of HIV-1 and SIVcpz strains in chimpanzee CD4+ T-cells

ID [*]	Virus	Strain	Experiment 1 [†] (ng RT/ml)					Experiment 2 [†] (ng RT/ml)					
			1 [§]	4	7	10	13	1	4	7	10	13	
Abby	HIV-1 [^]	SG3 [^]	0.00 [‡]	0.00 [‡]	0.63 [‡]	2.75 [‡]	2.50 [‡]	1.13	3.50	35.6	>160 [¶]	>160	
		SIVcpzPtt	MT145	0.00	0.38	10.3	8.00	4.88	0.25	1.13	46.5	160	156
		EK505	0.00	0.00	12.9	20.5	27.9	0.00	2.63	6.13	30.1	37.3	
		MB897	0.00	0.13	0.88	11.6	21.5	0.63	1.63	1.13	0.13	3.75	
		GAB2	0.00	0.00	0.00	0.25	0.13						
		LB715						1.00	2.25	8.50	18.3	40.1	
		SIVcpzPts	BF1167	0.00	0.00	7.25	9.00	7.00	1.38	1.13	1.13	1.00	2.25
			TAN2	0.00	0.50	8.63	16.0	10.4	1.38	2.88	>160	>160	>160
Amos	HIV-1	SG3	0.00	0.00	3.75	19.5	14.4	0.00	0.00	4.63	13.13	31.6	
		SIVcpzPtt	MT145	0.00	0.00	21.9	47.9	26.9	0.00	0.00	1.25	22.5	27.6
		EK505	0.00	0.00	2.25	14.6	24.8	0.00	0.00	0.38	17.3	18.1	
		MB897	0.00	0.00	2.00	31.0	39.9	0.00	0.00	0.00	10.6	7.25	
		GAB2	0.00	0.00	0.00	0.75	1.13	0.00	0.00	0.00	0.63	1.25	
		LB715	0.00	0.00	0.00	0.75	1.13	0.00	0.00	1.63	5.50	8.38	
		SIVcpzPts	BF1167	0.00	0.00	0.13	1.50	6.75	0.00	0.00	0.13	0.75	1.75
			TAN2	0.00	0.00	19.4	61.3	45.0	0.00	0.00	8.63	17.8	30.0
Artemus	HIV-1	SG3	0.00	0.00	16.5	62.4	45.9						
		SIVcpzPtt	MT145	0.00	0.38	51.0	43.0	26.6					
		EK505	0.00	0.00	0.00	0.00	0.00						
		MB897	0.00	0.00	0.00	0.00	0.00						
		GAB2	0.00	0.00	0.00	0.00	0.00						
		SIVcpzPtt	TAN2	0.00	0.13	55.6	41.1	33.9					
Arthur	HIV-1	SG3	0.00	0.00	32.9	30.3	29.9						
		SIVcpzPtt	MT145	0.00	0.00	10.5	21.6	16.4					
		EK505	0.00	0.00	0.00	0.00	0.63						
		MB897	0.00	0.00	0.00	0.00	0.00						
		GAB2	0.00	0.00	0.00	0.00	0.00						
		SIVcpzPtt	TAN2	0.00	0.00	1.25	5.88	6.38					
Bandit	HIV-1	SG3	0.00	0.00	5.50	28.0	23.3	0.00	9.25	48.9	36.0	33.1	
		SIVcpzPtt	MT145	0.00	0.88	17.1	30.9	28.5	0.00	12.8	46.9	65.6	59.4
		EK505	0.00	2.75	35.1	50.5	38.9	0.00	29.3	61.1	74.4	84.5	
		MB897	0.00	2.50	43.1	62.1	66.3	0.00	40.5	74.8	84.3	89.8	
		GAB2	0.00	0.00	0.63	8.38	11.3	0.00	0.00	2.50	11.1	14.5	
		SIVcpzPts	BF1167	0.00	5.13	45.5	49.0	60.4	0.00	39.0	83.9	86.6	110
			TAN2	0.00	2.63	17.8	46.8	40.6	0.00	8.38	41.6	57.0	44.0
			TAN13	0.00	33.0	74.0	95.0	108					
Barbara	HIV-1	SG3	0.00	3.50	123	>128	>128	0.00	0.00	0.00	95.1	41.3	
		SIVcpzPtt	MT145	0.00	0.88	24.4	>128	>128					
		EK505	0.00	0.88	2.38	2.13	0.75	0.00	0.00	0.00	47.5	62.1	
		MB897	0.00	2.88	4.25	24.6	87.4	0.00	0.00	0.00	78.5	98.8	
		GAB2	0.00	0.00	2.00	6.00	20.6						
		LB715	0.00	1.75	4.75	18.6	15.6						
		SIVcpzPts	BF1167	0.38	2.63	18.0	34.6	22.1	0.00	0.00	0.00	59.4	37.5
			TAN2	0.00	2.88	128	>128	>128					
Barbi	HIV-1	SG3	0.00	1.88	57.3	80.6	98.8						
		SIVcpzPtt	MT145	0.00	0.00	3.38	29.5	38.9					
		EK505	0.00	0.00	0.00	0.00	0.00						
		MB897	0.00	0.00	0.00	0.00	0.00						
		GAB2	0.00	0.00	0.00	0.00	0.00						
		LB715	0.00	0.00	0.00	0.00	0.00						

	SIVcpzPts	BF1167	0.00	0.00	0.00	0.00	0.13						
		TAN2	0.00	0.00	0.25	9.50	16.8						
Brooks	HIV-1	SG3	0.00	14.3	70.6	116	124						
	SIVcpzPtt	MT145	0.00	24.4	150	103	96.0						
		EK505	0.00	0.00	0.13	0.00	0.63						
		MB897	0.00	0.25	0.13	0.00	0.00						
		GAB2	0.00	0.00	0.00	0.00	0.00						
		LB715	0.00	0.00	0.13	0.00	0.00						
	SIVcpzPts	BF1167	0.00	0.00	0.13	0.00	0.38						
		TAN2	0.00	0.00	1.13	7.13	6.25						
Cheetah	HIV-1	SG3	0.00	3.25	39.5	56.9	87.8						
	SIVcpzPtt	MT145	0.00	1.00	82.5	99.1	84.9						
		EK505	0.00	0.00	0.00	0.00	0.00						
		MB897	0.00	0.00	0.00	0.00	0.00						
		GAB2	0.00	0.00	0.00	0.00	0.00						
		LB715	0.00	0.00	0.00	0.00	0.00						
	SIVcpzPts	BF1167	0.00	0.00	0.00	0.50	0.10						
		TAN2	0.00	0.00	6.00	18.4	15.8						
Chip	HIV-1	SG3	0.00	38.4	>173	139	173	0.00#	20.9	219.3	127.6	113.9	
	SIVcpzPtt	MT145	0.00	7.75	>173	>173	>173	0.00	27.6	54.3	86.3	67.9	
		EK505	0.00	13.1	>173	>173	>173	0.00	15.8	53.3	103.3	55.25	
		MB897	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
		GAB2	0.00	0.00	1.25	16.5	20.6						
		LB715						0.00	20.9	219.3	127.6	113.9	
	SIVcpzPts	BF1167	0.00	0.25	0.63	0.25	0.25	0.00	0.00	0.00	0.00	0.00	
		TAN2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
		TAN13						0.00	0.00	0.00	0.00	0.00	
								0.00	0.00	0.00	0.00	0.00	
Cissie	HIV-1	SG3	0.10	1.75	46.1	27.1	36.1						
	SIVcpzPtt	MT145	0.10	8.38	43.4	14.1	17.6						
		EK505	0.10	1.38	59.1	80.6	63.0						
		MB897	0.10	0.10	0.10	0.10	0.10						
		GAB2	0.10	0.10	0.10	0.10	0.10						
		LB715											
	SIVcpzPts	BF1167	0.10	0.10	0.10	0.10	0.10						
		TAN2	0.10	0.10	0.10	0.10	0.10						
Daisy	HIV-1	SG3	0.00	7.50	47.8	121	118						
	SIVcpzPtt	MT145	0.00	0.75	78.1	144	125						
		EK505	0.00	0.00	0.00	0.38	0.25						
		MB897	0.00	0.00	0.00	0.13	0.00						
		GAB2	0.00	0.00	0.00	0.00	0.00						
	SIVcpzPts	TAN2	0.00	0.00	2.25	4.25	4.25						
Dona	HIV-1	SG3	0.00	13.0	48.0	45.2	47.0						
	SIVcpzPtt	MT145	0.00	6.00	46.0	58.3	44.0						
		EK505	0.00	0.00	0.00	0.13	0.13						
		MB897	0.00	0.00	0.00	0.13	0.00						
		GAB2	0.00	0.00	0.00	0.00	0.13						
		LB715	0.00	0.00	0.00	0.00	0.00						
	SIVcpzPts	BF1167	0.00	0.00	0.00	0.00	0.00						
		TAN2	0.00	0.00	13.0	34.3	28.8						
	TAN13	0.04	0.00	0.13	0.00	0.00							
Drew	HIV-1	SG3	0.00	41.5	91.0	70.6	92.5						
	SIVcpzPtt	MT145	0.00	2.00	49.5	32.1	82.8						
		EK505	0.00	0.38	0.38	0.38	0.38						
		MB897	0.00	0.00	0.00	0.00	0.00						
		GAB2	0.00	0.00	0.00	0.00	0.00						
		LB715	0.00	0.00	0.00	0.00	0.00						
	SIVcpzPts	BF1167	0.00	0.25	0.00	0.00	0.00						
		TAN2	0.00	0.00	0.00	46.6	47.1						
Duff	HIV-1	SG3	0.00	1.75	48.4	50.3	25.8						

	SIVcpzPtt	MT145	0.00	0.00	17.5	52.5	52.1						
		EK505	0.00	0.00	0.00	0.00	0.00						
		MB897	0.00	0.13	0.00	0.00	0.00						
		GAB2	0.00	0.00	0.00	0.00	0.00						
	SIVcpzPts	BF1167	0.00	0.25	0.38	0.00	0.00						
		TAN2	0.00	0.25	1.13	20.4	34.1						
Evelyne	HIV-1	SG3	0.00	1.75	22.0	26.4	26.8						
	SIVcpzPtt	MT145	0.00	0.13	22.6	42.5	20.3						
		EK505	0.00	0.00	0.00	0.25	0.38						
		MB897	0.00	0.00	0.00	0.00	0.00						
		GAB2	0.00	0.00	0.00	0.00	0.00						
	SIVcpzPts	TAN2	0.00	0.00	1.63	8.13	14.9						
Kevin	HIV-1	SG3	0.00	5.38	16.6	17.3	11.3	0.00	9.50	35.1	88.4	67.5	
	SIVcpzPtt	MT145	0.00	4.25	19.3	29.3	41.3	0.00	18.6	95.8	67.8	48.6	
		EK505	0.00	3.88	11.1	23.6	43.9	0.00	4.88	59.3	77.9	119	
		MB897	0.00	7.00	32.6	38.5	73.0	0.00	0.38	36.0	64.3	78.3	
		GAB2	0.00	0.00	0.25	20.0	30.1	0.00	0.00	0.63	2.13	1.38	
	SIVcpzPts	BF1167	0.00	3.00	21.1	39.8	74.8						
		TAN2	0.00	4.50	10.4	12.8	47.1						
		TAN13	0.00	12.9	21.8	32.6	60.4						
Jewelle	HIV-1	SG3	0.10	0.88	23.4	58.3	48.1						
	SIVcpzPtt	MT145	0.10	0.63	24.1	31.9	33.4						
		EK505	0.10	0.50	13.1	36.0	55.5						
		MB897	0.10	0.10	0.10	0.10	0.10						
		GAB2	0.10	0.10	0.10	0.10	0.10						
	SIVcpzPts	BF1167	0.10	0.10	0.10	0.10	0.10						
		TAN2	0.10	0.10	0.10	0.10	0.10						
Lena	HIV-1	SG3	0.10	65.5	145	63.5	44.4						
	SIVcpzPtt	MT145	0.10	11.8	127	81.1	44.1						
		EK505	0.10	18.9	93.6	97.1	98.0						
		MB897	0.10	0.50	13.9	37.6	31.9						
		GAB2	0.10	0.63	8.13	12.8	10.8						
	SIVcpzPts	TAN2	0.10	49.4	66.6	90.4	67.1						
Martha	HIV-1	SG3	0.25	3.38	21.1	47.9	44.5						
	SIVcpzPtt	MT145	0.00	0.38	11.4	33.4	61.5						
		EK505	0.13	0.13	0.63	7.25	58.5						
		MB897	0.25	0.38	0.13	0.13	0.38						
		GAB2	0.00	0.13	0.00	0.25	0.63						
	SIVcpzPts	BF1167	0.13	0.00	0.00	0.00	0.00						
		TAN2	0.00	0.38	0.00	0.00	0.00						
Melissa	HIV-1	SG3	0.00	1.50	47.3	43.5	24.0	0.00	8.25	50.5	51.1	27.0	
	SIVcpzPtt	MT145	0.00	0.38	31.3	29.3	15.3	0.00	2.25	70.5	54.1	45.3	
		EK505	0.00	0.25	2.63	23.4	27.1	0.13	0.13	24.4	73.5	81.8	
		MB897	0.00	0.00	2.63	29.4	24.4	0.00	0.00	18.8	65.6	67.5	
		GAB2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	2.38	
		LB715						0.00	0.50	65.3	73.4	76.9	
	SIVcpzPts	BF1167	0.00	0.13	10.9	10.4	10.6	0.00	0.25	85.6	102	75.4	
		TAN2	0.00	0.75	18.5	36.3	25.0	0.00	1.50	29.8	58.0	37.5	
		TAN13						0.63	8.13	84.5	83.3	69.3	
Merlin	HIV-1	SG3	0.00	18.5	41.1	14.8	8.25						
	SIVcpzPtt	MT145	0.00	12.9	42.0	85.5	35.0						
		EK505	0.25	0.00	0.25	0.75	0.63						
		MB897	0.00	0.00	0.00	0.00	0.00						
		GAB2	0.00	0.00	0.00	0.00	0.00						
	SIVcpzPts	BF1167	0.00	0.00	0.00	0.00	0.00						
		TAN2	0.00	1.00	13.3	19.9	20.9						
		TAN13	0.00	0.25	0.00	0.50	0.25						
Peony	HIV-1	SG3	0.00	24.3	61.3	64.1	40.5						
	SIVcpzPtt	MT145	0.00	0.00	6.50	57.5	27.1						

		EK505	0.00	0.00	0.00	0.00	0.00					
		MB897	0.00	0.00	0.00	0.00	0.00					
		GAB2	0.00	0.00	0.00	0.00	0.00					
		LB715	0.00	0.00	0.00	0.00	0.00					
	SIVcpzPts	BF1167	0.00	0.00	0.00	0.00	0.00					
		TAN2	0.00	0.00	0.00	0.88	1.63					
Ranette	HIV-1	SG3	0.00	0.00	138	55.0	72.3	0.00	1.13	34.8	56.0	58.5
	SIVcpzPtt	MT145	0.00	0.00	85.0	39.0	97.8	0.00	0.00	4.00	25.4	30.4
		EK505	0.00	0.00	109	104	127	0.00	0.88	33.5	66.5	74.1
		MB897	0.00	0.00	127	112	147	0.00	0.00	0.38	11.6	49.4
		GAB2	0.00	0.00	2.00	6.00	20.6	0.00	0.00	0.38	9.00	25.6
	SIVcpzPts	BF1167						0.00	0.00	7.75	35.0	57.0
		TAN2						0.00	0.00	11.0	39.0	58.3
Rita	HIV-1	SG3	0.00	3.75	44.9	51.8	61.8					
	SIVcpzPtt	MT145	0.00	1.88	34.8	25.1	50.6					
		EK505	0.00	0.00	0.00	0.38	0.63					
		MB897	0.00	0.00	0.00	0.00	0.00					
		GAB2	0.00	0.00	0.00	0.00	0.00					
		LB715	0.00	0.00	0.00	0.00	0.00					
	SIVcpzPts	BF1167	0.00	0.00	0.50	0.25	0.25					
		TAN2	0.00	0.00	11.1	33.3	25.0					
Sylvia	HIV-1	SG3	0.00	9.13	42.8	51.6	38.5					
	SIVcpzPtt	MT145	0.00	0.50	38.0	66.5	38.1					
		EK505	0.00	0.00	0.13	0.50	0.63					
		MB897	0.00	0.00	0.00	0.00	0.00					
		GAB2	0.00	0.00	0.00	0.00	0.00					
	SIVcpzPts	BF1167	0.00	0.00	0.00	0.00	0.00					
		TAN2	0.00	0.00	2.63	20.0	14.8					
		TAN13	0.00	0.00	0.00	0.63	0.75					
Waga	HIV-1	SG3	0.00	1.00	34.9	70.4	45.8					
	SIVcpzPtt	MT145	0.00	0.00	0.88	3.75	6.00					
		EK505	0.00	0.25	0.25	0.00	0.00					
		MB897	0.00	0.25	0.25	0.00	0.00					
		GAB2	0.00	0.00	0.00	0.00	0.00					
	SIVcpzPts	TAN2	0.00	0.25	3.00	26.5	50.1					
Winston	HIV-1	SG3	0.00	0.00	10.6	46.0	24.3	0.00	1.63	34.5	82.4	93.5
	SIVcpzPtt	MT145						0.00	0.88	36.6	130	107
		EK505	0.00	0.00	51.9	85.9	71.4	0.00	0.88	26.9	92.5	103
		MB897	0.00	0.00	5.88	44.4	42.9					
		GAB2						0.00	0.00	0.00	0.38	1.50
	SIVcpzPts	BF1167	0.00	0.00	47.6	62.5	58.1					
		TAN2						0.00	0.88	6.75	18.8	22.4

[†]Experiments 1 and 2 were performed using independent blood samples from the same animal.

