HUMAN GENOMICS

The prehistoric peopling of Southeast Asia

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The human occupation history of Southeast Asia (SEA) remains heavily debated. Current evidence suggests that SEA was occupied by Hòabìnhian hunter-gatherers until ~4000 years ago, when farming economies developed and expanded, restricting foraging groups to remote habitats. Some argue that agricultural development was indigenous; others favor the "two-layer" hypothesis that posits a southward expansion of farmers giving rise to present-day Southeast Asian genetic diversity. By sequencing 26 ancient human genomes (25 from SEA, 1 Japanese Jōmon), we show that neither interpretation fits the complexity of Southeast Asian history: Both Hòabìnhian hunter-gatherers and East Asian farmers contributed to current Southeast Asian diversity, with further migrations affecting island SEA and Vietnam. Our results help resolve one of the long-standing controversies in Southeast Asian prehistory.

Anatomically modern humans expanded into Southeast Asia (SEA) at least 65 thousand years (ka) ago (*1*, *2*), leading to the formation of the Hòabìnhian hunter-gatherer tradition first recognized by ~44 ka ago (*3*, *4*). Though Hòabìnhian foragers are considered the ancestors of present-day hunter-gatherers from mainland Southeast Asia (MSEA) (*5*), the East Asian phenotypic affinities of the majority of present-day Southeast Asian populations suggest that diversity was influenced by later migrations involving rice and millet farmers from the north (*4*). These observations have generated two competing hypotheses: One states that the Hòabìnhian hunter-gatherers adopted agriculture without substantial external gene flow (*6*, *7*), and the other (the "two-layer" hypothesis) states that farmers from East Asia (EA) replaced the indigenous Hòabìnhian inhabitants ~4 ka ago (*8*, *9*). Studies of present-day populations have not resolved the extent to which migrations from EA affected the genetic makeup of SEA.

Obtaining ancient DNA evidence from SEA is challenging because of poor preservation conditions (*10*). We thus tested different whole-human-genome capture approaches and found that a modified version of MYbaits Enrichment performed best (*11*). We applied this method together with standard shotgun sequencing to DNA extracted from human skeletal material from Malaysia, Thailand, the Philippines, Vietnam, Indonesia, Laos, and Japan dating between 0.2 and 8 ka ago (*11*). We obtained 26 low-coverage ancient whole genomes, including those of a Japanese Ikawazu Jōmon individual and Hòabìnhian hunter-gatherers from Malaysia and Laos, as well as Late Neolithic, Bronze Age, and Iron Age farmers from across SEA (Fig. 1 and table S1) (*11*). We also sequenced mitochondrial DNA from 16 additional ancient individuals and high-coverage whole genomes from two present-day Jehai individuals from Northern Parak state, West Malaysia (table S3). All samples showed damage patterns typical of ancient DNA and minimal amounts of contamination (table S3) (*11*).

We performed a principal component analysis (PCA) of worldwide present-day populations (*12*, *13*) to find the strongest axes of genetic variation in our data and projected the ancient individuals onto the first two principal components. The two oldest samples—Hòabìnhians from Pha Faen, Laos [La368; 7950 with 7795 calendar years before the present (cal B.P.)] and Gua Cha, Malaysia (Ma911; 4415 to 4160 cal B.P.)—henceforth labeled "group 1," cluster most closely with present-day Önge from the Andaman Islands and away from other East Asian and Southeast Asian populations (Fig. 2), a pattern that differentiates them from all other ancient samples. We used ADMIXTURE (*14*) and fastNGSadmix (*15*) to model ancient genomes as mixtures of latent ancestry components (*11*). Group

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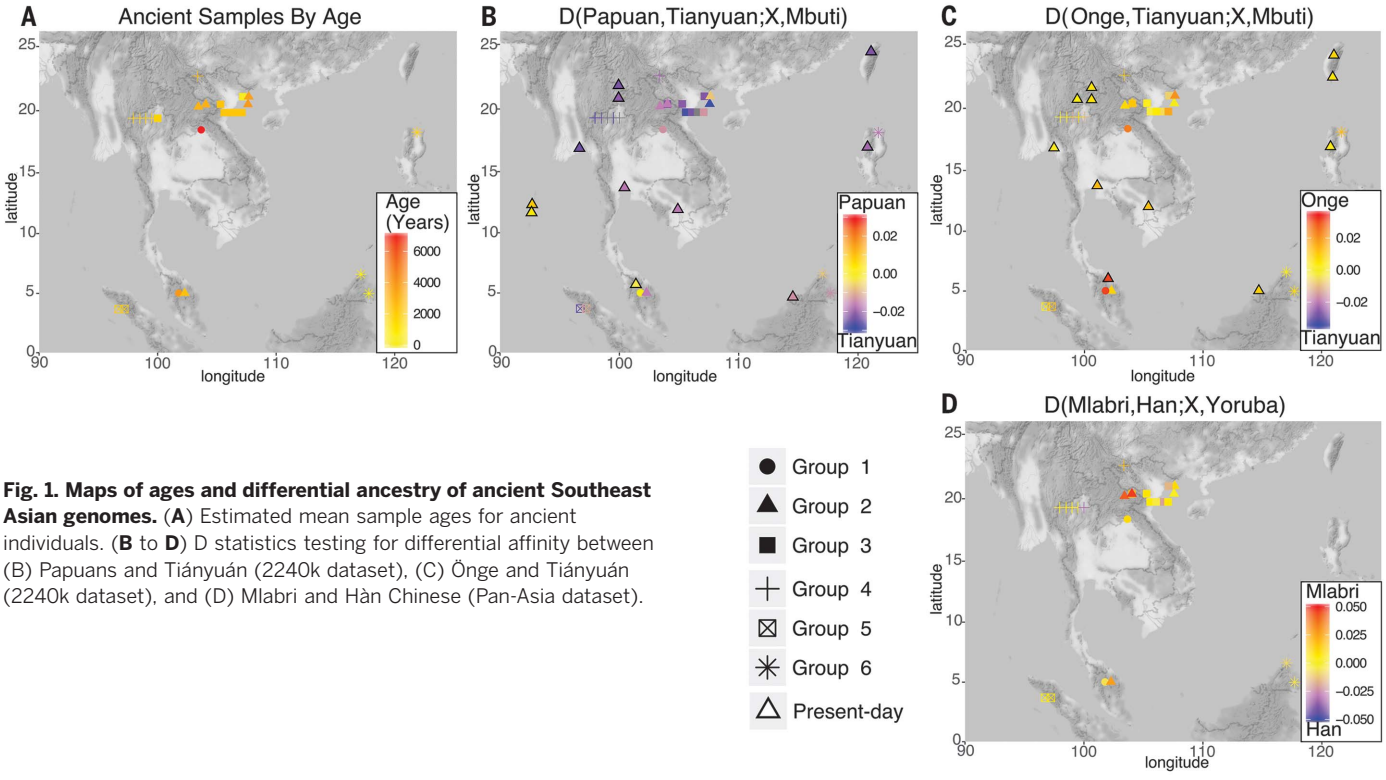

Fig. 1. Maps of ages and differential ancestry of ancient Southeast Asian genomes. (**A**) Estimated mean sample ages for ancient individuals. (**B** to **D**) D statistics testing for differential affinity between (B) Papuans and Tiányuán (2240k dataset), (C) Önge and Tiányuán (2240k dataset), and (D) Mlabri and Hàn Chinese (Pan-Asia dataset).