[‡]Blood samples were obtained from healthy chimpanzees housed at US primate centers. Because only leftover material was available, not all SIVcpz strains could be tested on CD4+ T cells from all animals.

[§]Supernatants were collected from CD4+ T cell cultures at days 1, 4, 7, 10 and 13 to quantify reverse transcriptase (RT) activity.

[^]The chimpanzee-adapted HIV-1 strain SG3, which replicates well in chimpanzee CD4+ T cells, was used as a positive control (41).

[‡]Concentrations of RT activity in culture supernatants are color-coded with black, blue and red indicating values <1 ng/ml, between 1 and 5 ng/ml, >5 ng/ml, respectively. See Fig. 1 for a summary of the infection data.

^{††}RT values preceded by a ">" indicate that the concentration was higher than the standard in that experiment.

[#]The experiment was performed using viably frozen (reactivated) chimpanzee CD4+ T-cells.

Table S2. CD4 genotyping of captive chimpanzees

Chimpanzee [§]	Subspecies [#]	mt D-Loop haplotype*	Number of CD4 SGA ^{&}	Allele 1	Haplotype 1	Allele 2	Haplotype 2	CD4 Haplotype*
Abby	<i>Ptt</i>	MK178724	13	6	QNVT	7	QNIP	MK208833/MK208828
Amos	<i>Ptt</i>	MK178724	8	3	QNVT	5	QNIP	MK208833/MK208828
Artemus	<i>Ptv</i>	DQ370361	4	4	QNVT			MK208833/MK208829
Arthur	<i>Ptv</i>	DQ370365	6	6	QNVT			MK208833
Bandit	<i>Ptv</i>	MK178763	17	9	QNVT	8	QNVP	MK208833/ MK208830
Barbara	<i>Ptt</i>	MK178724	10	6	QNIP	4	QNVP	MK208828/ MK208830
Barbi	<i>Ptv</i>	DQ370363	15	15	QNVT			MK208833
Brooks	<i>Ptv</i>	DQ370365	6	6	QNVT			MK208833
Cheeta	<i>Ptv</i>	MK178849	12	12	QNVT			MK208833
Chip	<i>Ptv</i>	DQ370356	8	4	QNVT	4	RNVP	MK208833/MK208831
Cissie	<i>Ptv</i>	MK178799	13	8	QNVT	5	RKVT	MK208833/MK208832
Daisy	<i>Ptv</i>	FJ642352	34	34	QNVT			MK208833
Dona	<i>Ptv</i>	DQ370362	8	8	QNVT			MK208833
Drew	<i>Ptv</i>	DQ370365	17	17	QNVT			MK208833
Duff	<i>Ptv</i>	DQ370365	9	9	QNVT			MK208833/MK208834
Evelyne	<i>Ptv</i>	DQ370365	23	23	QNVT			MK208833
Jewelle	<i>Ptv</i>	DQ370365	19	9	QNVT	10	RKVT	MK208833/MK208832
Kevin	<i>Ptt</i>	MK178724	14	7	QNVT	7	QNVP	MK208833/ MK208835
Lena	<i>Ptv</i>	DQ370365	6	4	QNVT	2	QNVP	MK208833/MK208836
Martha [@]	<i>Ptv</i>	DQ370365	12	8	QNVT	4	RKVT	n/a [†]
Melissa	<i>Ptv</i>	FJ642352	9	4	QNVT	5	QNIP	MK208833/MK208828
Merlin	<i>Ptv</i>	MK178832	18	18	QNVT			MK208833
Peony	<i>Ptv</i>	DQ370363	10	10	QNVT			MK208833
Ranette	<i>Ptt</i>	DQ367610	6	4	QNVT	2	QNVP	MK208833/ MK208830
Rita	<i>Ptv</i>	MK178817	10	10	QNVT			MK208833
Sylvia	<i>Ptv</i>	FJ642352	19	19	QNVT			MK208833
Waga	<i>Ptv</i>	DQ370359	16	16	QNVT			MK208833
Winston	<i>Ptt</i>	MK178724	14	7	QNVT	7	QNIP	MK208833/MK208828

[§]Leftover blood samples were obtained from healthy captive chimpanzees after their annual health check.

[#]Subspecies origin was determined by mitochondrial (D loop) analysis; *Ptv*, *P.t. verus*; *Ptt*, *P.t. troglodytes*.

*GenBank accession numbers are listed.

[&]RNA was extracted from activated CD4+ T cells, reverse transcribed, and the resulting cDNA subjected to single genome amplification (SGA) using CD4 specific primers; the number of full-length SGA-derived CD4 amplicons that were sequenced is shown (see Figs. 1E and S3A for an alignment of the different CD4 haplotypes).

[@]SGA analysis was performed for CD4 exons 2 and 3 separately, using RNA extracted from non-viably frozen PBMCs.

[†]n/a not available

Table S3. CD4 genotyping of wild-living and sanctuary chimpanzees

No	Sample ID [#]	Individual [†]	Sample date	Collection site	Site	Country	DNA source	Ssp [®]	mt D-loop haplotype	SIV infection	exon 2 (AA position 25 and 40) [‡]		exon 3 (AA position 52, 55 and 68) [‡]			
											PCR [§]	Allele A [§]	Allele B [§]	PCR [§]	Allele A [®]	Allele B [®]
1	BO01	Fana	n/a [†]	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178739	neg [¶]	4	aQQ	aQQ	7	NVT	NVT
2	BO02	Fanle	n/a	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178739	neg	8	aQQ	aQQ	8	NVT	NVT
3	BO04	Yo	n/a	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178795	neg	8	aQQ	aQQ	8	NVT	NVT
4	BO05	Fotail	n/a	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178739	neg	2	aQQ	aQQ	3	NVT	NVT
5	BO06	Vel	n/a	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178792	neg	7	aQQ	aQQ	7	NVT	NVT
6	BO07	Yolo	n/a	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178795	neg	8	aQQ	aQQ	8	NVT	NVT
7	BO08	Tua	n/a	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178739	neg	8	aQQ	aQQ	8	NVT	NVT
8	BO10	Pamu	n/a	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178748	neg	7	aQQ	aQQ	8	NVT	NVT
9	BO12	Foat	n/a	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178739	neg	3	aQQ	aQQ	6	NVT	NVT
10	BO13	Peley	n/a	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178748	neg	8	aQQ	aQQ	7	NVT	NVT
11	BO19	Jire	n/a	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178739	neg	3	aQQ	aQQ	2	NVT	NVT
12	BO22	Fokaie	n/a	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178739	neg	8	aQQ	aQQ	8	NVT	NVT
13	BO25	Teje	n/a	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178739	neg	8	aQQ	aQQ	8	NVT	NVT
14	BO28	Tire	n/a	Bossou	BO	Guinea	feces	<i>Ptv</i>	MK178739	neg	8	aQQ	aQQ	8	NVT	NVT
15	CC01	Albert	07/05/11	CCC	CC	Guinea	blood	<i>Ptv</i>	MK178831	neg	8	aQQ	aQQ	8	NVT	NVT
16	CC02	Lobai	07/03/11	CCC	CC	Guinea	blood	<i>Ptv</i>	EU527381	neg	8	aQQ	aQQ	8	NVT	NVT
17	CC03	Louna	07/03/11	CCC	CC	Guinea	blood	<i>Ptv</i>	MK178744	neg	8	aQQ	aQQ	8	NVT	NVT
18	CC04	Max	07/03/11	CCC	CC	Guinea	blood	<i>Ptv</i>	MK178778	neg	8	aQQ	aQQ	8	NVT	NVT
19	CC05	Mike	07/03/11	CCC	CC	Guinea	blood	<i>Ptv</i>	EU527439	neg	8	aQQ	aQQ	8	NVT	NVT
20	CC06	Moka	07/03/11	CCC	CC	Guinea	blood	<i>Ptv</i>	MK178742	neg	7	aQQ	aQQ	7	NVT	NVT
21	CC07	Robert	07/05/11	CCC	CC	Guinea	blood	<i>Ptv</i>	MK178762	neg	7	aQQ	aQQ	7	NVT	NVT
22	CC08	Shelly	07/03/11	CCC	CC	Guinea	blood	<i>Ptv</i>	EU527381	neg	8	aQQ	aQQ	8	NVT	NVT
23	CC09	Veve	07/03/11	CCC	CC	Guinea	blood	<i>Ptv</i>	MK178781	neg	8	aQQ	aQQ	8	NVT	NVT
24	CC10	Zoe	07/04/11	CCC	CC	Guinea	blood	<i>Ptv</i>	MK178786	neg	8	aQQ	aQQ	8	NVT	NVT
25	CC11	Bailo	05/24/14	CCC	CC	Guinea	blood	<i>Ptv</i>	MK178788	neg	8	aQQ	aQQ	8	NVT	NVT
26	CC14	Leonie	05/24/14	CCC	CC	Guinea	blood	<i>Ptv</i>	EU527381	neg	8	aQQ	aQQ	8	NVT	NVT
27	CC17	Missy	06/01/14	CCC	CC	Guinea	blood	<i>Ptv</i>	DQ370365	neg	8	aQQ	aQQ	8	NVT	NVT
28	CC18	N'dama	05/24/14	CCC	CC	Guinea	blood	<i>Ptv</i>	MK178772	neg	8	aQQ	aQQ	8	NVT	NVT
29	CC19	Nelson	05/24/14	CCC	CC	Guinea	blood	<i>Ptv</i>	EU527439	neg	8	aQQ	aQQ	8	NVT	NVT
30	CC20	Sam	05/24/14	CCC	CC	Guinea	blood	<i>Ptv</i>	MK178744	neg	8	aQQ	aQQ	8	NVT	NVT
31	CC22	Tango	05/24/14	CCC	CC	Guinea	blood	<i>Ptv</i>	MK178794	neg	8	aQQ	aQQ	8	NVT	NVT
32	CC23	Tya	05/24/14	CCC	CC	Guinea	blood	<i>Ptv</i>	MK178760	neg	8	aQQ	aQQ	8	NVT	NVT
33	CH01	Loukoum	03/06/99	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	EU527424	neg	8	aQQ	aQQ	8	NVT	NVT
34	CH03	Narcisse	03/17/99	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	DQ370354	neg	8	aQQ	aQQ	8	NVT	NVT
35	CH06	Macho	03/06/99	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	EU527378	neg	8	aQQ	aQQ	8	NVT	NVT
36	CH08	Castor	03/16/99	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	EU527379	neg	7	aQQ	aQQ	8	NVT	NVT
37	CH09	Fossey	03/18/99	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	EU527440	neg	8	aQQ	aQQ	8	NVT	NVT
38	CH10	Perla	03/16/99	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	EU527441	neg	6	aQQ	aQQ	7	NVT	NVT
39	CH11	Coco	03/09/99	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	EU527426	neg	8	aQQ	aQQ	8	NVT	NVT
40	CH16	Venus	03/07/99	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	DQ370354	neg	8	aQQ	aQQ	8	NVT	NVT
41	CH17	Kabisha	03/09/99	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	DQ370355	neg	8	aQQ	aQQ	8	NVT	NVT
42	CH19	Goma	03/15/99	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	EU527442	neg	8	aQQ	aQQ	8	NVT	NVT
43	CH26	Kady	03/12/01	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	MK178747	neg	7	aQQ	aQQ	8	NVT	NVT
44	CH27	Leo	05/04/01	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	MK178827	neg	8	aQQ	aQQ	8	NVT	NVT
45	CH28	Nino	01/30/06	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	EU527441	neg	8	aQQ	aQQ	8	NVT	NVT
46	CH29	Sumatra	01/05/06	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	MK178834	neg	7	aQQ	aQQ	6	NVT	NVT
47	CH30	Virunga	11/14/01	Tai	TA	Ivory Coast	feces	<i>Ptv</i>	MK178735	neg	8	aQQ	aQQ	8	NVT	NVT
48	K1184	K1184	11/02/16	Boe	BE	Guinea Bissau	feces	<i>Ptv</i>	MK178790	n.d. [‡]	5	aQQ	aQQ	4	NVT	NVT
49	K1185	K1185	11/02/16	Boe	BE	Guinea Bissau	feces	<i>Ptv</i>	MK178744	n.d.	4	aQQ	aQQ	3	NVT	NVT
50	NB110	NB110	03/12/12	Nimba	NB	Guinea	feces	<i>Ptv</i>	MK178782	neg	12	aQQ	aQQ	12	NVT	NVT
51	NB111	NB111	03/21/12	Nimba	NB	Guinea	feces	<i>Ptv</i>	MK178764	neg	5	aQQ	aQQ	4	NVT	NVT
52	NB120	NB120	04/24/12	Nimba	NB	Guinea	feces	<i>Ptv</i>	MK178723	neg	10	aQQ	aQQ	8	NVT	NVT
53	NB131	NB131	05/05/12	Nimba	NB	Guinea	feces	<i>Ptv</i>	MK178780	neg	5	aQQ	aQQ	7	NVT	NVT

54	NB155	NB155	05/21/12	Nimba	NB	Guinea	feces	Ptv	MK178811	neg	7	aQQ	aQQ	8	NVT	NVT
55	NB186	NB186	07/19/12	Nimba	NB	Guinea	feces	Ptv	MK178743	neg	2	aQQ	aQQ	3	NVT	NVT
56	NB198	NB198	08/08/12	Nimba	NB	Guinea	feces	Ptv	MK178727	neg	1	aQQ	aQQ	5	NVT	NVT
57	NB229	NB229	10/19/12	Nimba	NB	Guinea	feces	Ptv	MK178760	neg	6	aQQ	aQQ	10	NVT	NVT
58	NB230	NB230	10/23/12	Nimba	NB	Guinea	feces	Ptv	MK178738	neg	1	aQQ	aQQ	3	NVT	NVT
59	NB235	NB235	10/23/12	Nimba	NB	Guinea	feces	Ptv	MK178747	neg	3	aQQ	aQQ	5	NVT	NVT
60	NB241	NB241	10/30/12	Nimba	NB	Guinea	feces	Ptv	MK178748	neg	9	aQQ	aQQ	9	NVT	NVT
1	GA01	GK01	02/13/08	Gashaka	GA	Nigeria	feces	Pte	MK178755	neg	5	aQQ	aQQ	4	NVP	NVP
2	GA04	GK04	02/13/08	Gashaka	GA	Nigeria	feces	Pte	MK178768	neg	7	aQQ	aQQ	7	KVT	KVT
3	GA05	GK05	02/13/08	Gashaka	GA	Nigeria	feces	Pte	MK178766	neg	8	aQQ	aQQ	8	NVP	NVP
4	GA07	GK07	02/20/08	Gashaka	GA	Nigeria	feces	Pte	MK178758	neg	4	aQQ	gQR	1	NVP	NIP
5	GA09	GK09	02/20/08	Gashaka	GA	Nigeria	feces	Pte	MK178766	neg	8	aQQ	aQQ	8	KVT	KVT
6	GA11	GK11	03/19/08	Gashaka	GA	Nigeria	feces	Pte	MK178766	neg	8	aQQ	aQQ	8	KVT	NVP
7	GA12	GK12	03/19/08	Gashaka	GA	Nigeria	feces	Pte	MK178766	neg	8	aQQ	aQQ	8	KVT	NVP
8	GA13	GK13	03/19/08	Gashaka	GA	Nigeria	feces	Pte	MK178749	neg	8	aQQ	aQQ	8	KVT	NVP
9	GA18	GK18	04/22/08	Gashaka	GA	Nigeria	feces	Pte	MK178804	neg	1	aQQ	gQQ	5	NVP	NVP
10	GA20	GK20	04/22/08	Gashaka	GA	Nigeria	feces	Pte	MK178766	neg	8	aQQ	aQQ	8	KVT	KVT
11	GA23	GK23	04/22/08	Gashaka	GA	Nigeria	feces	Pte	MK178766	neg	8	aQQ	aQQ	1	KVT	NVP
12	GA25	GK25	04/30/08	Gashaka	GA	Nigeria	feces	Pte	MK178766	neg	8	aQQ	aQQ	1	KVT	NVP
13	GA38	GK38	05/13/08	Gashaka	GA	Nigeria	feces	Pte	MK178766	neg	8	aQQ	aQQ	8	NVP	NVP
14	GA41	GK41	05/13/08	Gashaka	GA	Nigeria	feces	Pte	MK178804	neg	1	aQQ	gQR	1	NIP	NVP
15	GA44	GK44	05/14/08	Gashaka	GA	Nigeria	feces	Pte	MK178804	neg	8	aQQ	aQQ	8	KVT	KVT
16	MF1269	MF1269	08/21/05	Mamfé	MF	Cameroon	feces	Pte	EU527376	neg	8	aQQ	aQQ	8	KVT	KVT
17	MF1271	MF1271	08/21/05	Mamfé	MF	Cameroon	feces	Pte	EU527419	neg	6	aQQ	aQQ	7	NVP	NVP
18	MF1274	MF1274	08/21/05	Mamfé	MF	Cameroon	feces	Pte	EU527372	neg	8	aQQ	aQQ	1	KVT	NVP
19	MF1278	MF1278	08/21/05	Mamfé	MF	Cameroon	feces	Pte	EU527377	neg	8	aQQ	aQQ	8	NVP	NVP
20	MF1289	MF1289	08/21/05	Mamfé	MF	Cameroon	feces	Pte	EU527420	neg	8	aQQ	aQQ	8	NVP	NVP
21	MF1297	MF1297	08/22/05	Mamfé	MF	Cameroon	feces	Pte	EU527371	neg	5	aQQ	aQQ	8	NVP	NVP
22	MP1315	MP1315	12/03/05	Metep	MP	Cameroon	feces	Pte	EU527375	neg	8	aQQ	aQQ	8	NVP	NVP
23	MP1345	MP1345	12/04/05	Metep	MP	Cameroon	feces	Pte	EU527374	neg	8	aQQ	aQQ	1	KVT	NVP
24	SY104	Yoko	08/24/13	Sanaga-Yong	SY	Cameroon	blood	Pte	EU527374	neg	8	aQQ	aQQ	1	KVT	NVP
25	SY106	Zack	08/27/13	Sanaga-Yong	SY	Cameroon	blood	Pte	EU527374	neg	8	aQQ	aQQ	8	NVP	NVP
26	SY011	Bouboul	10/09/11	Sanaga-Yong	SY	Cameroon	blood	Pte	DQ367532	neg	8	aQQ	aQQ	1	KVT	NVP
27	SY122	Muna	05/23/14	Sanaga-Yong	SY	Cameroon	blood	Pte	DQ367533	neg	8	aQQ	aQQ	8	KVT	KVT
28	SY142	Nyanga	05/26/14	Sanaga-Yong	SY	Cameroon	blood	Pte	MK178741	n.d.	8	aQQ	aQQ	1	KVT	NVP
29	SY149	Akiba	08/30/14	Sanaga-Yong	SY	Cameroon	blood	Pte	EU527374	neg	1	aQQ	gQQ	1	NVP	NIP
30	SY016	Henri	06/26/12	Sanaga-Yong	SY	Cameroon	blood	Pte	MK178732	n.d.	8	aQQ	aQQ	1	KVT	NVP
31	SY033	Jack	07/27/12	Sanaga-Yong	SY	Cameroon	blood	Pte	DQ367533	neg	8	aQQ	aQQ	2	KVT	NVP
32	SY037	Moabi	08/03/12	Sanaga-Yong	SY	Cameroon	blood	Pte	EU527375	neg	8	aQQ	aQQ	8	NVP	NVP
33	SY038	Arvid	09/14/12	Sanaga-Yong	SY	Cameroon	blood	Pte	MK178784	neg	8	aQQ	aQQ	1	KVT	NVP
34	SY044	Kanoah	05/15/14	Sanaga-Yong	SY	Cameroon	blood	Pte	MK178732	n.d.	8	aQQ	aQQ	1	KVT	NIP
35	SY085	Jantan	10/23/13	Sanaga-Yong	SY	Cameroon	blood	Pte	DQ367532	neg	8	aQQ	aQQ	8	NVP	NVP
36	SY094	Margot	11/04/13	Sanaga-Yong	SY	Cameroon	blood	Pte	MK178852	n.d.	8	aQQ	aQQ	8	KVT	NVP
37	SY096	Njabeya	10/22/13	Sanaga-Yong	SY	Cameroon	blood	Pte	DQ370310	neg	8	aQQ	aQQ	1	KVT	NVP
38	WE440	WE440	05/19/04	Wassa Emtse	WE	Cameroon	feces	Pte	DQ367532	neg	5	aQQ	aQQ	6	KVT	KVT
39	WE444	WE444	05/19/04	Wassa Emtse	WE	Cameroon	feces	Pte	DQ367532	neg	4	aQQ	aQQ	4	NVP	NVP
40	WE452	WE452	05/25/04	Wassa Emtse	WE	Cameroon	feces	Pte	DQ367533	neg	8	aQQ	aQQ	8	NVP	NVP
41	WE454	WE454	05/25/04	Wassa Emtse	WE	Cameroon	feces	Pte	DQ367532	neg	8	aQQ	aQQ	8	KVT	NVP
1	GT003	GT003	08/30/03	Goualougo	GT	RC ¹	feces	Ptt	DQ370318	neg	3	aQQ	gQR	4	NIP	NVP
2	GT011	GT011	09/20/03	Goualougo	GT	RC	feces	Ptt	DQ370317	neg	8	gQQ	gQQ	1	NVP	NIP
3	GT013	GT013	09/20/03	Goualougo	GT	RC	feces	Ptt	EU527408	neg	1	aQQ	gQR	1	KVT	NVP
4	GT016	GT016	09/23/03	Goualougo	GT	RC	feces	Ptt	DQ367558	neg	8	aQQ	aQQ	8	KVT	KVP
5	GT019	GT019	09/23/03	Goualougo	GT	RC	feces	Ptt	MK178745	neg	8	gQQ	gQQ	8	KVT	KVT
6	GT020	GT020	09/23/03	Goualougo	GT	RC	feces	Ptt	EU527408	neg	1	aQQ	gQQ	1	KVT	NVP
7	GT022	GT022	09/25/03	Goualougo	GT	RC	feces	Ptt	DQ367558	neg	3	aQQ	aQQ	3	KVT	KVT
8	GT027	GT027	09/26/03	Goualougo	GT	RC	feces	Ptt	DQ370316	neg	1	aQQ	gQQ	7	KVT	NVP
9	GT031	GT031	09/27/03	Goualougo	GT	RC	feces	Ptt	DQ367558	neg	7	aQQ	aQQ	8	KVT	KVT
10	GT036	GT036	09/30/03	Goualougo	GT	RC	feces	Ptt	DQ370318	neg	8	gQR	gQR	8	NIP	NIP
11	GT039	GT039	10/03/03	Goualougo	GT	RC	feces	Ptt	DQ370316	neg	5	aQQ	gQQ	9	KVT	KVT

12	GT040	GT040	10/03/03	Goualougo	GT	RC	feces	Ptt	DQ367558	neg	8	aQQ	aQQ	8	KVT	KVT
13	GT042	GT042	09/26/03	Goualougo	GT	RC	feces	Ptt	MK178761	neg	8	aQQ	aQQ	1	KVT	NIP
14	GT103	GT103	10/14/03	Goualougo	GT	RC	feces	Ptt	EU527431	neg	8	gQQ	gQQ	8	NVP	NVP
15	GT109	GT109	10/17/03	Goualougo	GT	RC	feces	Ptt	DQ367537	neg	1	aQQ	gQQ	1	NVP	NIP
16	GT112	GT112	10/18/03	Goualougo	GT	RC	feces	Ptt	DQ367572	neg	8	aQQ	aQQ	8	NIP	NIP
17	GT115	GT115	10/19/03	Goualougo	GT	RC	feces	Ptt	DQ370318	neg	1	gQR	gQR	8	NIP	NIP
18	GT118	GT118	10/24/03	Goualougo	GT	RC	feces	Ptt	DQ370318	neg	1	gQR	gQR	8	NIP	NIP
19	GT126	GT126	11/27/03	Goualougo	GT	RC	feces	Ptt	DQ367558	neg	1	aQQ	gQQ	1	KVT	NVP
20	GT134	GT134	11/29/03	Goualougo	GT	RC	feces	Ptt	MK178785	neg	8	aQQ	aQQ	8	KVT	KVT
21	GT137	GT137	11/29/03	Goualougo	GT	RC	feces	Ptt	DQ367558	neg	8	aQQ	aQQ	8	KVT	KVT
22	GT138	GT138	11/30/03	Goualougo	GT	RC	feces	Ptt	DQ367572	neg	1	aQQ	gQQ	1	KVT	NVP
23	GT139	GT139	11/30/03	Goualougo	GT	RC	feces	Ptt	MK178802	neg	8	aQQ	aQQ	1	KVT	NIP
24	GT142	GT142	12/16/03	Goualougo	GT	RC	feces	Ptt	MK178745	neg	8	aQQ	aQQ	1	KVT	NVP
25	GT143	GT143	12/02/03	Goualougo	GT	RC	feces	Ptt	MK178820	neg	1	aQQ	gQQ	1	KVT	NVP
26	GT144	GT144	12/02/03	Goualougo	GT	RC	feces	Ptt	EU527431	neg	8	aQQ	aQQ	1	KVT	NIP
27	GT146	GT146	12/04/03	Goualougo	GT	RC	feces	Ptt	MK178753	neg	8	aQQ	aQQ	1	NIP	NVP
28	GT148	GT148	12/04/03	Goualougo	GT	RC	feces	Ptt	EU527431	neg	8	aQQ	aQQ	1	KVT	NVP
29	GT151	GT151	12/04/03	Goualougo	GT	RC	feces	Ptt	DQ367572	neg	8	aQQ	aQQ	1	KVT	NVP
30	GT156	GT156	12/06/03	Goualougo	GT	RC	feces	Ptt	DQ370316	neg	1	aQQ	gQQ	8	NVP	NVP
31	GT161	GT161	12/08/03	Goualougo	GT	RC	feces	Ptt	EU527430	neg	8	aQQ	aQQ	8	KVT	KVT
32	GT169	GT169	12/14/03	Goualougo	GT	RC	feces	Ptt	MK178844	neg	1	aQQ	gQQ	1	NVP	NIP
33	GT170	GT170	12/14/03	Goualougo	GT	RC	feces	Ptt	DQ370318	neg	8	aQQ	aQQ	1	NVP	NIP
34	GT172	GT172	12/15/03	Goualougo	GT	RC	feces	Ptt	DQ370316	neg	1	aQQ	gQQ	8	KVT	KVT
35	GT201	GT201	02/26/04	Goualougo	GT	RC	feces	Ptt	EU527408	neg	8	aQQ	aQQ	1	KVT	NIP
36	GT202	GT202	02/26/04	Goualougo	GT	RC	feces	Ptt	MK178812	neg	8	aQQ	aQQ	1	KVT	NVP
37	GT203	GT203	02/27/04	Goualougo	GT	RC	feces	Ptt	DQ370317	neg	8	aQQ	aQQ	1	KVT	NVP
38	GT209	GT209	03/13/04	Goualougo	GT	RC	feces	Ptt	DQ370316	neg	1	aQQ	gQQ	8	KVT	KVT
39	GT218	GT218	03/20/04	Goualougo	GT	RC	feces	Ptt	DQ370316	neg	8	gQQ	gQQ	1	KVT	NVP
40	GT303	GT303	10/01/04	Goualougo	GT	RC	feces	Ptt	DQ370315	neg	1	aQQ	gQQ	8	KVT	KVT
41	GT310	GT310	10/05/04	Goualougo	GT	RC	feces	Ptt	DQ370318	neg	7	gQR	gQR	7	NIP	NIP
42	GT316	GT316	10/06/04	Goualougo	GT	RC	feces	Ptt	EU527431	neg	8	aQQ	aQQ	1	NVP	NIP
43	GT320	GT320	10/11/04	Goualougo	GT	RC	feces	Ptt	DQ367558	neg	7	aQQ	aQQ	8	KVT	KVT
44	GT405	GT405	12/12/04	Goualougo	GT	RC	feces	Ptt	DQ370315	neg	1	aQQ	gQQ	8	KVT	KVT
45	GT505	GT505	02/23/05	Goualougo	GT	RC	feces	Ptt	DQ370318	neg	8	aQQ	aQQ	1	KVT	NVP
46	GT512	GT512	02/27/05	Goualougo	GT	RC	feces	Ptt	DQ370315	neg	1	aQQ	gQQ	1	NVP	NIP
47	GT603	GT603	04/06/05	Goualougo	GT	RC	feces	Ptt	DQ370318	neg	8	aQQ	aQQ	1	KVT	NVP
48	GT606	GT606	04/12/05	Goualougo	GT	RC	feces	Ptt	DQ370317	neg	1	aQQ	gQQ	1	KVT	NVP
49	GT608	GT608	04/12/05	Goualougo	GT	RC	feces	Ptt	DQ370317	neg	1	aQQ	gQQ	1	KVT	NIP
50	GT615	GT615	04/19/05	Goualougo	GT	RC	feces	Ptt	DQ367572	neg	1	aQQ	gQR	1	KVT	NVP
51	GT617	GT617	04/20/05	Goualougo	GT	RC	feces	Ptt	MK178846	neg	1	aQQ	gQQ	1	NVT	NVP
52	GT702	GT702	05/07/05	Goualougo	GT	RC	feces	Ptt	MK178785	neg	1	aQQ	gQQ	1	KVT	NVP
53	GT704	GT704	05/10/05	Goualougo	GT	RC	feces	Ptt	EU527417	neg	1	aQQ	gQR	1	KVT	NIP
54	GT707	GT707	05/10/05	Goualougo	GT	RC	feces	Ptt	MK178803	neg	8	aQQ	aQQ	1	KVT	NVP
55	GT708	GT708	05/10/05	Goualougo	GT	RC	feces	Ptt	MK178740	neg	6	aQQ	gQQ	6	KVT	NIP
56	EK501	EK501	07/08/04	E'kom	EK	Cameroon	feces	Ptt	DQ367553	neg	8	aQQ	gQR	1	NIP	NVP
57	EK502	EK502	07/11/04	E'kom	EK	Cameroon	feces	Ptt	DQ367591	pos	1	aQQ	gQR	1	KVT	NIP
58	EK505	EK505	07/11/04	E'kom	EK	Cameroon	feces	Ptt	DQ367591	pos	8	aQQ	gQR	6	KVT	NVP
59	EK509	EK509	07/13/04	E'kom	EK	Cameroon	feces	Ptt	DQ367537	neg	8	aQQ	aQQ	1	KVT	NIP
60	EK522	EK522	08/18/04	E'kom	EK	Cameroon	feces	Ptt	DQ367540	neg	4	aQQ	aQQ	2	KVT	KVT
61	ME2515	ME2515	07/19/07	Melongodi	ME	CAR	feces	Ptt	MK178746	neg	6	aQQ	gQQ	6	KVT	NVP
62	ME2516	ME2516	07/19/07	Melongodi	ME	CAR	feces	Ptt	MK178757	neg	8	gQR	gQR	7	KVT	KVT
63	ME2519	ME2519	07/19/07	Melongodi	ME	CAR	feces	Ptt	MK178814	neg	8	aQQ	aQQ	1	KVT	NVP
64	ME2520	ME2520	07/19/07	Melongodi	ME	CAR	feces	Ptt	MK178765	neg	8	aQQ	aQQ	1	KVT	NVP
65	ME2524	ME2524	07/19/07	Melongodi	ME	CAR	feces	Ptt	MK178798	neg	8	gQR	gQR	1	KVT	NVP
66	ME2526	ME2526	07/19/07	Melongodi	ME	CAR	feces	Ptt	MK178833	neg	8	aQQ	aQQ	1	KVT	NVP
67	ME2532	ME2532	07/24/07	Melongodi	ME	CAR	feces	Ptt	MK178848	neg	7	aQQ	aQQ	6	KVT	NVP
68	ME2535	ME2535	07/24/07	Melongodi	ME	CAR	feces	Ptt	MK178825	neg	8	aQQ	aQQ	8	NVP	NVP
69	ME2536	ME2536	07/24/07	Melongodi	ME	CAR	feces	Ptt	MK178850	neg	8	aQQ	aQQ	1	KVT	NVP
70	DP003	DP003	02/15/03	Doumo Pierre	DP	Cameroon	feces	Ptt	DQ367534	neg	8	aQQ	aQQ	1	KVT	NIP