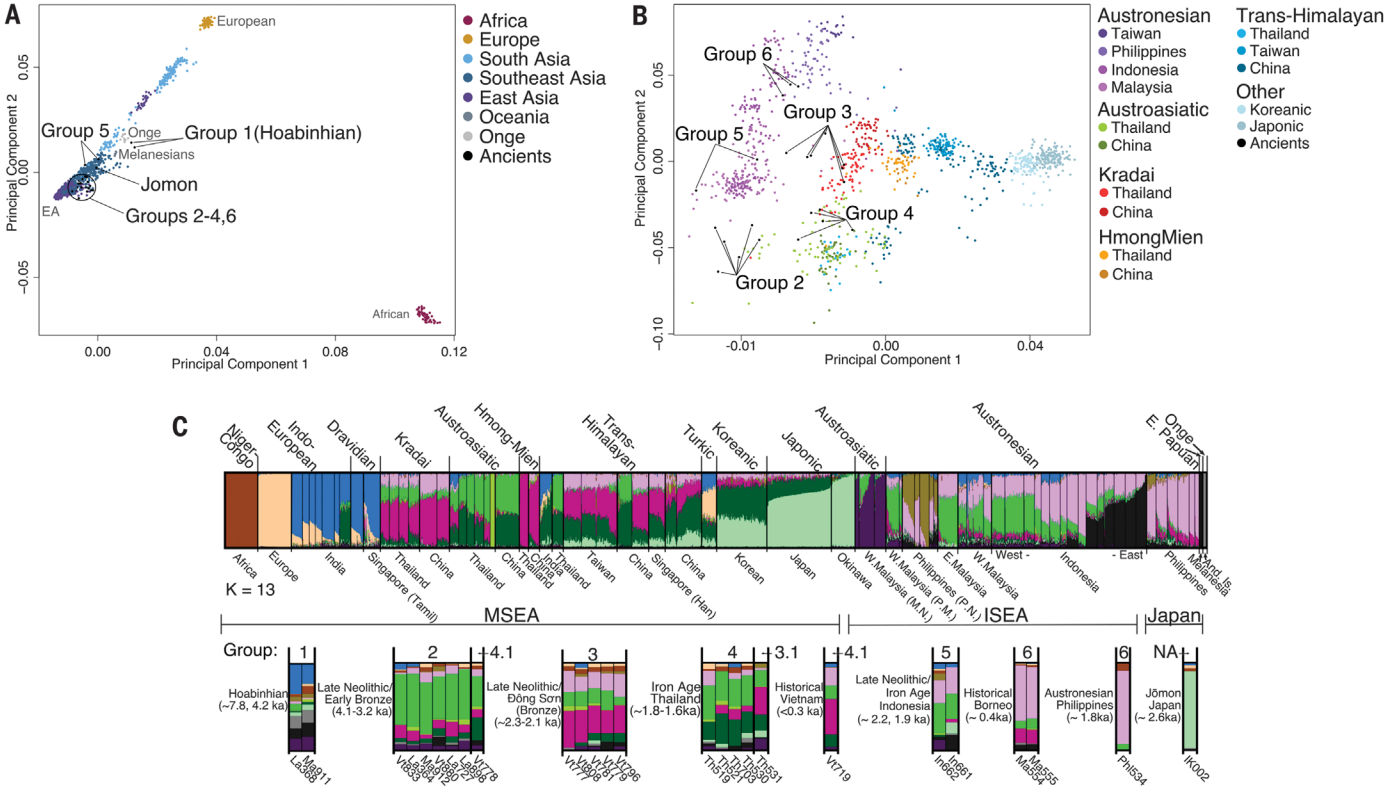

Fig. 2. Exploratory analyses of relationships of ancient Southeast Asian genomes to those of present-day populations. Ancient samples are projected on the first two components of PCAs for (**A**) worldwide populations and (**B**) a subset of populations from EA and SEA. (**C**) fastNGSadmix plot at $K = 13$ (*11*). We refer to the following present-day language-speaking groups in relation to our ancient samples: Austroasiatic (bright green), Austronesian (pink), and Hmong-Mien (dark pink), along with a broad East Asian component (dark green). P.M., proto-Malay; M.N., Malaysian negrito; P.N., Philippines negrito; And. Is., Andaman Islands; NA, not applicable.

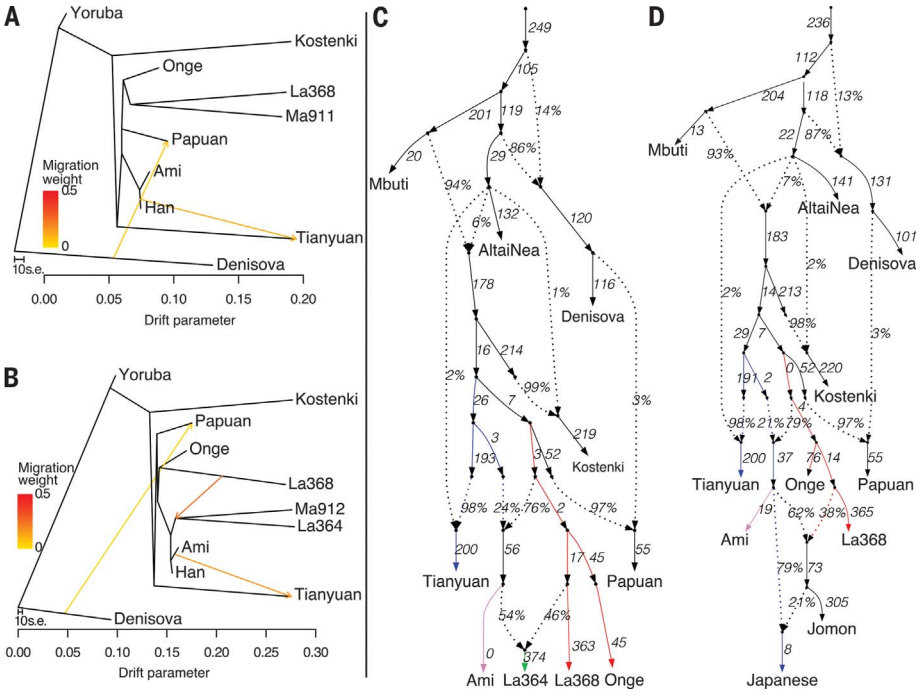

Fig. 3. Admixture graphs fitting ancient Southeast Asian genomes. TreeMix and qpGraph admixture graphs combining present-day populations and selected ancient samples with high single-nucleotide polymorphism coverage (*11*). (**A**) A graph including group 1 samples (Ma911 and La368) fits them as sister groups to present-day Önge. (**B**) A graph including the highest-coverage group 1 (La368) and group 2 (La364, Ma912) samples shows that group 2 receives ancestry from both group 1 and the East Asian branch. (**C**) Using qpGraph, we modeled present-day East Asians (represented by Amis) as a mixture of an Önge-like population and a population related to the Tiányuán individual. (**D**) The Jōmon individual is modeled as a mix of Hòabìnhian (La368) and East Asian ancestry.

1 individuals differ from the other Southeast Asian ancient samples in containing components shared with the supposed descendants of the Hòabìnhians: the Önge and the Jehai (Peninsular Malaysia), along with groups from India and Papua New Guinea.

We also find a distinctive relationship between the group 1 samples and the Ikawazu Jōmon of Japan (IK002). Outgroup f_3 statistics (*11*, *16*) show that group 1 shares the most genetic drift with all ancient mainland samples and Jōmon (fig. S12 and table S4). All other ancient genomes share more drift with present-day East Asian and Southeast Asian populations than with Jōmon (figs. S13 to S19 and tables S4 to S11). This is apparent in the fastNGSadmix analysis when assuming six ancestral components (K = 6) (fig. S11), where the Jōmon sample contains East Asian components and components found in group 1. To detect populations with genetic affinities to Jōmon, relative to present-day Japanese, we computed D statistics of the form D(Japanese, Jōmon; X, Mbuti), setting X to be different present-day and ancient Southeast Asian individuals (table S22). The strongest signal is seen when X = Ma911 and La368 (group 1 individuals), showing a marginally nonsignificant affinity to Jōmon (*11*). This signal is not observed with X = Papuans or Önge, suggesting that the Jōmon and Hòabìnhians may share group 1 ancestry (*11*).

D-statistics of the form D(Papuan, Tiányuán; Y, Mbuti), where Y is a test population, are consistent with present-day East Asian populations and most populations of ancient and present-day SEA being more closely related to Tiányuán [a 40-ka-old East Asian individual (*17*)] than to Papuans (Fig. 1) (*11*, *18*). However, this D statistic is not significantly different from 0 for Y = Jehai, Önge, Jarawa or group 1 (the ancient Hòabìnhians) (table S12). D statistics of the form D(Önge, Tiányuán; X, Mbuti), where X is Jarawa, Jehai, or group 1, show that these populations share more ancestry with Önge than with Tiányuán (Fig. 1) (*11*). Using TreeMix and qpGraph (*16*, *19*) to explore admixture graphs that could potentially fit our data, we find that group 1 individuals are best modeled as a sister group to present-day Önge (Fig. 3, and figs. S21 to S23 and S35 to S37). Finally, the Jōmon individual is best-modeled as a mix between a population related to group 1/Önge and a population related to East Asians (Amis), whereas present-day Japanese can be modeled as a mixture of Jōmon and an additional East Asian component (Fig. 3 and fig. S29).

The remaining ancient individuals are modeled in fastNGSadmix as containing East Asian and Southeast Asian components present in high proportions in present-day Austroasiatic, Austronesian, and Hmong-Mien speakers, along with a broad East Asian component. A PCA including only East Asian and Southeast Asian populations that did not show considerable Papuan or Önge-like ancestry (fig. S11) separates the present-day speakers of ancestral language families in the region: Trans-Himalayan (formerly Sino-Tibetan), Austroasiatic, and Austronesian/Kradai (*20*). The ancient individuals form five slightly differentiated clusters (groups 2 to 6) (Fig. 1B), in concordance with fastNGSadmix and f_3 results (Fig. 2 and figs. S12 to S19) (*11*).

Group 2 contains late Neolithic and early Bronze Age individuals (4291 to 2184 cal B.P.), from Vietnam, Laos, and the Malay Peninsula who are closely related to present-day Austroasiatic language speakers such as the Mlabri and Htin (Fig. 1) (*11*). Compared with groups 3 to 6, group 2 individuals lack a broad East Asian ancestry component that is at its highest proportion in northern EA in fastNGSadmix. TreeMix analyses suggest that the two individuals with the highest coverage in group 2 (La364 and Ma912) form a clade resulting from admixture between the ancestors of East Asians and of La368 (Fig. 3 and figs. S24 to S27). This pattern of complex, localized admixture is also evident in the Jehai, fitted as an admixed population between group 2 (Ma912) and the branch leading to present-day Önge and La368 (fig. S28). Consistent with these results, La364 is best modeled as a mixture of a population ancestral to Amis and the group 1/Önge-like population (Fig. 3). The best model for present-day Dai populations is a mixture of group 2 individuals and a pulse of admixture from East Asians (fig. S39).