71	DP018	DP018	02/19/03	Doumo Pierre	DP	Cameroon	feces	Ptt	DQ367534	neg	1	aQQ	gQR	1	KVT	NVP
72	DP022	DP022	03/06/03	Doumo Pierre	DP	Cameroon	feces	Ptt	DQ367534	pos	1	aQQ	gQR	1	KVT	NVP
73	DP024	DP024	03/06/03	Doumo Pierre	DP	Cameroon	feces	Ptt	DQ367604	neg	8	aQQ	aQQ	1	KVT	NIP
74	DP069	DP069	04/12/03	Doumo Pierre	DP	Cameroon	feces	Ptt	DQ367534	neg	1	aQQ	gQQ	1	KVT	NIP
75	DP098	DP098	07/29/03	Doumo Pierre	DP	Cameroon	feces	Ptt	DQ367538	neg	1	aQQ	gQR	8	KVT	KVT
76	DP943	DP943	02/05/05	Doumo Pierre	DP	Cameroon	feces	Ptt	DQ367567	pos	8	gQR	gQR	1	NVP	KVT
77	MT145	MT145	08/14/03	Minta	MT	Cameroon	feces	Ptt	DQ367567	pos	1	aQQ	gQR	1	NVP	NIP
78	TC01	Sam	08/19/13	Tchimpounga	TC	RC	blood	Ptt	MK178730	neg	8	aQQ	aQQ	8	NIP	NIP
79	TC02	Tchvigna	08/07/13	Tchimpounga	TC	RC	blood	Ptt	MK178736	neg	1	aQQ	gQQ	8	NIP	NIP
80	TC03	Motambo	08/14/13	Tchimpounga	TC	RC	blood	Ptt	MK178830	neg	1	aQQ	gQQ	8	NIP	NIP
81	TC04	Mbebo	08/14/13	Tchimpounga	TC	RC	blood	Ptt	MK178797	neg	1	aQQ	gQQ	1	KVT	NIP
82	TC05	Kimenga	08/24/13	Tchimpounga	TC	RC	blood	Ptt	MK178783	neg	1	aQQ	gQR	8	KVT	KVT
83	TC06	Kuisa	08/29/13	Tchimpounga	TC	RC	blood	Ptt	MK178815	neg	1	aQQ	gQR	1	KVT	NIP
84	TC08	Bailielle	08/16/13	Tchimpounga	TC	RC	blood	Ptt	MK178791	neg	1	aQQ	gQQ	1	NVP	NIP
85	TC09	Anzac	08/13/13	Tchimpounga	TC	RC	blood	Ptt	MK178787	neg	8	aQQ	aQQ	1	NVP	NIP
86	TC12	Niari	08/23/13	Tchimpounga	TC	RC	blood	Ptt	MK178813	neg	1	aQQ	gQQ	8	NVP	NVP
87	TC13	Antonio	08/13/13	Tchimpounga	TC	RC	blood	Ptt	MK178770	neg	1	aQQ	gQQ	1	NVT	NVP
88	TC14	Moboulou	08/23/13	Tchimpounga	TC	RC	blood	Ptt	MK178836	neg	1	aQQ	gQQ	8	NIP	NIP
89	TC15	Dunez	08/13/13	Tchimpounga	TC	RC	blood	Ptt	MK178805	neg	8	aQQ	aQQ	1	NVP	NIP
90	TC17	Alex	08/14/13	Tchimpounga	TC	RC	blood	Ptt	MK178823	neg	1	aQQ	gQQ	1	NVP	NIP
91	TC19	Clara	08/22/13	Tchimpounga	TC	RC	blood	Ptt	MK178845	neg	1	aQQ	gQQ	1	NVP	NIP
92	TC20	Amazon	08/09/13	Tchimpounga	TC	RC	blood	Ptt	MK178726	neg	1	aQQ	gQQ	1	NVP	NIP
93	TC21	Shade	08/22/13	Tchimpounga	TC	RC	blood	Ptt	MK178733	neg	8	aQQ	aQQ	1	NVP	NIP
94	TC22	Ricky	08/22/13	Tchimpounga	TC	RC	blood	Ptt	MK178819	neg	8	aQQ	aQQ	1	KVT	NIP
95	TC23	Moundele	08/09/13	Tchimpounga	TC	RC	blood	Ptt	MK178816	neg	9	aQQ	aQQ	1	NIP	NIP
96	TC24	Brigette	08/22/13	Tchimpounga	TC	RC	blood	Ptt	MK178767	neg	1	aQQ	gQQ	1	NVP	NIP
97	TC25	Leki	08/09/13	Tchimpounga	TC	RC	blood	Ptt	EU527405	neg	1	aQQ	gQQ	1	KVT	NIP
98	SY067	Aaron	10/21/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178737	neg	1	aQQ	gQR	2	KVT	NIP
99	SY134	Amigo	10/05/12	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367546	neg	8	aQQ	aQQ	8	KVT	KVT
100	SY002	Anita	04/08/11	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178806	neg	8	aQQ	aQQ	2	KVT	NIP
101	SY109	Avery	05/29/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367592	neg	8	aQQ	aQQ	1	NVP	NIP
102	SY010	Baati	02/02/12	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367589	neg	8	aQQ	aQQ	8	NVP	NVP
103	SY071	Ballas	09/09/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178769	neg	1	aQQ	gQR	3	NVP	NIP
104	SY111	Berchi	05/22/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367541	neg	1	aQQ	gQR	3	NVP	NIP
105	SY072	Bikol	07/15/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178824	neg	1	aQQ	gQQ	1	KVT	NIP
106	SY145	Boumba	04/22/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367573	neg	8	aQQ	aQQ	1	KVT	NIP
107	SY051	Carla	02/28/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178756	neg	8	aQQ	aQQ	2	KVT	NIP
108	SY027	Caroline	07/30/12	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ370311	neg	8	aQQ	aQQ	1	KVT	NVP
109	SY012	Cecile	06/26/11	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367540	neg	4	aQQ	gQR	4	KVT	NIP
110	SY146	Charlo	04/22/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178796	neg	2	aQQ	gQR	2	NVP	NVP
111	SY028	Chouky	08/23/12	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178756	neg	8	aQQ	aQQ	8	KVT	KVT
112	SY029	Cindy	7/20/12	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178777	neg	8	aQQ	aQQ	2	KVT	NIP
113	SY076	Coffee	08/05/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178838	neg	8	aQQ	aQQ	2	NVP	NIP
114	SY112	Daniel	05/27/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367556	neg	8	aQQ	aQQ	8	KVT	KVT
115	SY078	Emma	10/18/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178800	neg	8	aQQ	aQQ	3	NVP	NIP
116	SY138	Foe	05/05/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178750	neg	8	aQQ	aQQ	1	KVT	NVP
117	SY113	Future	06/05/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178776	neg	1	aQQ	gQQ	8	NVP	NVP
118	SY042	Gabby	10/16/12	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367576	neg	8	aQQ	aQQ	1	NVP	NIP
119	SY054	Ginger	02/07/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367548	neg	2	aQQ	gQR	2	KVT	NVP
120	SY139	Gremlin	05/07/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367611	neg	1	aQQ	gQQ	8	NVP	NVP
121	SY043	Hope	10/19/12	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178775	neg	1	aQQ	gQQ	1	KVT	NIP
122	SY055	Jimi	10/13/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178829	neg	3	aQQ	gQR	3	KVT	NIP
123	SY086	Johnny	10/02/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178725	neg	1	aQQ	gQR	8	NVP	NVP
124	SY018	Kachka	02/04/12	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367537	neg	8	aQQ	aQQ	2	KVT	NIP
125	SY129	Kiki	05/19/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ370311	neg	8	aQQ	aQQ	8	NVP	NVP
126	SY020	Launa	02/02/12	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178756	neg	8	aQQ	aQQ	2	KVT	NVP
127	SY021	Leilah	02/03/12	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ370309	neg	1	gQQ	gQR	8	NVP	NVP
128	SY045	Lucy	10/20/12	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367590	neg	1	aQQ	gQQ	8	NVP	NVP
129	SY035	Mannie	07/20/12	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178754	neg	1	aQQ	gQQ	8	NVP	NVP

130	SY119	Massamba	05/04/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178847	neg	1	aQQ	gQQ	8	NIP	NIP
131	SY006	Milou	05/27/11	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367540	neg	8	aQQ	aQQ	8	KVT	KVT
132	SY120	Mintak	05/16/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367566	neg	2	aQQ	gQQ	2	KVT	NIP
133	SY024	Moon	12/28/11	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178731	neg	1	aQQ	gQQ	1	NVP	NIP
134	SY025	Mowgli	12/27/11	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367558	neg	1	aQQ	gQQ	8	NVP	NVP
135	SY047	Niate	11/20/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178810	neg	1	gQQ	gQR	1	NVP	NIP
136	SY100	Sambe	08/23/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367576	neg	5	aQQ	gQR	5	KVT	NIP
137	SY060	Shy	02/17/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367582	neg	8	aQQ	aQQ	1	NVP	NIP
138	SY125	Simon	05/19/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367537	neg	2	aQQ	aQQ	2	KVT	NVP
139	SY148	Simoosa	04/25/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178851	neg	1	gQQ	gQR	8	NVP	NVP
140	SY102	Stanley	08/07/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367537	neg	1	aQQ	gQR	1	KVT	NIP
141	SY126	Tati	05/22/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367600	neg	1	aQQ	gQR	7	NVP	NVP
142	SY103	Tic	10/17/13	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178821	neg	1	aQQ	gQQ	8	NVP	NVP
143	SY130	Tilly	05/21/14	Sanaga-Yong	SY	Cameroon	blood	Ptt	MK178773	neg	1	gQQ	gQR	1	KVT	NVP
144	SY008	Xeko	05/19/11	Sanaga-Yong	SY	Cameroon	blood	Ptt	DQ367555	neg	8	aQQ	aQQ	1	NVP	NIP
145	LP04	LP04	n/a	Lopé	LP	Gabon	feces	Ptt	EU527432	neg	2	aQQ	aQQ	2	NIP	NIP
146	LP08	LP08	n/a	Lopé	LP	Gabon	feces	Ptt	MK178808	neg	8	aQQ	aQQ	8	NIP	NIP
147	LP11	LP11	n/a	Lopé	LP	Gabon	feces	Ptt	EU527432	neg	2	aQQ	aQQ	3	NIP	NVP
148	LP12	LP12	n/a	Lopé	LP	Gabon	feces	Ptt	MK178752	neg	1	aQQ	aQQ	5	NIP	NVP
149	LP14	LP14	n/a	Lopé	LP	Gabon	feces	Ptt	MK178736	neg	8	aQQ	aQQ	8	NIP	NVP
150	LP28	LP28	n/a	Lopé	LP	Gabon	feces	Ptt	MK178840	neg	7	aQQ	gQR	7	NIP	NVP
151	BB100	BB100	06/07/03	Boumba Bek	BB	Cameroon	feces	Ptt	DQ367561	neg	8	aQQ	aQQ	8	KVT	KVT
152	BB234	BB234	04/13/03	Boumba Bek	BB	Cameroon	feces	Ptt	DQ367562	neg	6	aQQ	gQR	8	NIP	NIP
153	BM1034	BM1034	06/21/05	Bouamir	BM	Cameroon	feces	Ptt	MK178751	pos	8	aQQ	gQR	8	KVT	NVP
154	BQ391	BQ391	06/08/04	Belgique	BQ	Cameroon	feces	Ptt	DQ367538	neg	8	aQQ	gQR	8	NIP	NVP
155	BQ394	BQ394	06/10/04	Belgique	BQ	Cameroon	feces	Ptt	DQ367544	neg	8	aQQ	gQR	8	KVT	NVP
156	BQ475	BQ475	07/05/04	Belgique	BQ	Cameroon	feces	Ptt	DQ367542	neg	8	aQQ	aQQ	8	KVT	KVT
157	BQ493	BQ493	07/07/04	Belgique	BQ	Cameroon	feces	Ptt	DQ367586	neg	4	aQQ	gQR	2	KVT	NVP
158	BY4890	BY4890	11/28/09	Mboy II	BY	Cameroon	feces	Ptt	DQ367561	neg	8	aQQ	aQQ	8	KVT	NVP
159	CP1973	CP1973	12/17/06	Campo Ma'an	CP	Cameroon	feces	Ptt	MK178843	pos	8	gQR	gQR	8	NVP	NIP
160	CP470	CP470	05/14/04	Campo Ma'an	CP	Cameroon	feces	Ptt	DQ367594	neg	8	aQQ	aQQ	8	KVT	NVP
161	DD58	DD58	03/xx/09	Deng-Deng	DD	Cameroon	feces	Ptt	DQ367587	neg	3	aQQ	aQQ	8	KVT	KVT
162	DG529	DG529	09/02/04	Diang	DG	Cameroon	feces	Ptt	DQ367595	neg	8	aQQ	aQQ	8	KVT	NIP
163	DG530	DG530	09/02/04	Diang	DG	Cameroon	feces	Ptt	DQ367579	neg	8	aQQ	aQQ	8	KVT	NIP
164	DG548	DG548	10/08/04	Diang	DG	Cameroon	feces	Ptt	DQ367556	neg	8	aQQ	aQQ	8	KVT	NIP
165	LO36	LO36	09/10/06	Loango	LO	Gabon	feces	Ptt	MK178822	neg	3	gQQ	gQQ	3	NIP	NIP
166	LO37	LO37	09/15/05	Loango	LO	Gabon	feces	Ptt	MK178774	neg	8	aQQ	aQQ	8	NIP	NIP
167	LO49	LO49	03/17/06	Loango	LO	Gabon	feces	Ptt	MK178767	neg	1	aQQ	aQQ	4	NIP	NIP
168	LO50	LO50	06/04/06	Loango	LO	Gabon	feces	Ptt	MK178793	neg	5	aQQ	gQR	5	NIP	NIP
169	LO51	LO51	06/15/06	Loango	LO	Gabon	feces	Ptt	MK178789	neg	1	aQQ	aQQ	1	NIP	NIP
170	LO64	LO64	06/01/05	Loango	LO	Gabon	feces	Ptt	MK178837	neg	7	gQQ	gQQ	8	NIP	NIP
171	MT115	MT115	08/06/03	Minta	MT	Cameroon	feces	Ptt	DQ367564	pos	8	aQQ	aQQ	8	KVT	NVP
172	MT333	MT333	02/20/04	Minta	MT	Cameroon	feces	Ptt	DQ367556	neg	8	aQQ	aQQ	8	KVT	NVP
173	MT359	MT359	03/14/04	Minta	MT	Cameroon	feces	Ptt	DQ367582	neg	3	aQQ	aQQ	6	NVP	NVP
174	MT437	MT437	05/29/04	Minta	MT	Cameroon	feces	Ptt	DQ367537	neg	8	aQQ	gQR	8	NVP	NIP
175	ND3100	ND3100	n/a	Ndoki park	ND	CAR	feces	Ptt	MK178809	neg	8	aQQ	gQQ	8	KVT	NIP
176	SL994	SL994	6/28/05	Somalomo	SL	Cameroon	feces	Ptt	MK178779	neg	8	aQQ	aQQ	8	KVT	NIP
177	LB0023	LB0023	10/22/03	Lobéké	LB	Cameroon	feces	Ptt	DQ367546	pos	8	aQQ	aQQ	1	KVT	NIP
178	LB0714	LB0714	04/21/05	Lobéké	LB	Cameroon	feces	Ptt	MK178842	pos	8	aQQ	aQQ	8	NVP	NVP
179	LB0715	LB0715	04/21/05	Lobéké	LB	Cameroon	feces	Ptt	MK178842	pos	1	aQQ	gQR	8	NVP	NVP
180	LB0720	LB0720	04/23/05	Lobéké	LB	Cameroon	feces	Ptt	DQ367567	neg	1	aQQ	gQR	1	KVT	NVP
181	LB0724	LB0724	04/26/05	Lobéké	LB	Cameroon	feces	Ptt	MK178826	neg	8	aQQ	aQQ	1	KVT	NVP
182	LB0726	LB0726	04/26/05	Lobéké	LB	Cameroon	feces	Ptt	DQ367541	neg	8	aQQ	aQQ	1	KVT	NIP
183	LB0728	LB0728	04/26/05	Lobéké	LB	Cameroon	feces	Ptt	DQ367567	neg	1	aQQ	gQR	1	KVT	NVP
184	LB0730	LB0730	04/26/05	Lobéké	LB	Cameroon	feces	Ptt	MK178828	pos	1	aQQ	gQQ	1	NVT	NVP
185	LB0731	LB0731	04/28/05	Lobéké	LB	Cameroon	feces	Ptt	DQ367582	neg	8	aQQ	aQQ	1	NIP	NVP
186	LB0734	LB0734	04/28/05	Lobéké	LB	Cameroon	feces	Ptt	DQ367548	neg	8	aQQ	aQQ	1	NVT	NVP
187	MB0752	MB0752	04/20/05	Mambélé	MB	Cameroon	feces	Ptt	DQ367556	pos	1	aQQ	gQR	1	KVT	NIP
188	MB0754	MB0754	04/20/05	Mambélé	MB	Cameroon	feces	Ptt	MK178818	neg	1	aQQ	gQQ	1	KVT	NIP