Group 6 individuals (1880 to 299 cal B.P.) originate from Malaysia and the Philippines and cluster with present-day Austronesians (*11*) (Fig. 2). Group 6 also contains Ma554, having the highest amounts of Denisovan-like ancestry relative to the other ancient samples, although we observe little variation in this archaic ancestry in our samples from MSEA (*11*).

Group 5 (2304 to 1818 cal B.P.) contains two individuals from Indonesia, modeled by fastNGSadmix as a mix of Austronesian- and Austroasiatic-like ancestry, similar to present-day western Indonesians, a finding consistent with their position in the PCA (Fig. 2) (*11*). Indeed, after Mlabri and Htin, the present-day populations sharing the most drift with group 2 are western Indonesian samples from Bali and Java previously identified as having mainland Southeast Asian ancestry (*21*) (fig. S13). Treemix models the group 5 individuals as an admixed population receiving ancestry related to group 2 (figs. S30 and S31) and Amis. Despite the clear relationship with the mainland group 2 seen in all analyses, the small ancestry components in group 5 related to Jehai and Papuans visible in fastNGSadmix may be remnants of ancient Sundaland ancestry. These results suggest that group 2 and group 5 are related to a

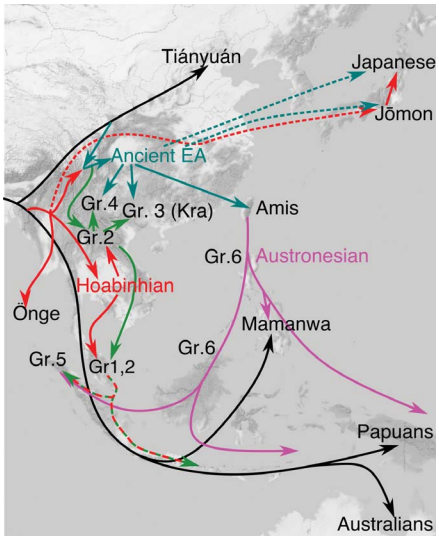

Fig. 4. Model for plausible migration routes into SEA. This schematic is based on ancestry patterns observed in the ancient genomes. Because we do not have ancient samples to accurately resolve how the ancestors of Jōmon and Japanese populations entered the Japanese archipelago, these migrations are represented by dashed arrows. A mainland component in Indonesia is depicted by the dashed red-green line. Gr, group; Kra, Kradai.

mainland migration that expanded southward across MSEA by 4 ka ago and into island Southeast Asia (ISEA) by 2 ka ago (*22*–*24*). A similar pattern is detected for Ma555 (fig. S33) in Borneo (505 to 326 cal B.P., group 6), although this may be a result of recent gene flow.

Group 3 is composed of several ancient individuals from northern Vietnam (2378 to 2041 cal B.P.) and one individual from Long Long Rak (LLR), Thailand (1691 to 1537 cal B.P.). They cluster in the PCA with the Dai, Amis, and Kradai speakers from Thailand, consistent with an Austro-Tai linguistic phylum, comprising both the Kradai and Austronesian language families (*20*, *25*). Group 4 contains the remaining ancient individuals from LLR in Thailand (1570 to 1815 cal B.P.), and Vt778 from inland Vietnam (2750 to 2500 cal B.P.). These samples cluster with present-day Austroasiatic speakers from Thailand and China, in support of a South China origin for LLR (*26*). The genetic distinction between Austroasiatic and Kradai speakers is discussed further in (*11*).

Present-day Southeast Asian populations derive ancestry from at least four ancient populations (Fig. 4). The oldest layer consists of mainland Hòabìnhians (group 1), who share ancestry with present-day Andamanese Önge, Malaysian Jehai, and the ancient Japanese Ikawazu Jōmon. Consistent with the two-layer hypothesis in MSEA, we observe a change in ancestry by ~4 ka ago, supporting a demographic expansion from EA into SEA during the Neolithic transition to farming. However, despite changes in genetic structure coinciding with this transition, evidence of admixture indicates that migrations from EA did not simply replace the previous occupants. Additionally, late Neolithic farmers share ancestry with present-day Austroasiatic-speaking hill tribes, in agreement with the hypotheses of an early Austroasiatic farmer expansion (*20*). By 2 ka ago, Southeast Asian individuals carried additional East Asian ancestry components absent in the late Neolithic samples, much like present-day populations. One component likely represents the introduction of ancestral Kradai languages in MSEA (*11*), and another the Austronesian expansion into ISEA reaching Indonesia by 2.1 ka ago and the Philippines by 1.8 ka ago. The evidence described here favors a complex model including a demographic transition in which the original Hòabìnhians admixed with multiple incoming waves of East Asian migration associated with the Austroasiatic, Kradai, and Austronesian language speakers.

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SUPPLEMENTARY MATERIALS

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Supplementary Text
Figs. S1 to S43
Tables S1 to S25
References (*27*–*111*)

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The prehistoric peopling of Southeast Asia

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Ancient migrations in Southeast Asia

The past movements and peopling of Southeast Asia have been poorly represented in ancient DNA studies (see the Perspective by Bellwood). Lipson *et al.* generated sequences from people inhabiting Southeast Asia from about 1700 to 4100 years ago. Screening of more than a hundred individuals from five sites yielded ancient DNA from 18 individuals. Comparisons with present-day populations suggest two waves of mixing between resident populations. The first mix was between local hunter-gatherers and incoming farmers associated with the Neolithic spreading from South China. A second event resulted in an additional pulse of genetic material from China to Southeast Asia associated with a Bronze Age migration. McColl *et al.* sequenced 26 ancient genomes from Southeast Asia and Japan spanning from the late Neolithic to the Iron Age. They found that present-day populations are the result of mixing among four ancient populations, including multiple waves of genetic material from more northern East Asian populations.

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Supplementary Materials for

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Supplementary Text

SOM1. Assessment of target enrichment methods

Given that ancient human samples from tropical regions (e.g. Southeast Asia, SEA) are generally quite poorly preserved, their endogenous DNA is expected to be highly degraded. In preparation for the present study, we benchmarked three commercially available genome capture systems developed for human genomes, using ancient DNA libraries from samples with low endogenous content. We aimed to obtain sequenced fragments from the whole extent of the genome, so as to provide published data that would not just be usable in comparisons with particular SNP arrays, but could also provide researchers with data that could be maximally useful in future studies, when more whole genomes become available from this region, as future data may include SNPs that have not been discovered before. For each kit, we initially compared enrichment at both high and low stringency reaction conditions, followed by a second evaluation on poorly preserved samples.

Experimental design and methods

A pool of sequencing libraries from a single sample (R23) was split in identical aliquots for target enrichment. We included the SeqCap EZ Human Exome Kit v3.0 cat no. 6740294001 (Roche Nimblegen, CA, USA), the SureSelect Human All Exon V5+UTRs cat. no. 5190-6213 (Agilent Technologies) and the Custom MYbaits Whole Genome Enrichment (WGE) Kit version 2.0 (MYcroarray, MI, USA). Each kit was used for the hybridization and recovery of captured libraries. DNA library solutions were evaporated in a vacuum centrifuge at 65°C and reconstituted in water, matching the specific protocol volume. DNA was denaturated at 95°C in reaction buffer(s) and reannealed in the presence of blocking oligonucleotides specific to adapter regions and/or low-complexity DNA specified in the kit protocols. Washing and recovery of captured libraries were performed using the reagents recommended by the manufacturer in each case. The Kapa U^+ PCR enzyme (KapaBiosystems) was used for PCR amplification post capture, according to the manufacturer's instructions. Below, we describe the specific modifications introduced to each of the protocols for reducing capture stringency and for allowing adaptation to one common protocol for library preparation.

a) Roche Nimblegen SeqCap EZ Human Exome Kit v3.0: For the low-stringency reactions conditions, the formamide concentration was decreased to 10% (*27*). Blocking oligonucleotides described in the protocol were replaced with 1 nmol of oligos matching dual-indexed Illumina adapters, including a universal index-binding hexamer inosine motif. Wash and recovery were performed using SeqCap EZ Hybridization and Wash Kit (Roche Nimblegen, # 05634261001).
b) The Agilent Technologies SureSelect Human All Exon V5+UTRs protocol was adapted for use on libraries with full-length adapters. Additional blockers as described above were added to the hybridization reaction (2x1 nmol). Low-stringency conditions in the initial experiments were achieved by lowering the hybridization temperature to 45°C instead of 65°C. For all hybridization reactions, the lid of the thermocycler was adjusted to +10°C higher than the hybridization reaction temperature.

c) MYcroarray MYbaits Whole Genome Enrichment kit ver. 2.0. For low- or high-stringency reactions conditions, the hybridization temperature was adjusted to 45°C or 65°C, respectively. The block #3 reagent of the kit was replaced with 1 nmol of each of the blockers as described above.

To permit direct comparison of results across the different capture conditions, we randomly sampled 1,000,000 sequencing reads passing trimming quality filters after running *AdapterRemoval2 (28)*. This was achieved using *seqtk* (https://github.com /lh3/seqtk) with default parameters. The sequence data were then aligned against the the human mitochondrial (rCRS) and nuclear genomes (hg19) with BWA 0.5.9-r26-dev (*29*) through PALEOMIX (*30*) and following the procedure described previously (*31*, *32*).

Length distributions and damage of DNA were assessed for each experimental condition using *mapDamage* v2.0 (*33*), disregarding bases showing quality scores (Phred) strictly inferior to 30.

Determining the capture condition stringency

Shotgun sequencing revealed that the endogenous content of the test sample (R23) was 0.39%. Following exome capture, high stringency conditions were found to result in higher fold-enrichment (9.0 - 14.8x) than low stringency conditions (1.2 - 3.2x). The reverse was true for the whole genome capture procedure (Table S1).

We next considered the length distribution and the misincorporation patterns of the captured mapping reads. For both exome enrichment kits, high stringency conditions resulted in an increased median fragment length, compared to low stringency conditions. For whole genome capture, the size distribution at high or low stringency resulted in less different median lengths (Figs. S1 and S2).

Using high stringency conditions, the threshold of the lower 25 percentile length of the shortest reads was increased by 9 - 19 bp for all three capture systems, indicating discrimination against the shortest reads. The misincorporation patterns recapitulated those of shotgun sequencing in all cases except that the proportion of damaged reads differed after Agilent exome capture, suggesting that this kit may be particularly sensitive to damaged DNA. Based on these results subsequent samples were captured using high stringency conditions for the exome kits, and low stringency conditions for the whole genome kit, with the aim of maximizing the enrichments of on-target reads.

Analyses of target-enrichment of a panel of poorly preserved human samples

After this initial experiment, we tested a total of eight samples from different geographic locations with ages ranging from medieval to over ten thousand years before present. For each sample, multiple libraries were prepared and pooled to enable direct comparison of the three kits tested. The number of extracts and libraries included in each pool is listed in Table S1.

In order to obtain baseline values for each sample, we estimated the endogenous DNA content of each library pool by shotgun sequencing, which represented a fraction of 0.01% to 5.92% of high-quality reads mapping uniquely against the human reference genome (Table 2). In all libraries, mapping reads showed fragment length distributions and DNA damage patterns characteristic of authentic aDNA (*34*). These patterns were, however, less pronounced in those samples with very low endogenous content, due to the limited number of read alignments available.

After exome enrichment, the proportion of unique on-target reads was commonly found to reach >50 % of the trimmed high quality reads (Table S2). When normalizing the sequencing effort to 1 million random reads, the proportion of the sites for which there was at least one read within the target region (DoC ≥ 1) was typically 1 - 6%. At this sequencing effort, this translates into a median enrichment of on-target reads of 14.8 or 18.9-fold, for the Agilent and Nimblegen kits, respectively (Table S3). Although the number of samples is limited and sample-specific variation is observed, there was a tendency for the Nimblegen exome kit to produce more on-target reads than the Agilent kit. The whole genome enrichment resulted in on-target rates ranging between 1.1 and 18.2%, which translates into a median enrichment factor of 7.54-fold (range: 3 - 228).

In Fig. S1, we show, for all libraries, the medium lengths and 25-75% quartile ranges of the mapping fragments. For all samples the mapping fragments in captured libraries were significantly longer than in shotgun libraries (Kolmogorov–Smirnov test, $p \leq 2.93*10\text{-}6$).

Complexity of ancient DNA libraries is reduced post capture

As captured ancient DNA libraries may sustain only relatively shallow sequencing, before PCR-generated duplicate reads became excessive, we investigated the clonality of the post capture libraries. Fig. S3A shows that the clonality for certain libraries approached 50%. However, these samples were predicted to have very limited complexity. The remaining samples showed between 0.2% and 19.9% clonality.

When increasing the sequencing volume, there seemed to be a general trend for the clonality to be negatively correlated with the predicted endogenous input. However, the variation among samples and kits is too great to establish a statistically significant relationship. In our experiments, the level of clonality seemed to be less pronounced after whole genome capture (MYcroarray) as compared to the exome capture. Nevertheless, more samples are needed to substantiate this claim.

We also investigated the library complexity using PRESEQ version 2.0 (*35*). Using 5 million random trimmed reads, robust statistical predictions were possible for 80% of the libraries. More specifically, we predicted the total number of bases uniquely covered following a sequencing effort of up to $>1*10^{10}$ bases per library. Libraries captured using the MYcroarray WG kit generally showed only slightly lower complexity that that of shotgun-sequenced libraries. In contrast, exome capture commonly resulted in reduced complexity by several orders of magnitude (Fig. S4). In the three cases that allowed for direct comparison, predicted complexity after exome capture was superior using the Agilent kit (samples R23, K, S60). Exhaustion was predicted in most exome-captured libraries by $2.5\text{-}10*10^{8}$ bases (corresponding to $\sim 4.2\text{-}16.6 *10^{6}$ reads of average length). Overall, the predictions from PRESEQ reflect the results from the other assessment of library clonality.

Overlapping SNPs

To provide a measure of the applicability of target enrichment in population genetic analyses, we compared the number of SNPs in the captured and the non-captured data overlapping with the >644K SNPs in the Human Genome Diversity Panel (HGDP) (*36*). The HGDP and the target regions of the Agilent or Nimblegen exome kits shared a total of 21,487 and 24,910 sites, respectively. In Fig. S5, we show the number of HGDP-overlapping SNPs for increasing sequencing effort, following shotgun sequencing or capture. We found that generally ~10 million post-capture reads were sufficient for obtaining >1,000 overlapping SNPs, which are

sufficient for determining broad-scale continental ancestry of a sample (Fig. S5 A, B or C). In contrast, shotgun sequencing could only achieve similar overlap from ~30-50 million reads. For one sample, even >34 million shotgun reads were insufficient to reach 100 SNPs (Fig. S5D).

Upon capture, more HGDP SNPs were covered within the target region, as compared to an equal number of randomly chosen non-target HGDP SNPs. In contrast, shotgun sequencing resulted in balanced coverage of SNPs within or outside the target regions. This difference was statistically significant except in four cases with too few comparable SNPs (Fisher's exact test, Fig. S6).

Conclusion of target enrichment experiments

In cases where shotgun sequencing is prohibited by very low endogenous content and/or availability of sample material, target enrichment may provide a powerful mean for obtaining sequencing information required for population-level genetic analyses. The data show that at 1 million reads the median fold enrichment was 14.8 - 18.9-fold for the exome kits and 7.53 for whole genome enrichment.

The difference in fragment length distributions between pre- and post-capture show that the enriched library represents a sub-sample of the shotgun sequencing library. Other studies have also documented that capture, while enriching, also increases average fragment lengths by up to 20 bp (*37–39*). Given these findings, we can expect that subsampling by capture of low-complexity libraries to be challenging.

Nevertheless, we generally found higher complexity upon whole genome capture compared to exome-captured libraries. Predicted complexity in whole genome-captured libraries was comparable to that of shotgun sequencing libraries. As the exome constitutes only a minor proportion of the whole genome, complexity was substantially lower in libraries enriched for the exome. We found a trend of lower clonality in libraries with higher predicted input. Although enrichment may be critically sample-dependant, for future aDNA studies we suggest to increase complexity of the capture reactions by maximizing the number of combined libraries and limit PCR amplification, which may introduce DNA polymerase-specific biases (*40*).

Sequencing >6.5 million reads of captured libraries (using exome or whole-genome) was sufficient to yield >1,000 SNPs overlapping with the HGDP panel. Whole genome capture resulted in ≤13,359 HGDP SNP. These results suggest that discrimination of samples with low endogenous content is possible after limited sequencing of captured libraries.

These experiments provide the basis for conducting future capture experiments using MYcroarray whole genome probes (at low stringency) on samples whose endogenous DNA content is too low for shotgun sequencing.

SOM2. Archaeological Overview

We obtained ancient genomic data from 41 ancient samples recovered from Vietnam, Laos, Thailand, Malaysia, Indonesia and the Philippines (Table S3, Fig. S7). Samples were dated at the Oxford Radiocarbon Accelerator Unit (ORAU). All the data obtained is reported in Table S3. Five of the samples produced low carbon yields and/or high C/N ratios. Dates for these samples are provided with a cautionary note on the absolute accuracy of the measurement. These dates are differentiated from the others by an OxA-X Number (Table S3) with the exception of sample 017727 (OxA-X-2690-33) which was obtained on hydroxyproline (see below). The 4 samples that failed producing enough collagen for dating are indicated by NA in the 14C column.

Samples from the two coffins yielding only mtDNA (Griffith University) were not directly dated. Wooden coffins, resin and textile from three excavation chambers were dated within the range of 1636 ± 44 BP and 1960 ± 30 BP (uncalibrated). Resin from Coffin 2 (Chamber A1) was dated to 1870 ± 30 BP (uncalibrated). Dating of these samples was undertaken independently by Beta Analytic testing laboratory, USA and the ORAU.