189	MB0762	MB0762	04/21/05	Mambélé	MB	Cameroon	feces	Ptt	MK178841	neg	1	aQQ	gQQ	7	KVT	NIP
190	MB0763	MB0763	04/23/05	Mambélé	MB	Cameroon	feces	Ptt	MK178818	neg	1	aQQ	gQR	1	KVT	NVP
191	MB0765	MB0765	04/23/05	Mambélé	MB	Cameroon	feces	Ptt	MK178818	neg	8	aQQ	aQQ	1	KVT	NVP
192	MB0767	MB0767	04/23/05	Mambélé	MB	Cameroon	feces	Ptt	MK178729	neg	8	aQQ	aQQ	8	NVP	NIP
193	MB0768	MB0768	04/23/05	Mambélé	MB	Cameroon	feces	Ptt	MK178771	neg	1	aQQ	gQR	1	KVT	NVP
194	MB0773	MB0773	04/23/05	Mambélé	MB	Cameroon	feces	Ptt	DQ367548	pos	1	aQQ	gQQ	8	NVP	NVP
195	MB0775	MB0775	04/23/05	Mambélé	MB	Cameroon	feces	Ptt	DQ367566	pos	8	aQQ	aQQ	8	NIP	NIP
196	MB0776	MB0776	04/23/05	Mambélé	MB	Cameroon	feces	Ptt	MK178818	pos	8	aQQ	aQQ	2	KVT	NIP
197	MB0777	MB0777	04/23/05	Mambélé	MB	Cameroon	feces	Ptt	MK178750	neg	8	aQQ	aQQ	8	KVT	KVT
198	MB0782	MB0782	04/24/05	Mambélé	MB	Cameroon	feces	Ptt	MK178818	neg	8	aQQ	aQQ	8	NIP	NIP
199	MB0791	MB0791	04/28/05	Mambélé	MB	Cameroon	feces	Ptt	DQ367582	pos	7	aQQ	aQQ	8	NIP	NIP
200	MB0792	MB0792	04/28/05	Mambélé	MB	Cameroon	feces	Ptt	DQ367548	neg	6	aQQ	aQQ	8	NVP	NVP
201	MB0801	MB0801	04/28/05	Mambélé	MB	Cameroon	feces	Ptt	MK178759	pos	8	aQQ	aQQ	8	NVP	NVP
202	MB0803	MB0803	04/28/05	Mambélé	MB	Cameroon	feces	Ptt	MK178750	pos	8	aQQ	aQQ	1	KVT	NIP
203	MB0807	MB0807	04/28/05	Mambélé	MB	Cameroon	feces	Ptt	MK178722	neg	8	aQQ	gQR	8	KVT	NIP
204	MB0812	MB0812	04/28/05	Mambélé	MB	Cameroon	feces	Ptt	MK178771	neg	8	aQQ	aQQ	8	KVT	KVT
205	MB2330	MB2330	04/11/07	Mambélé	MB	Cameroon	feces	Ptt	MK178750	neg	8	aQQ	aQQ	8	KVT	KVT
206	MB2334	MB2334	04/11/07	Mambélé	MB	Cameroon	feces	Ptt	DQ367546	pos	8	aQQ	aQQ	2	KVT	NIP
207	MB2339	MB2339	04/11/07	Mambélé	MB	Cameroon	feces	Ptt	DQ367540	neg	8	aQQ	aQQ	1	NVP	NIP
208	MB2340	MB2340	04/11/07	Mambélé	MB	Cameroon	feces	Ptt	MK178750	pos	8	aQQ	aQQ	2	KVT	NIP
209	MB5133	MB5133	03/19/10	Mambélé	MB	Cameroon	feces	Ptt	DQ367556	neg	1	aQQ	gQR	1	KVT	NIP
210	MB5136	MB5136	03/19/10	Mambélé	MB	Cameroon	feces	Ptt	DQ367567	pos	7	aQQ	aQQ	1	NVP	NIP
211	MB5137	MB5137	03/19/10	Mambélé	MB	Cameroon	feces	Ptt	DQ367567	pos	1	aQQ	gQQ	1	NVP	NIP
212	MB5139	MB5139	03/19/10	Mambélé	MB	Cameroon	feces	Ptt	DQ367567	neg	1	gQQ	gQR	8	NIP	NIP
213	MB5143	MB5143	03/20/10	Mambélé	MB	Cameroon	feces	Ptt	DQ367548	neg	8	aQQ	aQQ	1	KVT	NIP
214	MB5144	MB5144	03/20/10	Mambélé	MB	Cameroon	feces	Ptt	JN191201	neg	8	aQQ	aQQ	1	KVT	NIP
215	MB5145	MB5145	03/20/10	Mambélé	MB	Cameroon	feces	Ptt	JN191201	pos	1	aQQ	gQQ	1	NVP	NIP
216	MB5147	MB5147	03/20/10	Mambélé	MB	Cameroon	feces	Ptt	MK178818	neg	1	aQQ	gQQ	1	KVT	NIP
217	MB5156	MB5156	03/21/10	Mambélé	MB	Cameroon	feces	Ptt	DQ367578	pos	7	aQQ	aQQ	8	NIP	NIP
218	MB5157	MB5157	03/21/10	Mambélé	MB	Cameroon	feces	Ptt	MK178728	neg	8	aQQ	aQQ	8	KVT	KVP
219	MB5159	MB5159	03/21/10	Mambélé	MB	Cameroon	feces	Ptt	MK178801	pos	8	aQQ	aQQ	1	NVT	NIP
220	MB5160	MB5160	03/21/10	Mambélé	MB	Cameroon	feces	Ptt	DQ367587	neg	8	aQQ	aQQ	1	KVT	NIP
221	MB5163	MB5163	03/24/10	Mambélé	MB	Cameroon	feces	Ptt	DQ367587	neg	8	aQQ	aQQ	8	NIP	NIP
222	MB5170	MB5170	03/26/10	Mambélé	MB	Cameroon	feces	Ptt	DQ367561	neg	8	aQQ	aQQ	8	KVT	KVT
223	MB6232	MB6232	11/12/10	Mambélé	MB	Cameroon	feces	Ptt	DQ367567	pos	1	aQQ	gQQ	1	NVP	NIP
224	MB6238	MB6238	11/14/10	Mambélé	MB	Cameroon	feces	Ptt	JN191203	neg	8	aQQ	aQQ	8	KVT	NVT
225	MB6243	MB6243	11/14/10	Mambélé	MB	Cameroon	feces	Ptt	JN191203	neg	12	aQQ	gQR	12	NIP	KVT
226	MB6414	MB6414	02/08/11	Mambélé	MB	Cameroon	feces	Ptt	DQ367566	pos	8	aQQ	aQQ	8	NIP	NIP
227	LB0007	LB0007	09/xx/02	Lobéké	LB	Cameroon	feces	Ptt	DQ367613	pos	8	aQQ	aQQ	8	KVT	KVT
228	LB0174	LB0174	03/04/03	Lobéké	LB	Cameroon	feces	Ptt	DQ367561	neg	4	aQQ	gQR	2	KVT	KVT
229	LB0208	LB0208	03/04/03	Lobéké	LB	Cameroon	feces	Ptt	DQ367556	neg	4	aQQ	gQR	4	NVT	NVP
230	LB0307	LB0307	01/10/04	Lobéké	LB	Cameroon	feces	Ptt	DQ367546	neg	7	aQQ	aQQ	1	KVT	NIP
231	LB0309	LB0309	01/10/04	Lobéké	LB	Cameroon	feces	Ptt	DQ367571	neg	1	aQQ	gQQ	1	KVT	NVP
232	LB0313	LB0313	01/10/04	Lobéké	LB	Cameroon	feces	Ptt	DQ367566	neg	3	aQQ	gQR	3	KVT	NVP
233	MB066	MB066	06/12/03	Mambélé	MB	Cameroon	feces	Ptt	DQ367550	pos	7	aQQ	aQQ	1	KVT	NIP
234	MB097	MB097	06/12/03	Mambélé	MB	Cameroon	feces	Ptt	DQ367545	neg	1	aQQ	gQQ	1	KVT	NIP
235	MB138	MB138	11/08/03	Mambélé	MB	Cameroon	feces	Ptt	DQ367566	neg	3	aQQ	gQQ	4	KVT	NVP
236	MB190	MB190	03/10/03	Mambélé	MB	Cameroon	feces	Ptt	DQ367571	neg	8	aQQ	aQQ	8	NIP	NIP
237	MB191	MB191	03/10/03	Mambélé	MB	Cameroon	feces	Ptt	DQ367566	pos	8	aQQ	aQQ	8	NIP	NIP
238	MB246	MB246	04/18/03	Mambélé	MB	Cameroon	feces	Ptt	DQ367575	neg	8	aQQ	gQR	1	NVP	NIP
239	MB316	MB316	11/12/03	Mambélé	MB	Cameroon	feces	Ptt	DQ367576	neg	1	gQQ	gQQ	1	KVT	NVP
240	MB318	MB318	12/13/03	Mambélé	MB	Cameroon	feces	Ptt	DQ367566	neg	1	aQQ	gQR	1	NVP	NIP
241	MB320	MB320	12/13/03	Mambélé	MB	Cameroon	feces	Ptt	DQ367566	neg	8	aQQ	aQQ	4	KVT	NVP
242	MB323	MB323	12/15/03	Mambélé	MB	Cameroon	feces	Ptt	DQ367578	neg	8	aQQ	aQQ	1	KVT	NVP
243	MB749	MB749	04/20/05	Mambélé	MB	Cameroon	feces	Ptt	DQ367566	pos	1	aQQ	gQQ	1	KVT	NIP
244	MB771	MB771	04/23/05	Mambélé	MB	Cameroon	feces	Ptt	JN191201	pos	1	aQQ	gQQ	1	NVP	NIP
245	MB790	MB790	04/28/05	Mambélé	MB	Cameroon	feces	Ptt	DQ367546	pos	8	aQQ	aQQ	1	KVT	NIP
246	MB897	MB897	04/26/05	Mambélé	MB	Cameroon	feces	Ptt	MK178835	pos	8	aQQ	aQQ	1	KVT	NIP
1	GM3861	Ch-042	08/11/14	Mitumba	MT	Tanzania	feces	Pts	DQ370331	neg	8	gQQ	gQQ	8	NVP	NVP

2	GM2673	Ch-007	09/07/11	Kasekela	KK	Tanzania	feces	Pts	DQ370331	neg	8	aQQ	gQQ	8	NVP	NVP
3	GM0218	Ch-038	08/03/02	Mitumba	MT	Tanzania	feces	Pts	DQ370331	neg	8	aQQ	gQQ	8	NVP	NVP
4	GM3001	Ch-135	06/08/12	Mitumba	MT	Tanzania	feces	Pts	DQ370331	neg	1	aQQ	gQQ	9	NVP	NVP
5	GM3974	Ch-078	11/01/14	Kasekela	KK	Tanzania	feces	Pts	DQ370330	neg	8	aQQ	aRQ	8	NVP	NVP
6	GM2142	Ch-090	10/02/10	Kasekela	KK	Tanzania	feces	Pts	DQ370330	neg	9	aQQ	gQQ	17	NVP	NVP
7	GM3973	Ch-130	11/01/14	Kasekela	KK	Tanzania	feces	Pts	DQ370330	neg	9	aQQ	aQQ	9	NVP	NVP
8	GM0005	Ch-008	n/a	Kasekela	KK	Tanzania	feces	Pts	DQ370331	neg	9	aQQ	aQQ	9	NVP	NVP
9	GM4515	Ch-151	07/07/16	Mitumba	MT	Tanzania	feces	Pts	DQ370330	neg	8	aQQ	aRQ	9	NVP	NVP
10	GM1164	Ch-041	02/11/07	Kasekela	KK	Tanzania	feces	Pts	DQ370325	neg	9	aQQ	aQQ	9	NVP	NVP
11	GM0239	Ch-070	03/13/02	Kalande	KL	Tanzania	feces	Pts	DQ370331	pos	9	aQQ	aQQ	9	NVP	NVP
12	GM0251	Ch-081	04/14/02	Kalande	KL	Tanzania	feces	Pts	DQ370324	neg	1	aQQ	gQQ	9	NVP	NVP
13	GM0244	Ch-082	08/07/02	Kalande	KL	Tanzania	feces	Pts	DQ370324	pos	1	aQQ	gQQ	9	NVP	NVP
14	GM0241	Ch-083	03/15/02	Kalande	KL	Tanzania	feces	Pts	DQ370324	neg	4	aQQ	gQQ	4	NVP	NVP
15	GM0302	Ch-084	04/18/03	Kalande	KL	Tanzania	feces	Pts	DQ370323	neg	1	aQQ	gQQ	8	NVP	NIP
16	GM0247	Ch-085	05/28/02	Kalande	KL	Tanzania	feces	Pts	DQ370331	neg	1	aQQ	gQQ	8	NVP	NVP
17	GM0364	Ch-091	06/05/04	Kalande	KL	Tanzania	feces	Pts	DQ370328	pos	8	aQQ	gQQ	8	NVP	NVP
18	GM0271	Ch-092	03/02/03	Kalande	KL	Tanzania	feces	Pts	DQ370325	neg	8	gQQ	gQQ	9	NVP	NVP
19	GM1542	Ch-106	01/19/09	Kalande	KL	Tanzania	feces	Pts	DQ370329	pos	8	aQQ	aQQ	8	NVP	NVP
20	GM0889	Ch-107	08/13/05	Kalande	KL	Tanzania	feces	Pts	DQ370331	pos	1	aQQ	gQQ	9	NVP	NVP
21	GM1705	Ch-109	07/09/09	Kalande	KL	Tanzania	feces	Pts	DQ370323	neg	2	aQQ	gQQ	2	NIP	NVP
22	GM0566	Ch-095	08/30/04	Kalande	KL	Tanzania	feces	Pts	DQ370319	neg	18	aQQ	aQQ	18	NVP	NVP
23	GM3806	Ch-137	07/16/14	Kasekela	KK	Tanzania	feces	Pts	DQ370320	pos	8	aQQ	gQQ	8	NVP	NVP
24	GM1212	Ch-104	07/22/07	Kasekela	KK	Tanzania	feces	Pts	DQ370325	neg	9	aQQ	aQQ	9	NVP	NVP
25	GM1720	Ch-044	10/28/09	Mitumba	MT	Tanzania	feces	Pts	DQ370330	neg	9	aQQ	gQQ	17	NVP	NVP
26	GM3096	Ch-097	08/12/12	Kasekela	KK	Tanzania	feces	Pts	DQ370321	neg	8	aQQ	gQQ	8	NVP	NVP
27	GM4794	Ch-002	04/21/17	Kasekela	KK	Tanzania	feces	Pts	DQ370321	neg	2	aQQ	gQQ	4	NVP	NVP
28	GM3807	Ch-145	07/16/14	Kasekela	KK	Tanzania	feces	Pts	DQ370321	neg	8	aQQ	gQQ	8	NVP	NVP
29	GM0486	Ch-069	05/05/04	Mitumba	MT	Tanzania	feces	Pts	DQ370325	neg	9	aQQ	aQQ	9	NVP	NVP
30	GM0715	Ch-099	05/11/05	Kasekela	KK	Tanzania	feces	Pts	DQ370328	pos	8	aQQ	gQQ	8	NVP	NVP
31	GM3348	Ch-059	12/20/12	Mitumba	MT	Tanzania	feces	Pts	DQ370325	neg	9	aQQ	gQQ	17	NVP	NVP
32	GM3884	Ch-105	08/19/14	Kasekela	KK	Tanzania	feces	Pts	DQ370320	neg	8	aQQ	aQQ	8	NVP	NVP
33	GM3996	Ch-101	12/20/14	Kasekela	KK	Tanzania	feces	Pts	DQ370328	neg	6	aQQ	gQQ	8	NVP	NVP
34	GM3401	Ch-119	01/12/13	Kasekela	KK	Tanzania	feces	Pts	DQ370320	pos	8	aQQ	aQQ	8	NVP	NVP
35	GM1410	Ch-049	07/11/08	Mitumba	MT	Tanzania	feces	Pts	DQ370325	neg	8	aQQ	gQQ	8	NVP	NVP
36	GM4649	Ch-136	11/21/16	Mitumba	MT	Tanzania	feces	Pts	DQ370327	neg	9	aQQ	aQQ	9	NVP	NVP
37	GM2906	Ch-102	04/09/12	Kasekela	KK	Tanzania	feces	Pts	DQ370327	neg	1	aQQ	aRQ	9	NVP	NVP
38	GM3920	Ch-009	09/04/14	Kasekela	KK	Tanzania	feces	Pts	DQ370327	neg	9	aRQ	aRQ	8	NVP	NVP
39	GM3993	Ch-004	12/18/14	Kasekela	KK	Tanzania	feces	Pts	DQ370327	pos	7	aQQ	gQQ	9	NVP	NVP
40	GM3224	Ch-148	10/15/12	Mitumba	MT	Tanzania	feces	Pts	DQ370327	neg	9	aQQ	gQQ	17	NVP	NVP
41	GM4742	Ch-010	02/27/17	Kasekela	KK	Tanzania	feces	Pts	DQ370327	neg	8	aQQ	aRQ	9	NVP	NVP
42	GM0021	Ch-011	11/07/00	Kasekela	KK	Tanzania	feces	Pts	DQ370327	neg	1	aQQ	aRQ	9	NVP	NVP
43	GM3816	Ch-131	02/20/14	Kasekela	KK	Tanzania	feces	Pts	DQ370327	neg	8	aQQ	gRQ	8	NVP	NVP
44	GM4784	Ch-012	04/06/17	Mitumba	MT	Tanzania	feces	Pts	DQ370327	neg	1	aQQ	aRQ	9	NVP	NVP
45	GM3223	Ch-046	10/15/12	Mitumba	MT	Tanzania	feces	Pts	DQ370327	neg	1	aQQ	aRQ	5	NVP	NVP
46	GM4475	Ch-112	05/18/16	Mitumba	MT	Tanzania	feces	Pts	DQ370327	neg	1	aQQ	gQQ	9	NVP	NVP
47	GM3380	Ch-065	01/02/13	Mitumba	MT	Tanzania	feces	Pts	DQ370327	neg	1	aQQ	gQQ	9	NVP	NVP
48	GM3098	Ch-005	08/13/12	Kasekela	KK	Tanzania	feces	Pts	DQ370327	neg	8	aQQ	aQQ	8	NVP	NVP
49	GM3052	Ch-013	07/15/12	Kasekela	KK	Tanzania	feces	Pts	DQ370327	neg	1	aQQ	aRQ	1	NVP	NVP
50	GM3280	Ch-051	10/31/12	Kasekela	KK	Tanzania	feces	Pts	DQ370327	neg	1	aRQ	gQQ	9	NVP	NVP
51	GM4862	Ch-014	06/19/17	Kasekela	KK	Tanzania	feces	Pts	DQ370327	neg	1	aRQ	gQQ	9	NVP	NVP
52	GM3836	Ch-015	08/03/14	Kasekela	KK	Tanzania	feces	Pts	DQ370324	neg	9	gQQ	gQQ	9	NVP	NVP
53	GM0981	Ch-006	11/05/05	Kasekela	KK	Tanzania	feces	Pts	DQ370324	pos	10	aQQ	aRQ	10	NVP	NVP
54	GM4102	Ch-077	04/19/15	Kasekela	KK	Tanzania	feces	Pts	DQ370324	pos	6	aRQ	gQQ	5	NVP	NVP
55	GM2919	Ch-132	04/16/12	Kasekela	KK	Tanzania	feces	Pts	DQ370324	neg	9	aRQ	aRQ	9	NVP	NVP
56	GM3171	Ch-140	09/17/12	Kasekela	KK	Tanzania	feces	Pts	DQ370324	neg	9	aQQ	aRQ	17	NVP	NVP
57	GM0016	Ch-016	11/13/00	Kasekela	KK	Tanzania	feces	Pts	DQ370324	neg	8	aQQ	aRQ	8	NVP	NVP
58	GM3402	Ch-017	01/15/13	Kasekela	KK	Tanzania	feces	Pts	DQ370324	neg	9	aQQ	gQQ	17	NVP	NVP
59	GM2376	Ch-127	03/11/11	Kasekela	KK	Tanzania	feces	Pts	DQ370324	neg	17	gQQ	gQQ	17	NVP	NVP
60	GM3746	Ch-141	06/17/14	Kasekela	KK	Tanzania	feces	Pts	DQ370324	neg	8	aQQ	gRQ	8	NVP	NVP

61	GM4775	Ch-001	04/05/17	Kasekela	KK	Tanzania	feces	Pts	DQ370324	neg	1	aRQ	gQQ	9	NVP	NVP
62	GM0240	Ch-089	08/23/02	Kalande	KL	Tanzania	feces	Pts	DQ370319	pos	17	aQQ	gQQ	17	NVP	NVP
63	GM1464	Ch-118	10/14/08	Kalande	KL	Tanzania	feces	Pts	DQ370319	pos	8	aQQ	gQQ	8	NVP	NVP
64	GM1827	Ch-018	02/06/10	Kasekela	KK	Tanzania	feces	Pts	DQ370330	neg	15	aQQ	gQQ	16	NVP	NVP
65	GM3978	Ch-071	11/05/14	Kasekela	KK	Tanzania	feces	Pts	DQ370328	pos	8	aQQ	gQQ	8	NVP	NVP
66	GM3879	Ch-133	08/17/14	Kasekela	KK	Tanzania	feces	Pts	DQ370328	pos	8	aQQ	aQQ	8	NVP	NVP
67	GM3064	Ch-057	07/23/12	Kasekela	KK	Tanzania	feces	Pts	DQ370329	neg	7	aQQ	aQQ	5	NVP	NVP
68	GM3090	Ch-129	08/09/12	Kalande	KL	Tanzania	feces	Pts	DQ370325	neg	1	aQQ	gQQ	9	NVP	NVP
69	GM3982	Ch-093	11/09/14	Kalande	KL	Tanzania	feces	Pts	DQ370325	pos	7	gQQ	gQQ	4	NVP	NVP
70	GM4534	Ch-110	07/19/16	Kalande	KL	Tanzania	feces	Pts	DQ370325	neg	1	aQQ	gQQ	9	NVP	NVP
71	GM4816	Ch-117	04/28/17	Kasekela	KK	Tanzania	feces	Pts	DQ370325	neg	1	aQQ	gQQ	9	NVP	NVP
72	GM3071	Ch-019	07/26/12	Kasekela	KK	Tanzania	feces	Pts	DQ370325	neg	9	aQQ	aQQ	9	NVP	NVP
73	GM3000	Ch-075	06/07/12	Mitumba	MT	Tanzania	feces	Pts	DQ370324	neg	9	aQQ	aQQ	9	NVP	NVP
74	GM4195	Ch-122	08/23/15	Mitumba	MT	Tanzania	feces	Pts	DQ370324	neg	17	aQQ	aQQ	17	NVP	NVP
75	GM4558	Ch-066	08/25/16	Mitumba	MT	Tanzania	feces	Pts	DQ370324	neg	6	aQQ	aQQ	8	NVP	NVP
76	GM1443	Ch-020	11/06/08	Kasekela	KK	Tanzania	feces	Pts	DQ370330	neg	8	aQQ	gQQ	8	NVP	NVP
77	GM4517	Ch-113	07/17/16	Mitumba	MT	Tanzania	feces	Pts	DQ370328	neg	9	aQQ	aQQ	9	NVP	NVP
78	GM4849	Ch-067	05/29/17	Mitumba	MT	Tanzania	feces	Pts	DQ370324	neg	7	aQQ	gQQ	7	NVP	NIP
79	GM3165	Ch-047	09/11/12	Mitumba	MT	Tanzania	feces	Pts	DQ370324	neg	9	aQQ	gQQ	17	NVP	NVP
80	GM3961	Ch-126	10/11/14	Mitumba	MT	Tanzania	feces	Pts	DQ370324	neg	16	aQQ	gQQ	14	NVP	NVP
81	GM2540	Ch-076	06/18/11	Mitumba	MT	Tanzania	feces	Pts	DQ370328	neg	9	aQQ	aQQ	9	NVP	NVP
82	GM4801	Ch-108	04/25/17	Kalande	KL	Tanzania	feces	Pts	DQ370319	neg	1	aQQ	gQQ	9	NVP	NVP
83	GM0661	Ch-021	12/02/04	Kasekela	KK	Tanzania	feces	Pts	DQ370319	pos	9	aQQ	aQQ	9	NVP	NVP
84	GM2736	Ch-103	10/07/11	Kasekela	KK	Tanzania	feces	Pts	DQ370319	pos	9	aQQ	aQQ	9	NVP	NVP
85	GM4835	Ch-098	05/23/17	Mitumba	MT	Tanzania	feces	Pts	DQ370322	neg	9	gQQ	gQQ	9	NVP	NVP
86	GM4836	Ch-125	05/25/17	Mitumba	MT	Tanzania	feces	Pts	DQ370322	neg	8	gQQ	gQQ	8	NVP	NVP
87	GM4861	Ch-022	06/13/17	Kasekela	KK	Tanzania	feces	Pts	DQ370321	pos	9	gQQ	gQQ	9	NVP	NVP
88	GM3785	Ch-079	07/08/14	Kasekela	KK	Tanzania	feces	Pts	DQ370323	neg	9	gQQ	gQQ	9	NVP	NVP
89	GM4109	Ch-144	07/12/15	Kasekela	KK	Tanzania	feces	Pts	DQ370323	neg	1	aRQ	gQQ	9	NVP	NVP
90	GM4180	Ch-152	08/20/15	Mitumba	MT	Tanzania	feces	Pts	DQ370322	neg	1	aQQ	gQQ	9	NVP	NVP
91	GM4143	Ch-088	07/12/15	Kalande	KL	Tanzania	feces	Pts	DQ370331	neg	9	gQQ	gQQ	9	NVP	NVP
92	GM3953	Ch-100	09/29/14	Kalande	KL	Tanzania	feces	Pts	DQ370323	pos	8	gQQ	gQQ	8	NVP	NVP
93	GM1532	Ch-064	09/17/08	Kalande	KL	Tanzania	feces	Pts	DQ370323	pos	9	gQQ	gQQ	9	NVP	NVP
94	GM0667	Ch-024	12/14/04	Kasekela	KK	Tanzania	feces	Pts	DQ370325	neg	17	aQQ	gQQ	17	NVP	NVP
95	GM3824	Ch-023	07/24/14	Kasekela	KK	Tanzania	feces	Pts	DQ370329	neg	1	aQQ	gQQ	9	NVP	NVP
96	GM3955	Ch-086	09/29/14	Kalande	KL	Tanzania	feces	Pts	DQ370331	pos	8	aQQ	gQQ	8	NVP	NVP
97	GM3453	Ch-048	06/07/13	Mitumba	MT	Tanzania	feces	Pts	DQ370323	pos	9	aQQ	gQQ	9	NVP	NVP
98	GM1891	Ch-120	03/30/10	Kasekela	KK	Tanzania	feces	Pts	DQ370326	neg	8	gQQ	gQQ	9	NVP	NVP
99	GM3097	Ch-054	08/12/12	Kasekela	KK	Tanzania	feces	Pts	DQ370326	neg	17	aQQ	aQQ	17	NVP	NVP
100	GM4113	Ch-073	06/06/15	Kasekela	KK	Tanzania	feces	Pts	DQ370326	neg	8	aRQ	gQQ	16	NVP	NVP
101	GM1703	Ch-025	09/27/09	Kasekela	KK	Tanzania	feces	Pts	DQ370326	neg	9	aQQ	gQQ	17	NVP	NVP
102	GM4674	Ch-026	11/25/16	Kasekela	KK	Tanzania	feces	Pts	DQ370326	neg	9	gQQ	gQQ	9	NVP	NVP
103	GM0121	Ch-028	12/29/01	Kasekela	KK	Tanzania	feces	Pts	DQ370326	neg	8	aQQ	gQQ	8	NVP	NVP
104	GM4071	Ch-146	03/22/15	Kasekela	KK	Tanzania	feces	Pts	DQ370326	neg	7	aRQ	gQQ	6	NVP	NVP
105	GM4118	Ch-029	05/30/15	Kasekela	KK	Tanzania	feces	Pts	DQ370331	neg	2	aQQ	gQQ	10	NVP	NVP
106	GM3452	Ch-056	05/19/13	Kasekela	KK	Tanzania	feces	Pts	DQ370326	neg	2	aQQ	aRQ	5	NVP	NVP
107	GM4795	Ch-116	04/21/17	Kasekela	KK	Tanzania	feces	Pts	DQ370326	neg	9	aQQ	aQQ	9	NVP	NVP
108	GM0337	Ch-030	08/07/03	Kasekela	KK	Tanzania	feces	Pts	DQ370323	pos	9	aQQ	aQQ	9	NVP	NIP
109	GM1763	Ch-031	10/12/09	Kasekela	KK	Tanzania	feces	Pts	DQ370326	neg	1	aQQ	gQQ	11	NVP	NVP
110	GM4206	Ch-114	08/11/15	Kasekela	KK	Tanzania	feces	Pts	DQ370325	neg	9	aQQ	gQQ	17	NVP	NVP
111	GM4004	Ch-032	12/09/14	Kasekela	KK	Tanzania	feces	Pts	DQ370325	neg	8	aQQ	gQQ	8	NVP	NVP
112	GM4485	Ch-142	06/25/16	Kasekela	KK	Tanzania	feces	Pts	DQ370325	neg	4	gQQ	gQQ	2	NVP	NVP
113	GM3705	Ch-058	02/04/14	Kasekela	KK	Tanzania	feces	Pts	DQ370325	neg	1	aRQ	gQQ	9	NVP	NVP
114	GM1909	Ch-034	04/05/10	Kasekela	KK	Tanzania	feces	Pts	DQ370325	neg	1	aQQ	aRQ	9	NVP	NVP
115	GM1320	Ch-033	08/09/07	Kasekela	KK	Tanzania	feces	Pts	DQ370325	pos	17	aQQ	aQQ	17	NVP	NVP
116	GM4522	Ch-060	07/23/16	Kasekela	KK	Tanzania	feces	Pts	DQ370325	neg	2	aQQ	gQQ	10	NVP	NVP
117	GM4247	Ch-050	09/14/15	Kasekela	KK	Tanzania	feces	Pts	DQ370319	neg	9	aQQ	aQQ	9	NVP	NVP
118	GM1939	Ch-003	07/03/10	Kasekela	KK	Tanzania	feces	Pts	DQ370330	neg	9	gQQ	gQQ	9	NVP	NVP
119	GM0226	Ch-087	06/14/02	Kalande	KL	Tanzania	feces	Pts	DQ370331	neg	9	gQQ	gQQ	9	NVP	NVP