Under the two layer hypothesis, the migratory wave of Neolithic farmers may have originated in present-day China, where foxtail millet and one of the three main landraces of Asian rice were likely domesticated in the Yellow River and Yangtze valleys respectively (*4*, *41–43*). Farming practices may then have disseminated by populations spreading through two possible main routes: an inland wave associated with the expansion of the Austroasiatic, Hmong-Mien and Kradai language families, and an island-hopping wave associated with Austronesian languages which eventually reached remote Oceania in the Pacific (*20*, *24*, *44–51*).

Based on archaeological and anthropological studies, the individuals samples fall into two broad groups: hunter-gatherers and Neolithic farmers. The oldest individual comes from Pha Faen (Laos) 6-10,000 years ago (*52*). The genome belongs to a tall individual (ca. 176 cm) who was identified as male based on an osteological assessment, an assessment we confirm here (Table S3). The individual was found interred in a flexed position (a common Hòabìnhian burial position), dated to 7950-7794 Cal BP and was not interred with any associated mortuary offerings (*52*). Gua Cha (Malaysia) and Ma Da Dieu (Vietnam) had two phases, the first was Hòabìnhian hunter-gatherers followed by the arrival of Neolithic farmers. Two individuals from Gua Cha were from the former context, while a third is from the latter (*53*). We recovered ancient DNA from a complete skeleton, interred fully extended as is typical of other Neolithic occupants of this site. Ancient DNA was also extracted from the petrous bones of two individuals from the Hòabìnhian occupation that were not associated with any complete skeleton. The two Ma Dai Dieu samples (4291-4006 and 2349-2180 Cal BP), though ca. 2 kya apart, correspond to the end of the period of occupation of the site.

The Tam Hang samples do not appear to be from hunter-gatherers (*1*, *54*, *55*), but are instead similar to local Neolithic/Bronze age populations (Đông Sơn). Stone tools were found across all layers, typically Hòabìnhian with Sumatraliths (*56*, *57*). The teeth that yielded ancient DNA were from two of the six individuals who were interred in a flexed position in a shell midden at the site (*58*). Cord marked pottery was also found (*58*). The ^{14}C dates from charcoal indicate an occupation from 13 to 3 kya but direct ^{14}C dating of the human teeth that yielded ancient DNA proved problematic. One sample appeared highly contaminated and provided a date of 6,980 ± 40 BP. A second date, obtained after isolating the amino acid hydroxyproline, gave an age of 2,320 ± 30 (2378-2184 Cal BP at 1 sigma) which is deemed more accurate. The extraction of a single amino acid, hydroxyproline, from bone/tooth collagen using preparative High Performance Liquid Chromatography prior to AMS dating ensures sample purity through the complete removal of exogenous carbon, producing more accurate and robust results than alternative methods, particularly in the case of dating heavily contaminated bones (*59*, *60*). Two subsequent attempts at dating a second and third tooth from the other individual with ancient DNA failed due to high C/N ratio and could not be redated with the hydroxyproline method because of the amount of material available. The relatively recent dating and Đông Sơn affinities suggest that the dated individual was not Hòabìnhian, and instead belonged to a more recent intrusive burial.

At Tam Pa Ping, Northern Laos, nearby Tam Hang site, a tall male (2,865 ± 29 BP) - morphologically similar to individuals from local Neolithic/Bronze Age populations - was found

in an extended burial with a bronze axe between the ribs. The Bronze Age burial included cord mark pottery.

The coastal fishing and farming site of Hon Hai Co Tien belongs to the Ha Long Culture and was dated to 3480-3340 Cal BP (*61*). Out of the five samples yielding aDNA from this site, one sample (4381-3926 Cal BP) fits with the expected age, three failed dating (low %N, high C/N ratio - 4.8), and one (307-0 Cal BP) was indicative of a recent intrusive burial. Although Vt880 failed direct dating, it has very short DNA fragment lengths and high levels of C-to-T deamination when compared to the intrusively buried Vt719. Furthermore, Vt880 has close genetic affinities to the nearby Group 2 Mai Da Dieu individual (Vt833) dated to be 4291-4006 Cal BP, whereas Vt719 appears similar to the present-day Vietnamese Kinh. This suggest Vt880 was not intrusively buried and is closer in age to Vt833 (~4 kya). The site contains mostly corded fine pottery (bracelets, necklaces and stone tools, like hand axes and hoes). Lead pieces used for fishing nets indicate a more recent period of occupation, reflected by the second ^{14}C date.

Nam Tun, Vietnam (2750-2500 Cal BP) contained only surface pottery(*62*, *63*), similarly to Mai Da Dieu. At the early metal age site Nui Nap, Vietnam (2336-2157 Cal BP, 2340-2158 Cal BP, 2303-2041 Cal BP, 2343-2158 Cal BP) cord marked pottery was found.

Long Long Rak cave is a cemetery site located in highland Pang Mapha, northwest Thailand. It contained Iron Age wooden coffin burials with individuals dated between 1572-1815 CalBP, along with corded pottery, iron implements, wooden pot covered with lacquer, weaving loom, basket, fabric and ornaments made of plants and glass beads (*64*),(*65*). Isotope analysis suggests Long Long Rak was a farming population (*26*).

Within Island Southeast Asia (ISEA), the Nagsabaran Site (situated in Cagayan Valley of Luzon) is one of the oldest sites in the Philippines, extending as early as 4,200 years BP in its deepest pottery-bearing layer. The site's deposits have yielded red-slipped pottery, Taiwan jade ornaments, and rice remains dating to the beginning of the Austronesian expansion into this region. One extended-position burial was discovered in the Neolithic layer prior to 2,500 years BP, while others from the overlaying Iron Age contexts (2500–1500 Cal BP) were in extended positions, flexed formats, and secondary jar burials (*66*, *67*). Many of those Iron Age burials included mandibles but not skulls, and sometimes the skulls were re-deposited inside the jar burials. A similar practice of keeping skulls in pottery has been noted in one instance at the Lapita-age cemetery of Teouma in Vanuatu, dated about 2,900 years BP (*68*). One of the Nagsabaran bone samples (1880-1730 Cal BP) represented an Iron Age farming group in the Philippines. Jar burials, in addition to interments in a wide variety of burial positions (flexed, supine, prone, some with skulls removed) have also been found at the 3000-2000 Cal BP burial ground of Pain Haka, on eastern Flores, Indonesia (*69*).

Although flexed-position burial had characterized the older hunter-gatherer sites of SEA, a later tradition of extended-position burial seems to have been introduced with the appearance of rice-farming societies. Curiously, the flexed-position burial tradition regained its popularity in several ISEA sites. For example, there are two flexed burials at the cave of Loyang Ujung Karang dated at 2304-2048 Cal BP and 1925-1818 Ca1BP, contemporaneous with the upper-layer findings at a nearby cave site of Loyang Mendale (*70*), collectively representing the late Neolithic to early Iron Age population of Sumatra. Shell middens and fine pottery characteristic of the Austronesian expansion were also found at the site of Loyang Ujung Karang.

A recent wooden coffin burials from Kinabatangan (452-299 Cal BP) and Supu Hujung 4 (505-326 Cal BP) on Borneo also yielded fine pottery (*71*).

SOM3. Sequencing, Mapping, Genotype Calling and Contamination Estimation

We screened ancient samples from across SEA for DNA preservation. We prioritized petrous bone, because of its favorable DNA preservation (*72*). Most of the samples were processed at the Centre for GeoGenetics, Natural History Museum, University of Copenhagen. Exceptions were the Jōmon (IK002) that was also processed in part at at Kitasato University, Kanazawa University and National Institute of Genetics, Japan and 8 samples from Long Long Rak, Thailand (Th387, Th391, Th392, Th389, Th126, Th127, Th238, Th248) that were processed at Griffith University, Australia. All were processed in dedicated clean laboratories following strict aDNA guidelines (*72*–*74*). Material was sampled as described in (*72*).

To minimize risk of contamination from handling and increase the endogenous DNA content, we performed a pre-digestion step (*75*). DNA extraction was done as in (*76*) followed by dual-indexed libraries building and amplification (*77*). Adapter-dimers were removed where necessary, using Agencourt AMPure beads (Beckman Coulter, CA, USA).

Sequencing was performed on Illumina HiSeq2500 (ver. 4) or HiSeq4000 instruments (81bp single-read) using bcl2fastq de-multiplexing by The Danish National High-Throughput DNA Sequencing Centre in Copenhagen. For the mtDNA sequences from Griffith University, samples were 100 base pair single end sequenced on the HiSeq 2500 Sequencing System (Illumina) by The Danish National High-Throughput DNA Sequencing Centre in Copenhagen or on the MiSeq Sequencing System (Illumina) using 150 v3 kits at the Griffith University DNA Sequencing Facility. Sequences were base-called using CASAVA 1.8.2 (Illumina). The present-day Jehai genomes were sequenced on the Illumina HiSeq1500 at BGI.

Reads were trimmed using AdapterRemoval 2.2.2, in order to remove adapters, terminal N's (--trimns), low quality bases (-trim qualities, --minquality 2) and short reads (--minlength 30). Mapping to the human reference genome (hg19, build 37) using BWA (*31*, *78*) , library merging using *picard* (http://broadinstitute.github.io/picard/), local realignment using GATK (*78*, *79*) and MD tags calling using *samtools* calmd v1.5-2 (*29*) were done as described in (*80*).