120	GM0700	Ch-080	07/21/04	Mitumba	MT	Tanzania	feces	Pts	DQ370329	pos	10	aQQ	gQQ	16	NVP	NVP
121	GM0703	Ch-045	10/15/04	Mitumba	MT	Tanzania	feces	Pts	DQ370322	pos	9	aQQ	aQQ	9	NVP	NVP
122	GM4001	Ch-150	12/28/14	Mitumba	MT	Tanzania	feces	Pts	DQ370331	neg	8	aQQ	aQQ	8	NVP	NVP
123	GM3390	Ch-035	12/18/12	Kasekela	KK	Tanzania	feces	Pts	DQ370320	neg	2	aQQ	gQQ	10	NVP	NVP
124	GM3016	Ch-055	06/24/12	Mitumba	MT	Tanzania	feces	Pts	DQ370322	neg	8	aQQ	gQQ	8	NVP	NVP
125	GM0168	Ch-036	06/08/02	Kasekela	KK	Tanzania	feces	Pts	DQ370322	pos	18	aQQ	gQQ	26	NVP	NVP
126	GM3046	Ch-061	07/11/12	Kasekela	KK	Tanzania	feces	Pts	DQ370319	neg	9	aQQ	aQQ	9	NVP	NVP
127	GM3333	Ch-052	12/05/12	Kasekela	KK	Tanzania	feces	Pts	DQ370319	pos	8	aQQ	aQQ	8	NVP	NVP
128	GM3049	Ch-115	07/12/12	Kasekela	KK	Tanzania	feces	Pts	DQ370319	neg	9	aQQ	aRQ	17	NVP	NVP
129	AM0305	AM0305	08/04/05	Amunyalala	AM	DRC*	feces	Pts	EU527446	pos	1	aQQ	gQQ	7	NVP	NVP
130	AN1561	AN1561	03/16/07	Ango	AN	DRC	feces	Pts	EU527391	neg	8	aQQ	gQQ	4	KVT	NVP
131	AN1570	AN1570	03/26/07	Ango	AN	DRC	feces	Pts	EU527391	neg	2	aQQ	gQQ	3	KVT	NVT
132	BA0432	BA0432	01/09/06	Bafwaboli	BA	DRC	feces	Pts	EU527410	pos	8	gQQ	gQQ	8	NVP	NVP
133	BA0807	BA0807	08/13/06	Bafwaboli	BA	DRC	feces	Pts	DQ370333	pos	5	gQQ	gQQ	6	NVP	NVP
134	BA1216	BA1216	12/02/06	Bafwaboli	BA	DRC	feces	Pts	EU527448	neg	8	gQQ	gQQ	8	NVP	NVP
135	BA1284	BA1284	02/18/07	Bafwaboli	BA	DRC	feces	Pts	JQ866072	neg	8	gQQ	gQQ	8	NVP	NVP
136	BA1290	BA1290	02/20/07	Bafwaboli	BA	DRC	feces	Pts	JQ866079	pos	8	gQQ	gQQ	8	NVP	NVP
137	BA2095	BA2095	08/02/07	Bafwaboli	BA	DRC	feces	Pts	JQ866080	neg	4	aQQ	gQQ	8	NVP	NVP
138	BA2518	BA2518	07/25/08	Bafwaboli	BA	DRC	feces	Pts	JQ866081	neg	8	gQQ	gQQ	8	NVP	NVP
139	BA2858	BA2858	11/05/09	Bafwaboli	BA	DRC	feces	Pts	DQ370333	neg	1	aQQ	gQQ	8	NVP	NVP
140	BF2160	BF2160	07/04/07	Bafwasende	BF	DRC	feces	Pts	EU527415	neg	4	aQQ	gQQ	4	NIP	NVP
141	BI2415	BI2415	04/21/07	Penetungu	BI	DRC	feces	Pts	EU527448	neg	4	aQQ	gQQ	4	NIP	NVP
142	BI2423	BI2423	08/18/07	Penetungu	BI	DRC	feces	Pts	DQ370340	neg	8	gQQ	gQQ	8	NVP	NVP
143	BL1787	BL1787	04/04/07	Bongbola	BL	DRC	feces	Pts	JQ866117	neg	8	gQQ	gQQ	3	NIP	NVP
144	BL1816	BL1816	04/29/07	Bongbola	BL	DRC	feces	Pts	JQ866118	neg	4	aQQ	gQQ	4	NVP	NVP
145	BL1822	BL1822	05/03/07	Bongbola	BL	DRC	feces	Pts	JQ866113	neg	4	aQQ	gQQ	4	KVT	NVP
146	BM1622	BM1622	02/20/07	Bomili	BM	DRC	feces	Pts	JQ866127	neg	8	gQQ	gQQ	8	NVP	NVP
147	BM1754	BM1754	04/26/07	Bomili	BM	DRC	feces	Pts	JQ866128	neg	8	aQQ	gQQ	4	NIP	NVP
148	BR2982	BR2982	01/10/10	Biruwe	BR	DRC	feces	Pts	JQ866212	neg	8	gQQ	gQQ	1	NVP	NIP
149	BT1158	BT1158	10/30/06	Buta	BT	DRC	feces	Pts	JQ866133	neg	1	aQQ	gQQ	7	NVP	NVP
150	DL1617	DL1617	01/11/07	Dingila	DL	DRC	feces	Pts	EU527391	neg	4	aQQ	gQQ	4	KVT	NVP
151	EP0482	EP0482	01/30/06	Epulu	EP	DRC	feces	Pts	EU527416	pos	1	aQQ	gQQ	1	KVT	NVP
152	EP1892	EP1892	04/28/07	Epulu	EP	DRC	feces	Pts	JQ866137	neg	4	aQQ	gQQ	4	NVP	NVP
153	KA0385	KA0385	12/17/05	Kabuka	KA	DRC	feces	Pts	JQ866162	pos	6	aQQ	gQQ	6	NVP	NVP
154	KA0869	KA0869	09/02/06	Kabuka	KA	DRC	feces	Pts	JQ866164	pos	8	gQQ	gQQ	8	NVP	NVP
155	KA1423	KA1423	01/28/07	Kabuka	KA	DRC	feces	Pts	EU527452	pos	8	gQQ	gQQ	8	NVP	NVP
156	KA1683	KA1683	03/12/07	Kabuka	KA	DRC	feces	Pts	DQ370340	neg	8	gQQ	gQQ	8	NVP	NVP
157	KA2204	KA2204	09/28/07	Kabuka	KA	DRC	feces	Pts	JQ866154	neg	2	aQQ	gQQ	3	NVT	NVP
158	KA2213	KA2213	09/05/07	Kabuka	KA	DRC	feces	Pts	JQ866156	neg	8	gQQ	gQQ	8	NVP	NVP
159	KE1512	KE1512	02/23/07	Kasese	KE	DRC	feces	Pts	JQ866166	neg	3	gQQ	gQQ	2	NVP	NVP
160	KO2727	KO2727	05/25/09	Kotakoli	KO	DRC	feces	Pts	JQ866228	neg	8	gQQ	gQQ	8	NVP	NVP
161	KO2732	KO2732	06/05/09	Kotakoli	KO	DRC	feces	Pts	JQ866238	neg	2	aQQ	gQQ	7	NVP	NVP
162	KS0378	KS0378	01/18/06	Kisangani	KS	DRC	feces	Pts	JQ866175	pos	1	aQQ	gQQ	8	NVP	NVP
163	LU1921	LU1921	06/24/07	Lubutu	LU	DRC	feces	Pts	EU527446	neg	8	gQQ	gQQ	4	NIP	NVP
164	LU2066	LU2066	08/09/07	Lubutu	LU	DRC	feces	Pts	DQ370340	neg	3	aQQ	gQQ	5	NVP	NVP
165	LU2072	LU2072	08/13/07	Lubutu	LU	DRC	feces	Pts	DQ370342	neg	6	gQQ	gQQ	8	NVP	NVP
166	LU2083	LU2083	08/20/07	Lubutu	LU	DRC	feces	Pts	DQ370332	neg	2	gQQ	gQQ	2	NIP	NVP
167	MO2125	MO2125	08/15/07	Mongandjo	MO	DRC	feces	Pts	EU527391	neg	5	gQQ	gQQ	8	NVP	NVP
168	MO2131	MO2131	08/24/07	Mongandjo	MO	DRC	feces	Pts	JQ866126	neg	8	gQQ	gQQ	8	NVP	NVP
169	MU0409	MU0409	12/27/05	Mungbere	MU	DRC	feces	Pts	JQ866197	pos	1	aQQ	gQQ	8	NVP	NVP
170	MU1637	MU1637	03/03/07	Mungbere	MU	DRC	feces	Pts	JQ866192	neg	4	aQQ	gQQ	4	KVT	NVP
171	ON1340	ON1340	02/12/07	Onga	ON	DRC	feces	Pts	JQ866164	neg	4	aQQ	gQQ	8	NVP	NVP
172	OP2151	OP2151	07/30/07	Opienge	OP	DRC	feces	Pts	JQ866202	neg	7	gQQ	gQQ	4	NIP	NVP
173	PA0341	PA0341	07/12/05	Parisi	PA	DRC	feces	Pts	JQ866212	neg	7	gQQ	gQQ	4	NIP	NIP
174	PA0584	PA0584	03/17/06	Parisi	PA	DRC	feces	Pts	JQ866217	pos	8	aQQ	aQQ	8	NVP	NVP
175	PA1046	PA1046	09/15/06	Parisi	PA	DRC	feces	Pts	JQ866205	pos	7	aQQ	gQQ	7	NVP	NVP
176	PA1592	PA1592	03/16/07	Parisi	PA	DRC	feces	Pts	JQ866207	pos	8	gQQ	gQQ	8	NVP	NVP
177	UB0437	UB0437	01/05/06	Ubangi	UB	DRC	feces	Pts	JQ866235	pos	8	gQQ	gQQ	8	NVP	NVP
178	UB1451	UB1451	02/22/07	Ubangi	UB	DRC	feces	Pts	JQ866229	neg	8	gQQ	gQQ	8	NVP	NVP

179	UB1456	UB1456	02/22/07	Ubangi	UB	DRC	feces	Pts	JQ866239	pos	5	gQQ	gQQ	6	NVP	NVP
180	UB2045	UB2045	07/15/07	Ubangi	UB	DRC	feces	Pts	JQ866243	neg	8	gQQ	gQQ	8	NVP	NVP
181	WA0541	WA0541	03/28/06	Wanie-rukula	WA	DRC	feces	Pts	EU527415	pos	1	aQQ	gQQ	8	NVP	NVP
182	WA0551	WA0551	03/29/06	Wanie-rukula	WA	DRC	feces	Pts	DQ370342	pos	1	aQQ	gQQ	1	NVP	NIP
183	WB0417	WB0417	01/18/06	Wamba	WB	DRC	feces	Pts	JQ866262	neg	1	aQQ	gQQ	7	NVP	NVP
184	WB0710	WB0710	06/01/06	Wamba	WB	DRC	feces	Pts	EU527391	pos	7	aQQ	gQQ	8	NVP	NVP
185	WK2833	WK2833	10/16/09	Walikale	WK	DRC	feces	Pts	JQ866203	neg	8	gQQ	gQQ	3	NIP	NVP
186	UG220	UG220	11/01/09	Ugalla	UG	Tanzania	feces	Pts	EU527468	neg	8	aQQ	gQQ	8	NVP	NVP
187	UG259	UG259	10/17/09	Ugalla	UG	Tanzania	feces	Pts	JN091704	neg	8	aQQ	aQQ	8	NVP	NIP
188	UG260	UG260	10/11/09	Ugalla	UG	Tanzania	feces	Pts	DQ370324	neg	7	gQQ	gQQ	7	NVP	NVP
189	UG263	UG263	10/12/09	Ugalla	UG	Tanzania	feces	Pts	EU527468	pos	8	gQQ	gQQ	8	NVP	NVP
190	UG264	UG264	10/30/09	Ugalla	UG	Tanzania	feces	Pts	EU527467	neg	2	gQQ	gQQ	3	NVP	NVP
191	UG271	UG271	10/30/09	Ugalla	UG	Tanzania	feces	Pts	DQ370321	pos	8	aQQ	gQQ	8	NVP	NVP
192	UG320	UG320	02/15/10	Ugalla	UG	Tanzania	feces	Pts	JN091703	neg	8	aQQ	gQQ	8	NVP	NVP
193	UG037	UG037	06/12/09	Ugalla	UG	Tanzania	feces	Pts	EU527468	pos	7	aQQ	aQQ	8	NVP	NVP
194	UG060	UG060	07/30/09	Ugalla	UG	Tanzania	feces	Pts	JN091703	pos	7	aQQ	aQQ	8	NVP	NVP
195	UG096	UG096	08/14/09	Ugalla	UG	Tanzania	feces	Pts	DQ370321	neg	8	aQQ	gQQ	8	NVP	NVP
196	UG038	UG038	06/26/09	Ugalla	UG	Tanzania	feces	Pts	JN091703	pos	8	aQQ	aQQ	8	NVP	NVP
197	BF1167	BF1167	12/23/06	Bafwasende	BF	DRC	feces	Pts	EU527414	pos	9	gQQ	gQQ	9	NVP	NVP

[#]Samples are labeled according to their field site of origin (see Fig. S1 for their geographic location) followed by an individual (ID) number.

[†]Chimpanzees from habituated communities and sanctuaries are identified by their name, except for the Mitumba and Kasekela communities in Gombe, which have a Ch-number.

[‡]CD4 exon 2 and exon 3 were amplified by nested PCR using primers located in the adjacent introns (see Methods for details).

[§]Chimpanzee subspecies: Ptv: *P. t. verus*; Pte, *P. t. ellioti*; Ptt, *P. t. troglodytes*; Pts, *P. t. schweinfurthii*.

[¶]Number of individual PCR amplicons sequenced; for each amplicon, a minimum of 10,000 reads were obtained using Illumina MiSeq.

[‡]Amplicons were sequenced to maintain linkage between polymorphisms, including the synonymous nucleotide change (a/g) at position 51 of the chimpanzee CD4 gene sequence and the amino acid substitutions at positions 25 (Q25R) and 40 (Q40R) of the mature CD4 protein.

[®]Amplicons were sequenced to maintain linkage between the amino acids substitutions at positions 52 (N52K), 55 (V55I) and 68 (P68T) of the mature CD4 protein.

[‡]n/a, not available.

[‡]n/d, not determined.

[‡]SIVcpz infection status was determined by fecal Western Blot analysis or amplification of viral sequences from fecal RNA by RT-PCR.

[‡]Republic of Congo.

[‡]Central African Republic.

[‡]Democratic Republic of the Congo.

Table S4. Clinical history of chimpanzees experimentally infected with SIVcpzANT

Name	Duration of infection (years)	Current status	Clinical manifestations of SIVcpzANT infection	Date of plasma collection	Plasma viral load (vRNA/ml)	Year of CD4+ T-cell counts [@]	CD4+ T-cell counts (cells/ μ l) [@]	CD4 genotype	Refs.
Debbie (X284)	>22	alive	none	01/21/10 10/26/10 06/28/11	3,208 26,397 [§] 4,403	2010	1,606	QQNVP/QQNVT	(9, 11)
Cotton (X115)	>22	alive, on ART treatment	CD4 T-cell depletion, thrombocytopenia, persistent soft tissue infection	05/21/02 09/25/12 11/25/14	77,142 [§] 1,440,622 [§] 861,000 [§]	2010 2014	229 220	QQNVT/QQNVT	(9-11, 13)
Quinn (X176)	21	died 2017	CD4 T-cell depletion	02/21/15 02/15/16	134,819 288,553	2013	115	QQNVT/QQNVT	(9, 11)

[@]Values for CD4 T cell counts as reported in ref. 9.

[§]Values for plasma viral loads as reported in refs. 8 and 11.