To minimize batch effects, we obtained genotypes for all individuals from a combination of published BAM files from previous studies and BAM files produced in this study. We genotyped genomes that had low coverage or were obtained from targeted capture by selecting the majority allele for the genomic position, looking only at reads with mapping quality ≥ 30 and base quality ≥ 30. If both alleles were present at a site with equal coverage, a random allele was selected. High-coverage genomes were genotyped as in *(81)*. All analyses were restricted to regions that were within the 1000 Genomes Phase 3 (*82*) strict accessibility mask (ftp://ftp.1000genomes.ebi.ac.uk/vol1/ftp/release/20130502/supporting/accessible_genome_masks/20141020.strict_mask.whole_genome.bed), and outside repeat regions (UCSC genome browser simpleRepeat table).

We assembled two panels for different types of analyses. Initial analyses were undertaken using the HUGO Pan-Asian SNP Database (*13*) (1,744 individuals; 50,796 SNPs) and Önge from the Simons Genome Diversity Panel (SGDP) (*18*), resulting in a panel maximising populations, at the expense of a lower SNP number, with 50,136 overlapping SNPs (hereafter the "Pan-Asia panel"). We assembled a second panel using whole genomes from the SGDP, limiting to the 2,240k capture SNPs from (*17*). We used the first panel for ADMIXTURE / *fastNGSadmix* analyses and PCA, as well as f3 statistics. We used the second panel for more parameter-rich modelling.

Using *mapDamage* v2 *(33)*, we verified that all ancient samples displayed signatures of cytosine deamination and short fragment lengths, both typical of ancient DNA. For all samples in that yielded sufficient nuclear DNA for analyses, contamination estimates obtained using *contamMix (83)* were minimal (MAP probability of contamination = 0.01-0.06%, depending on the sample) (Table S3). We used the angsd v0.919-14-g30c7387 'contamination.R' script (*84*) to estimate contamination for individuals with a single X chromosome and found similarly low rates of contamination: 0.00-0.055%. In contrast, some of the very low coverage samples that were not sequenced to genome-wide depth had elevated contamination rates, so we did not use these in nuclear genome analyses (Table S3). When practical, extracts were USER-treated (*85*) for deep sequencing after damage patterns had been identified in the initial screening results.

SOM4. Principal Component Analysis

We performed a principal component analysis using *smartpca* v1600 implemented in the *Eigensoft* package (*86*) on the SNP covariance matrix of genomes from the Pan-Asia panel, along with the Jōmon sample. We then projected all our ancient SEA samples onto the first two principal components (*87*) (Fig. 1A). To identify position of the ancient SEA samples within PC2 from the lower panel of Figure 1C, we first removed Yoruba (Fig. S8). PC2 now separates the Melanesians from the East Asians, although we note that La368, Ma911, Önge and Jōmon do not fall within this cline.

We defined the groupings in Table S3 based on the position of the ancient samples in the PCA plots of Figures 1A and 1B, and on their latent ancestry components fitted using *fastNGSadmix*. Samples Vt719, Th531 and Vt778 were either geographic or temporal outliers to their assigned groups and were therefore analyzed separately in groups denoted by a ".1": Group 3.1 (Th531, Vt719) and Group 4.1 (Vt778).

Although Th530 and Th531 were found in the same chamber at LLR and share the same mtDNA haplogroup (G2b1a), Th531 clusters with Group 3, while Th530 clusters with Group 4 in autosomal PCA space. This suggests that individuals with ancestry from distant regions cohabited at this locality.

The 2240k panel has limited SEA populations, so, to assess which clusters from Figure 1B had a representative population in the higher resolution panel, we calculated a PCA with the same populations as in Figure 1B, but including the whole genomes from the Simons Genome Diversity Panel (*18*) (Fig. S9). Here, there are no SGDP samples overlapping with the clusters containing Group 2 and 4. We also recreated Figure 1B with population labels (Fig. S10), so as to provide increased resolution as to the placement of particular samples.

SOM5. ADMIXTURE fitting

We ran ADMIXTURE v1.3.0 (*14*) from K = 1 to K = 13 on the Pan-Asia Panel and the SGDP panel, after LD-pruning in PLINK (*88*), yielding 35,042 SNPs for analysis. To get standard errors for parameter estimates, we obtained 200 bootstrap replicates in each run. We then modeled low-coverage ancient populations based on the reference components inferred by ADMIXTURE, using *fastNGSadmix* (*15*, *89*). To visualise the admixture plots we used *pong* (*90*). Throughout this study, we generally refer to the colors corresponding to the ancestry components assuming K=13 (the K value with the lowest cross validation error) unless otherwise stated.

Below, we describe some qualitative observations we made when performing inference using ADMIXTURE and *fastNGSadmix*, and which allowed us to better tailor our other models (Fig. S11).

At K=2, we observe a blue component that is maximised in Yoruba, and a light pink component that is present in most EA and SEA populations, while Europe and South Asian (SA) populations are modeled as a mix of these two components. Certain SEA populations, like the Malay, Papuans, Önge, Jarawa and Melanesians are also a mix. The Tiányuán, Jōmon and the Group 1 individuals show an unusually large blue component for the region.

At K=4, a dark purple component is maximised in the Jehai and Melanesians. This component is also present at >50% frequency in many ISEA populations (including Group 5). On the mainland, this component reaches ~50% frequency in the Mlabri, Htin and the Group 2 samples.

At K=5 the component that is dark purple in Melanesians and western Indonesian at K=4 now becomes black, and is also seen in Group 6. The Önge and Group 1 samples now share a blue+black+purple profile.

At K=6, a dark green East Asian component is maximised in the Ryūkyūan and Japanese, while a pink East Asian component is now maximised in the Amis. While the dark green component is present in almost all EA, SEA and some SA populations, it is absent in the Mlabri, the Jehai, and most ISEA individuals. When looking at the ancient samples, we also observe that it is absent in In662 (Group 5) and all Group 2 samples.

At K=7, the light green component is maximised in the Mlabri, followed by other Austroasiatic SEA populations and Group 2. This component is present in all SEA populations, and is at highest frequency in the populations lacking the dark green component at K=6. While in agreement with hypotheses of an early Austroasiatic farmer expansion into the region(*20*, *45*), we lack the temporal and geographical resolution required to infer a homeland for this group. The presence of a mainland "Austroasiatic" substrate in insular Southeast Asia has been accrued by linguists and anthropologists since the early 20th century (*44*,*46*,*47*,*50*) and more recently genetic studies (*21*). The fastNGSadmix results are compatible with this hypothesis, along with treemix results showing a close relationship between Groups 2 and 5. (Figs. S30,31). However, presence extent and nature of an Austroasiatic occupation in western Indonesia independent of the Austronesian expansion (*22*, *24*) is yet to be resolved, and the signal we see here could also be explained by an earlier Sundaland substrate. The shared ancestry between the MSEA and ISEA may not be due to a recent Austroasiatic migration to ISEA, but instead a much older Sundaland population related to Group 1, who admixed with the incoming Austronesians, much like the admixture we detect from Group 1 into Group 2 on the mainland.

At K=13, the dark pink component is maximized in the Hmong-Mien, and allows SEA populations to be separated into two groups, represented in the ancient samples by Groups 3 and 4. Within Thailand, there is a clear genetic distinction between present-day Austroasiatic and Kradai speakers, the latter of which have an affinity to Hmong (indigenous to the area south of the Yangtze (*91)*) that is absent in the former. However, this distinction is not clear-cut within Vietnam: the ancient Group 3 Vietnamese and present-day Austroasiatic-speaking Kinh both have genetic affinities to Kradai speakers in Thailand. This suggests that the patchy distribution of Austroasiatic hill tribes in Thailand is a result of isolation, while in Vietnam there was much more contact between Austroasiatic and Kradai speakers.

The appearance of the Group 1 individuals and Tianyuan may result from our modelling of ancient populations as a mixture of components inferred in present-day populations, via *fastNGSadmix* (*92*), as these ancient genomes do not appear to be represented by any single present-day group.

SOM6. f3 Statistics

We computed *f* statistics to measure the amount of shared drift between two populations (Tables S4-S11) (*16*). We estimated standard errors through a weighted block jackknife procedure over 5Mb-blocks. To identify which present and ancient samples have the most shared drift with the ancient groups, we calculated f3-statistics of the form f3(Yoruba; Y, X), for all populations (X) and all ancient groups (Y). We grouped ancient samples according to their position in the PCA and their inferred ADMIXTURE ancestry components: Group 1 - Ma911, La368; Group 2 - La364, La727, La898, Ma912, Vt833, Vt880; Group 3 - Vt777, Vt779, Vt781, Vt796, Vt808; Group 4 - Th519, Th521, Th530, Th703; Group 5 - In661, In662; Group 6 - Ma554, Ma555, Phl534. Group 3.1 (Th531, Vt719) and Group 4.1 (Vt778) appeared similar in the PCA and ADMIXTURE to other members of their assigned groups, but were either geographically or temporally distant from the other samples within the group.

Group 1 individuals, the ancient Hòabìnhians, share the most drift with present-day Önge, along with Jōmon (Fig. S12, Table S4). Although damage in the ancient samples may amplify this effect, we note that the Jōmon do not share significant drift with any of the other ancient groups. W observe that the closest present-day populations to Group 1 are from the Andaman Islands (Önge), then Kensiu (a Malaysian 'negrito' language community), Amis and Jehai, followed by a mix of East and Southeast Asian populations.

Group 2 individuals share the most drift with the Austroasiatic groups Mlabri and Htin (Fig. S13, Table S5). Out of the closest seven populations, four are Austroasiatic speakers, and the remaining three are Austronesian speakers. These three Austronesian populations are all from Java, and carry the largest mainland component of the ISEA present-day population. No ancient sample has similar amounts of shared drift.

Groups 3 and 4 show the most shared drift with each other. The closest present-day population for both is Amis, but there are notable differences among ancient groups (Figs. S14, S15, Tables S6, S7). Group 3 has affinities to Kradai speakers, the Hmong-Mien and Hàn, whereas Group 4 has affinities to Austroasiatic groups instead. When looking only at groups 3.1 and 4.1 (Figs. S16, S17, Tables S8, S9), we observe that the Hmongic Miáo and the Austroasiatic Mlabri are the closest present-day populations to each of them, respectively.

The present-day populations that share the most drift with Group 5 are the Austroasiatic Htin and the Austronesian Amis, followed by present-day Indonesian populations (Fig. S18, Table S10). Similarly, the highest two f3-statistics for ancient samples are Group 6 (Austronesian affinities), and Group 2 (Austroasiatic affinities). Group 6 clearly shares the most drift with Austronesian Taiwanese and Filipino populations (Fig. S19, Table S11).

We can therefore ascertain that there is a strong association between:

a) Group 1 and the Jōmon and Jehai
b) Group 2 and the Mlabri and Austroasiatic Populations
c) Group 6 and the Austronesian populations.

Despite a close relation between Groups 3 and 4, differential affinities to the Hmong-Mien and Austroasiatic populations are apparent in these two groups.

SOM7. D-statistics

We calculated D-statistics (*93,94*) using *AdmixTools* (*16*), to test gene-flow and treeness hypotheses (*16*). As before, we estimated standard errors through a weighted block jackknife procedure over 5Mb-block, and also restricted the analysis to transversion polymorphisms in order to minimize potential bias introduced by differential error rates in ancient samples (mostly a consequence of *post-mortem* aDNA damage and low depth). For all tests, we removed transitions to minimise outgroup attraction resulting from damage present in aDNA.

Here, we list all D-statistic tables, and denote X as the candidate or test population over which we cycle in each table, and then describe particular observations which are important to the points discussed in the main text.

Table S12: D(Papuan,Tiányuán;X,Mbuti)
Table S13: D(X,Tiányuán;Papuan,Mbuti)
Table S14: D(Papuan,X;Tiányuán,Papuan)
Table S15: D(Önge,Tiányuán;X,Mbuti)
Table S16: D(X,Tiányuán;Önge,Mbuti)
Table S17: D(Onge,X;Tiányuán,Onge)
Table S18: D(Tiányuán,Jōmon;Archaic/Great Ape,Mbuti)
Table S19: D(Tiányuán,Jōmon;X,Mbuti)
Table S20: D(Tiányuán,X;Jōmon,Mbuti)
Table S21: D(Jōmon,X;Tiányuán,Mbuti)
Table S22: D(Japanese,Jōmon;X,Mbuti)
Table S23: D(Japanese,X;Jōmon,Mbuti).
Table S24: D(X,Jōmon;Japanese,Mbuti)
Table S25: D(Mixe,Surui;X,Mbuti)

aDNA damage in Tiányuán

To explore the damage signal we detected in *qpGraph* (SOM9), we calculated D statistics of the form D(Tiányuán, Jōmon,Mbuti,X) and found significant D-statistics when setting X to be archaic humans (Denisova Z =3.1, Neanderthal Z =3.8) and great apes (Macaque Z = 5.1, Chimpanzee Z =5.8 and Orangutang Z = 5.8), suggesting significant outgroup attraction as a result of damage, even in the absence of transitions (Table S18).

Relationship between Papuan, Tiányuán and EA/SEA/Ancients

We find support for Australians and Bougainville islanders forming a clade with Papuans, to the exclusion of Tiányuán (Table S14). In turn, many EA and SEA form a clade with Tiányuán, to the exclusion of Papuan (Table S13). Önge, Jarawa and Jehai do not form a clade with either Papuans or Tiányuán (Table S13, S14), but have a stronger affinity to Papuans than to Tiányuán (Z = 3 - 4.2, for D(Önge/Jarawa/Jehai, Tiányuán; Papuan, Mbuti)).

Relationship between Önge, Tiányuán and SEA

We find Group 1, Jarawa and Jehai form a clade with Önge to the exclusion of Tiányuán, but no other EA or SEA population form a clade with Önge, to the exclusion of Tiányuán (Table S17). Like the Önge, both Group 1 individuals carry mtDNA haplogroups within the M lineage (Table S3), thought to represent the coastal migration to Australasia (*95*).

Relationship between SEA, Tiányuán and Jōmon

To investigate the affinity between Jōmon and the ancient Hòabìnhians (Group 1), we calculated D(Tiányuán, Jōmon; X, Mbuti), where X was a test population (Table S19). All D-statistics were negative, including French (Z = -3.4), possibly due to outgroup attraction resulting from Tiányuán being positioned as an in-group. D-statistics were only non-significant when setting X to be Papuan or Australian populations.

Computing D(Tiányuán, X; Jōmon,Mbuti) (Table S20), we observe that all present day EA and SEA and ancient groups 2-6 have a significant affinity to Jōmon, relative to Tiányuán. Setting X to be Group 1 individuals, Önge, Jarawa or Jehai results in non-significant statistics. French also appear to have a significant affinity to Jōmon, possibly because of common patterns of aDNA damage in Tiányuán and Jōmon.

Relationship between Japanese and Jōmon and the Hòabìnhians

To investigate the relationship between the Japanese, the Onge, and the ancient Hòabìnhians, we computed D(Japanese, Jōmon; X, Mbuti), setting X to be different ancient or present-day SEA populations (Table S22). While most SEA and EA present-day populations and the ancient Groups 2-6 had significant affinities to the Japanese, the ancient Hòabìnhians (Group 1) had a marginally non-significant affinity to Jōmon (Z = -2.9 and -2.7, for Ma911 and La368, respectively). We note, however, that we only have a few SNPs (32,323 in the case of Ma911 129,042 in the case of La368) to compute this statistic, so we may be underpowered. Japanese appear to be a mix of Jōmon and East Asian populations, and the effect of a Hòabìnhian contribution to Jōmon would weaken the suggestive signal observed here.

D(Japanese, Jōmon;Onge,Mbuti) is not significantly different from 0 (Z = 0.03). Z-scores for D(Japanese, Jōmon;La368/Ma911,Mbuti) are much larger but still non-significantly different from 0 (Z = -2.72 and -2.92, for La368 and Ma911, respectively), perhaps suggesting that the shared affinity between Jōmon and Group 1 / Onge is more specifically driven by an affinity with Group 1 individuals, rather than with Onge. Furthermore, Ma911 possesses the rare D-M174 Y-chromosome haplogroup, found at high frequency in the Japanese Ainu (*96*).

Relationship between Group 2 and Khonda Dora

We also computed D-statistics of the form D(Group A, Group B; Not-SEA, Yoruba/Mbuti), and find that Group 2 shows a significant affinity to the Dravidian-speaking Konda Dora population from Andhra Pradesh, India (Z = 6.3), relative to Group 3 (D(Group2, Group3; Khonda Dora, Yoruba)), in agreement with previous reports of East Asian ancestry in tribal Indian groups (*97*,*98*).

Relationship to Surui and Mixe

We tested for a specific affinity in the Surui to our ancient samples, as was previously detected in Papuans, Onge and Tiányuán (*17*,*80*,*99*). For the 2240k panel, we find that D-statistics of the form D(Mixe, Surui, Group 1 individual, Mbuti) are high but non-significant (Z = -2.18 and -2.5, using Ma911 and La368, as the Group 1 representative, respectively) (Table S25). The signal is not as robust as observed for Tiányuán (Z = -3.53), Khonda Dora (Z = -3.04) and Papuans (Z = -3.02) (*80*, *102*). However, there are far fewer SNPs to compute this statistic for Group 1 individuals as X than the other populations (La368: 191,797; Ma911: 47,816;

Tiányuán: 295,628, Papuan: 471,703, Khonda Dora: 496,097), thus we may simply not have enough power to detect this signal.

SOM8. TreeMix fitting

To find well-fitting admixture graphs on which we could place different ancient SEA populations, we used TreeMix v1.13 (*19*), allowing for either 0, 1, 2 or 3 migration arrows. We only used transversions and included, in all graphs, the following samples: the high-coverage Denisovan (*100*), Kostenki-14 (*101*), the Tiányuán individual (*17*), Papuans, Önge, and two East Asian populations (Hàn and Amis) genotyped on the 2240k panel . We call these groups the "base populations" in each of the graph legends.