Table S5. Potential N-linked glycosylation sites in the D1 domain of primate CD4

Species	Common name	PNGS position[@]	GenBank accession number
<i>Microcebus murinus</i>	Gray mouse lemur	32	XP_012616152
<i>Propithecus coquereli</i>	Coquerel's sifaka	32	XP_012493258
<i>Aotus azarai</i>	Azara's night monkey	none	AKM95885
<i>Aotus nancymaae</i>	Ma's night monkey	none	AKM95886
<i>Aotus nancymaae</i>	Ma's night monkey	none	NP_001295452
<i>Aotus nancymaae</i>	Ma's night monkey	none	XP_021526653
<i>Aotus vociferans</i>	Noisy night monkey	none	AKM95887
<i>Alouatta sara</i>	Bolivian red howler monkey	none	AHY35182
<i>Callithrix jacchus</i>	White-tufted-ear marmoset	none	NP_001254701
<i>Cebus capucinus</i>	White-headed capuchin	none	XP_017372528
<i>Saimiri boliviensis</i>	Bolivian squirrel monkey	none	XP_003944905
<i>Saimiri sciureus</i>	Common squirrel monkey	none	AAN14533
<i>Saimiri sciureus</i>	Common squirrel monkey	none	BAA13131
<i>Plecturocebus cupreus</i>	Coppery titi	none	AHY35181
<i>Colobus angolensis</i>	Angola colobus	none	XP_011807481
<i>Colobus guereza</i>	Mantled guereza	none	AHY35179
<i>Rhinopithecus bieti</i>	Black snub-nosed monkey	none	XP_017747331
<i>Rhinopithecus roxellana</i>	Golden snub-nosed monkey	none	XP_010384216
<i>Trachypithecus francoisi</i>	Fancois' langur	none	AHY35180
<i>Cercocebus atys</i>	Sooty mangabey	17	AKJ85281
<i>Cercocebus atys</i>	Sooty mangabey	17	CAA51753
<i>Cercocebus atys</i>	Sooty mangabey	17	CAA51754
<i>Cercocebus atys</i>	Sooty mangabey	17	XP_011909758
<i>Cercopithecus cephus</i>	Moustached guenon	32	BAT21110
<i>Cercopithecus wolffi</i>	Wolf's monkey	17	AHY35175
<i>Chlorocebus aethiops</i>	Grivet	17, 32	AAB60873
<i>Chlorocebus aethiops</i>	Grivet	17	BAA13132
<i>Chlorocebus aethiops</i>	Grivet	17, 21	CAA51748
<i>Chlorocebus pygerythrus</i>	Vervet	17, 21	AAB60874
<i>Chlorocebus pygerythrus</i>	Vervet	17, 32	ALX27176
<i>Chlorocebus sabaeus</i>	Green monkey	17	AAB60870
<i>Chlorocebus sabaeus</i>	Green monkey	17	AAB60871
<i>Chlorocebus sabaeus</i>	Green monkey	17, 21	AAB60872
<i>Chlorocebus sabaeus</i>	Green monkey	17	APH81113
<i>Chlorocebus sabaeus</i>	Green monkey	17, 21	APH81114
<i>Chlorocebus sabaeus</i>	Green monkey	17	XP_007965604
<i>Chlorocebus tantalus</i>	Tantalus monkey	17, 21	AAB60868
<i>Chlorocebus tantalus</i>	Tantalus monkey	17, 21	AAB60869
<i>Erythrocebus patas</i>	Patas monkey	17	CAA51750
<i>Lophocebus albigena</i>	Grey-cheeked mangabey	17	AHY35177
<i>Macaca fascicularis</i>	Crab-eating macaque	17	BAA09673
<i>Macaca fascicularis</i>	Crab-eating macaque	17	AHY35178
<i>Macaca fascicularis</i>	Crab-eating macaque	17	XP_005570013
<i>Macaca fuscata</i>	Japanese macaque	17	BAA09672
<i>Macaca mulatta</i>	Rhesus macaque	17	BAA09671
<i>Macaca mulatta</i>	Rhesus macaque	17	ATD50242
<i>Macaca mulatta</i>	Rhesus macaque	17	ATD50243
<i>Macaca mulatta</i>	Rhesus macaque	17	ATD50244
<i>Macaca mulatta</i>	Rhesus macaque	17	ATD50245
<i>Macaca mulatta</i>	Rhesus macaque	17	ATD50246
<i>Macaca mulatta</i>	Rhesus macaque	17	CAA51752
<i>Macaca mulatta</i>	Rhesus macaque	17	XP_015006303

<i>Macaca nemestrina</i>	Pig-tailed macaque	17	ATD50235
<i>Macaca nemestrina</i>	Pig-tailed macaque	17	ATD50236
<i>Macaca nemestrina</i>	Pig-tailed macaque	17	ATD50237
<i>Macaca nemestrina</i>	Pig-tailed macaque	17	ATD50238
<i>Macaca nemestrina</i>	Pig-tailed macaque	17	ATD50239
<i>Macaca nemestrina</i>	Pig-tailed macaque	17	ATD50240
<i>Macaca nemestrina</i>	Pig-tailed macaque	17	ATD50241
<i>Macaca nemestrina</i>	Pig-tailed macaque	17	NP_001292850
<i>Macaca nemestrina</i>	Pig-tailed macaque	17	CAA51751
<i>Macaca nemestrina</i>	Pig-tailed macaque	17	XP_011743930
<i>Mandrillus leucophaeus</i>	Drill	17	XP_011838379
<i>Miopithecus talapoin</i>	Talapoin	17	AHY35174
<i>Papio anubis</i>	Olive baboon	17	XP_021777658
<i>Theropithecus gelada</i>	Gelada	17	XP_025257067
<i>Hylobates agilis</i>	Agile gibbon	none	AHY35172
<i>Symphalangus syndactylus</i>	Siamang	none	AHY35171
<i>Gorilla gorilla</i>	Western lowland gorilla	15	XP_004052630
<i>Gorilla gorilla</i>	Western lowland gorilla	15	AHY35169
<i>Pan paniscus</i>	Bonobo	32	XP_008971926
<i>Pan troglodytes</i>	Common chimpanzee	32	AKC01945
<i>Pan troglodytes</i>	Common chimpanzee	32, 66	ABX56447
<i>Pan troglodytes</i>	Common chimpanzee	32, 66	ABX56461
<i>Pan troglodytes</i>	Common chimpanzee	32, 66	ABX56470
<i>Pan troglodytes</i>	Common chimpanzee	32	ABX56471
<i>Pan troglodytes</i>	Common chimpanzee	32	ABX56472
<i>Pan troglodytes</i>	Common chimpanzee	32, 66	ABX56473
<i>Pan troglodytes</i>	Common chimpanzee	32	ABX56475
<i>Pan troglodytes</i>	Common chimpanzee	32, 66	ABX56476
<i>Pan troglodytes</i>	Common chimpanzee	32	ABX56477
<i>Pan troglodytes</i>	Common chimpanzee	32	ABX56478
<i>Pan troglodytes</i>	Common chimpanzee	32, 66	ABX56479
<i>Pan troglodytes</i>	Common chimpanzee	32, 66	ABX56480
<i>Pan troglodytes</i>	Common chimpanzee	32, 66	ABX56482
<i>Pan troglodytes</i>	Common chimpanzee	32	ABX56484
<i>Pan troglodytes</i>	Common chimpanzee	32, 66	ABX56485
<i>Pan troglodytes</i>	Common chimpanzee	32	NP_001009043
<i>Pan troglodytes</i>	Common chimpanzee	32	CAA51749
<i>Pan troglodytes</i>	Common chimpanzee	32	XP_016777999
<i>Pongo abelii</i>	Sumatran Orangutan	32	XP_024112270

® Amino acids are numbered according to the mature CD4 protein.

Table S6. Microsatellite analysis of chimpanzee fecal samples from the Lobéké/Mambélé area

No ^a	Sample ID [#]	D1 S1653 [†]	D7 S1804 [†]	D8 S2324 [†]	D14 S617 [†]	D15 S643 [†]	D4 S1652 [†]	D7 S1809 [†]	D9 S303 [†]	D13 S317 [†]	D11 S1984 [†]	D3 S4545 [†]	D17 S974 [†]	D16 S539 [†]	Hum Pla2a [†]
177	LB0023	127 131	208 224	180 196	142 162	204 216	125 129	235 239	149 189	188 192	175 183	206 214	208 208	154 162	85 103
178	LB0714	131 151	256 260	180 196	154 154	212 212	113 121	211 231	149 181	184 192	- -	210 246	208 216	158 158	100 103
179	LB0715	131 135	208 208	196 196	134 154	212 228	113 117	231 239	185 189	172 192	171 183	210 214	208 216	158 158	79 103
180	LB0720	131 139	224 224	192 208	138 162	212 220	121 129	211 227	165 189	184 184	171 187	238 250	208 212	150 158	73 97
181	LB0724	131 135	228 244	180 180	134 154	208 220	121 129	207 223	181 181	172 188	171 203	206 254	208 212	138 158	91 97
182	LB0726	135 143	256 260	180 180	154 158	204 224	- -	227 239	169 177	172 172	- -	210 210	208 212	134 154	76 97
183	LB0728	135 139	224 260	192 200	138 138	212 224	121 137	203 211	189 189	184 184	175 199	186 186	212 216	158 158	76 99
184	LB0730	131 139	224 244	180 196	134 154	212 220	121 133	203 207	165 169	188 188	167 179	222 266	208 212	134 134	94 97
185	LB0731	143 151	208 224	180 180	154 170	204 244	117 133	211 227	157 169	188 188	167 179	230 246	212 212	154 158	88 94
186	LB0734	135 151	228 260	192 192	138 154	200 212	125 149	203 215	165 181	180 184	171 179	186 242	208 216	158 158	88 94
187	MB0752	135 139	224 260	204 208	134 154	204 208	125 153	195 239	157 181	188 188	171 179	194 226	208 212	134 154	79 94
188	MB0754	163 163	224 256	180 192	138 138	208 212	129 137	195 231	173 181	184 200	179 191	210 214	204 208	138 138	97 100
189	MB0762	115 139	- -	180 180	138 162	208 208	125 125	201 205	169 197	184 192	171 175	258 262	204 204	154 154	94 100
190	MB0763	139 143	224 224	180 180	154 158	212 216	113 145	231 235	165 173	180 196	175 191	218 250	212 216	134 162	94 97
191	MB0765	139 139	220 224	180 180	134 154	- -	113 129	231 231	173 173	196 196	175 191	- -	- -	- -	- -
192	MB0767	- -	- -	- -	- -	- -	129 169	219 239	169 185	- -	171 179	234 238	204 208	150 158	97 100
193	MB0768	119 139	248 252	180 204	138 154	232 244	122 153	219 239	165 173	184 184	175 191	- -	- -	- -	- -
194	MB0773	111 119	224 224	196 204	134 154	220 220	- -	- -	- -	- -	- -	- -	208 212	158 158	100 100
195	MB0775	131 139	208 208	180 196	154 154	208 240	121 129	211 219	169 173	184 184	171 171	226 250	204 208	150 154	88 97
196	MB0776	139 139	224 260	180 180	134 154	220 224	129 129	223 231	173 173	- -	175 191	214 262	196 212	154 162	97 100
197	MB0777	127 151	256 260	180 208	142 158	212 232	109 129	191 231	153 157	180 180	167 179	- -	- -	- -	- -
198	MB0782	131 139	260 260	192 196	154 158	208 212	129 145	211 223	173 181	184 188	171 203	198 214	208 212	134 158	88 100
199	MB0791	131 151	208 208	180 196	154 154	208 240	129 157	211 219	169 173	184 184	167 167	- -	- -	- -	- -
200	MB0792	115 151	224 252	180 192	134 138	220 220	113 117	195 239	161 169	172 192	171 183	210 226	212 216	134 158	94 100
201	MB0801	115 119	- -	180 192	134 138	224 224	113 125	195 239	161 169	172 192	171 183	210 226	212 216	134 158	82 100
202	MB0803	139 151	260 260	180 196	158 158	212 232	117 125	211 239	165 181	192 196	179 191	210 218	212 212	146 146	88 100
203	MB0807	135 143	208 244	188 196	154 158	208 216	117 129	207 239	169 169	188 188	171 191	- -	212 216	154 158	- -
204	MB0812	131 135	208 260	180 192	134 154	208 220	129 149	207 235	169 181	188 192	179 191	- -	- -	- -	- -
205	MB2330	139 151	256 260	180 208	142 158	212 232	117 141	203 239	165 169	192 192	179 191	238 250	216 216	- -	79 88
206	MB2334	131 139	208 224	180 196	142 162	204 220	129 157	235 239	149 189	188 192	175 183	206 214	208 208	154 162	85 94
207	MB2339	- -	- -	184 188	- -	220 220	121 121	231 231	161 181	184 188	175 175	254 262	212 212	138 150	94 103
208	MB2340	139 143	260 260	196 208	158 158	212 212	121 121	211 239	173 181	192 196	179 191	210 218	212 212	146 146	91 97
209	MB5133	135 139	224 224	204 209	134 154	220 240	117 145	207 231	181 185	184 184	171 191	226 226	208 212	138 150	91 97
210	MB5136	135 139	- -	180 192	138 154	220 220	145 145	235 243	181 185	184 184	179 195	- -	208 212	154 162	103 103
211	MB5137	139 139	252 252	180 192	134 154	212 224	145 149	235 243	181 185	184 196	179 195	214 270	208 208	134 146	82 94
212	MB5139	139 139	204 224	192 204	154 154	212 220	117 149	207 243	181 185	184 196	191 195	226 226	208 212	138 146	94 97
213	MB5143	139 139	236 256	180 200	134 142	204 212	121 129	227 243	165 169	168 180	171 175	254 266	212 216	146 158	82 94
214	MB5144	- -	220 244	180 208	134 154	216 232	117 141	207 231	169 173	- -	175 175	194 194	196 216	138 154	97 103
215	MB5145	- -	244 252	- -	122 146	224 232	117 137	207 211	141 173	- -	175 175	194 194	208 216	138 154	91 100
216	MB5147	- -	256 260	188 192	158 158	208 228	117 145	223 235	165 181	180 180	171 199	198 226	208 212	134 154	97 103
217	MB5156	127 135	224 256	180 180	138 158	208 212	109 133	- -	173 207	172 184	171 191	210 230	208 208	146 158	100 100

218	MB5157	151 151	224 244	180 184	158 158	212 224	117 117	191 191	165 165	184 188	167 199	226 250	208 216	150 150	82 100
219	MB5159	139 143	224 252	188 192	142 154	224 224	117 153	203 235	197 181	168 168	175 187	262 266	208 212	134 138	97 103
220	MB5160	127 139	224 232	180 196	142 142	208 220	117 117	195 195	165 169	- -	179 183	226 262	216 216	158 158	97 103
221	MB5163	139 151	224 252	180 188	138 142	204 260	117 161	219 227	157 177	184 192	179 187	214 254	216 216	158 158	82 100
222	MB5170	135 139	244 248	180 196	154 158	220 224	125 153	227 231	161 165	192 192	167 191	186 186	208 212	150 154	103 103
223	MB6232	115 139	204 252	180 192	154 154	212 220	145 149	235 243	181 185	196 196	179 195	214 226	208 208	134 146	94 103
224	MB6238	139 151	240 260	180 180	134 142	216 220	125 145	195 227	165 169	180 180	167 179	222 258	208 212	154 158	97 103
225	MB6243	139 151	224 240	180 208	134 154	220 220	117 145	227 231	169 185	184 192	179 191	226 258	212 212	150 158	82 88
226	MB6414	139 151	208 208	180 196	155 155	208 244	125 125	211 219	169 173	- -	171 171	226 250	208 208	150 154	88 97

⁸Chimpanzee fecal samples (numbered as in Table S3) were subjected to microsatellite analyses to confirm that each represented a different individual. The microsatellite genotype of samples 227-246 from Lobéké/Mambélé has been reported previously (1).

⁹Samples are labeled to indicate their field site of origin (see Fig. S1 for location) followed by an individual (ID) number.

[†]Samples were genotyped at 14 autosomal microsatellite loci, with amplification products sized on an automatic sequencer by capillary electrophoresis (1). Loci were amplified by single round PCR using previously described primers and conditions (7, 42, 43). Each locus was amplified only once. Dashes indicate lack of amplification (see Table S3 for additional sample information).

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