We rooted all graphs using Denisova as the outgroup. For each analysis, we only considered sites where all analysed populations had at least one individual with non-missing data and grouped SNPs in 5Mb blocks (-k parameter) to account for linkage disequilibrium. We ran 1,000 replicates with random seeds for each model, and selected the run with the highest likelihood. To account for damage in the ancient samples, only transversion were included. We explored various combinations of Group 1 ancient samples to overcome limited SNP overlap between the low coverage samples.

Figures S20-S29 show the graphs fitted using combinations of the base populations and additional samples:

Fig. S20: base populations only
Fig. S21: base populations + La368
Fig. S22: base populations + Ma911
Fig. S23: base populations + La368 + Ma911
Fig. S24: base populations + La364 + Ma912
Fig. S25: base populations + La368 + La364 + Ma912
Fig. S26: base populations + Ma911 + La364 + Ma912
Fig. S27: base populations + La368 + Ma911 + La364 + Ma912
Fig. S28: base populations + La364 + Ma912 + Jehai
Fig. S29: base populations + La368 + La364 + Ma912 + Japanese + Jomon + Nivkh + Surui + Mixe + Mal'ta
Fig. S30: base populations + Ma912 + In661
Fig. S31: base populations + Ma912 + In662
Fig. S32: base populations + La364 + Ma554
Fig. S33: base populations + La364 + Ma555

SOM9. qpGraph fitting

We ran *qpGraph* v6100 from the *Admixtools* package (*16*), following parameter settings as in Lipson and Reich (*102*). We used fitted graphs with chimpanzee at the root, set "outpop" to be "NULL" to prevent use from specifying a particular outgroup population in which SNPs must be polymorphic, used a block size of 0.05 Morgans for the jackknife procedure, and used the full matrix form of the objective function, with "diag" set to 0.0001. Finally, we set a Z-score = 3 as the cutoff to label a statistic as an outlier.

We used a previously estimated admixture graph of worldwide populations (*102*), and attempted to fit different SEA individuals. We first built a skeletal framework that included the chimpanzee genome (PanTro2, EPO alignment from Ensemb 71 (*103*,*104*)), Denisova (*100*) (*103*), Altai Neanderthal (*105*) (*108*), Kostenki-14 (*101*), Mbuti, Önge, Amis and Papuan, fitting a graph based on results from Lipson and Reich (*102*) and well-supported D-statistics (SOM7). We note that the degree to which we can assess differential population relationships in the early splits among East Asian populations is limited. Indeed, without including Tiányuán, we find that the split between Önge, Papuans and Amis populations is effectively a trifurcation (Fig. S34) (*102*), though including Tiányuán suggests that East Asian populations (like Amis) are best modeled as a mixture of a Tiányuán-like component and sister component to Önge (Fig. S35, worst-fitting Z = -3.564).

We used the skeletal framework from Fig. S35, and then attempted to fit ancient SEA individuals with relatively high coverage (> 0.1X) onto it. We first fit La368 (Fig. S36, worst-fitting Z = 3.372), then Ma911 (Fig. S37, worst-fitting Z = 3.803), and then La368 jointly with La364 (Fig. 3C, worst-fitting Z = 3.667).

We fit Jōmon as a mixture of an East Asian population and a population related to Group 1, which then also contributes ancestry to Japanese, and the latter are modeled as also obtaining ancestry from an EA population related to Amis (Fig. S38, worst-fitting Z = 3.297). We tried modelling Jōmon as a mixture of a population related to Tiányuán and a population related to Group 1, but this led to a bad fit (worst-fitting Z = 10.638). We also tried modelling the EA ancestry in Japanese as coming from a population related to Tiányuán (i.e. without the Önge-like contribution present in Amis), but that led to a slightly worse fit than Fig. S38 (worst-fitting Z = -3.848).

We also fit Dai (a present-day SEA population) as a mixture of La364 and an EA component, based on our previous inferences using *ADMIXTURE/fastNGSadmix* and *TreeMix* (Fig. S39, worst-fitting Z = 3.66).

While including transitions for ancient samples introduces bias, removing the transitions also removes a large number of informative sites when samples are of low coverage. We therefore repeated analyses with and without transitions for each fit, to verify our graphs were consistent. Here, we only show graphs using data excluding transitions. For all graphs with or without transitions, including Tiányuán led to at least one Z score having a value larger that 3. All worst f4 Z-scores included Tiányuán, even in very simple trees. Adding an admixture event from more basal points to Tiányuán progressively improved this fit, with the best fit being 1% admixture from the branch leading to chimpanzee. This was also observed in *TreeMix*, and in both cases was not improved by removing transitions to account for C-to-T damage. We do not believe this reflects an archaic admixture event, but is more likely a consequence of outgroup attraction induced by highly damaged DNA or poor overlap in coverage among samples. We therefore also tested each *qpGraph* model with an artificial "damage admixture" event, inducing a 1% admixture from the chimpanzee branch to Tiányuán, to assess best fitting models without bias introduced from Tiányuán. In all cases, the best fits for the Southeast Asian individuals considered in this study were consistent, regardless of whether this artificial event was added or not.

SOM10. Measurements of archaic ancestry

We first aimed to determine the amount of Neanderthal ancestry in different Southeast Asian populations. For this we computed an F4 ratio of the form f4(X, Yoruba; Altai Neanderthal Chimpanzee)/f4(Mezmaiskaya Neanderthal, Yoruba; AltaiNea, Chimpanzee) (*93*), which is meant to measure the proportion of Neanderthal ancestry in a non-African population X, using an African population (Yoruba) as a non-admixed baseline. This statistic is particularly elevated in several ancient samples (Fig. S40). However, this statistic may also be confounded by Denisovan ancestry that could be present in these populations, due to shared ancestry between Denisovans and Neanderthals.

We thus aimed to determine the amount of Denisovan ancestry in different ancient Southeast Asian populations, as a proportion of the ancestry found in present-day Papuan / Aboriginal Australian populations, using Hàn or French as baseline non-Denisovan-admixed populations. For this, we computed an F4 ratio statistic (pD) (*106*) of the form: pD(X) = f4(Denisova, Mbuti; X, Y) / f4(Denisova, Mbuti; Papuan, Y) where X is a population of interest, and Y was either Hàn (Fig. S41) or French (Fig. S42). For this analysis, we only used transitions to avoid possible biases due to ancient DNA damage, and excluded Ma525 due to its low coverage. pD(X) estimates a quantity proportional to the percentage of total Denisova ancestry in X, computed as a fraction of the total excess Denisovan ancestry found in Papuans, relative to a baseline population (Hàn or French). We observe that Ma554 shows a high proportion of relative fractional Denisovan ancestry when using Hàn as the baseline (37.8% of the total Denisovan ancestry found in Papuans), and the same pattern is observed if we replace Hàn for French as the baseline population. In particular, the amount of fractional Denisovan ancestry in Papuans is almost equivalent to the one observed in Tiányuán (Figs. S41, S42).

Tiányuán is known to harbor a large proportion of Neanderthal ancestry, so it is possible that the large amount of Denisovan ancestry observed in Ma554 is caused by high amounts of Neanderthal ancestry (due to shared genetic affinity between the Neanderthal and Denisovan populations, to the exclusion of modern humans). We observe, however, that while Neanderthal ancestry in Tiányuán is elevated relative to other present-day and ancient Asian populations, this is not so much the case for Ma554 (Fig. S43). This suggests that the high archaic ancestry in Ma554 should be attributed to Denisovans, rather than Neanderthals. Although it is located in the mainland, Ma554 exhibits Denisovan ancestry levels comparable to present-day Indonesian populations (Fig. S43) (*106*). Given its affinity to other Austronesian populations, it is possible that Denisovan ancestry in this individual is linked to shared ancestry with Indonesian populations with elevated Denisovan ancestry, which later got replaced in the mainland by populations with considerably more reduced Denisovan ancestry.

SOM11. qpWave / qpAdm analysis

We used *qpWave/qpAdm* (*107*,*108*) to determine if La368 and Ma911 can be modelled as a linear combination of ancestries from Papuans, Önge and/or Tiányuán without the need to invoke partial ancestry from a population that may have split from them before these populations split from each other. As outgroup populations, we used Yoruba (*18*), Ust'-Ishim (*109*) , Kostenki-14 (*101*), Mal'ta (*110*), Afontova Gora 3, Vestonice 16, El Mirón and Villabruna (*111*). All best 3-way and 2-way combinations for La368 are not feasible (have negative admixture weights). There are two 1-way possibilities (La368 as a sister group to either Önge or Papuans) that are feasible and are good fits (P = 0.37 and P = 0.27, respectively), as expected because Önge and Papuans are sister clades to each other - barring Denisovan introgression into Papuans. When

performing the same analysis on Ma911 as the target population, we find that all the best 3-way and 2-way combinations are also infeasible and the only good 1-way fit is with Önge (P = 0.49). Modelling Amis as a linear combination of the same three source populations results in any of the 3-, 2- or 1-way fits being feasible and good fits, but the best fit is found in the 2-way combination of Tiányuán and Önge (P = 0.98).

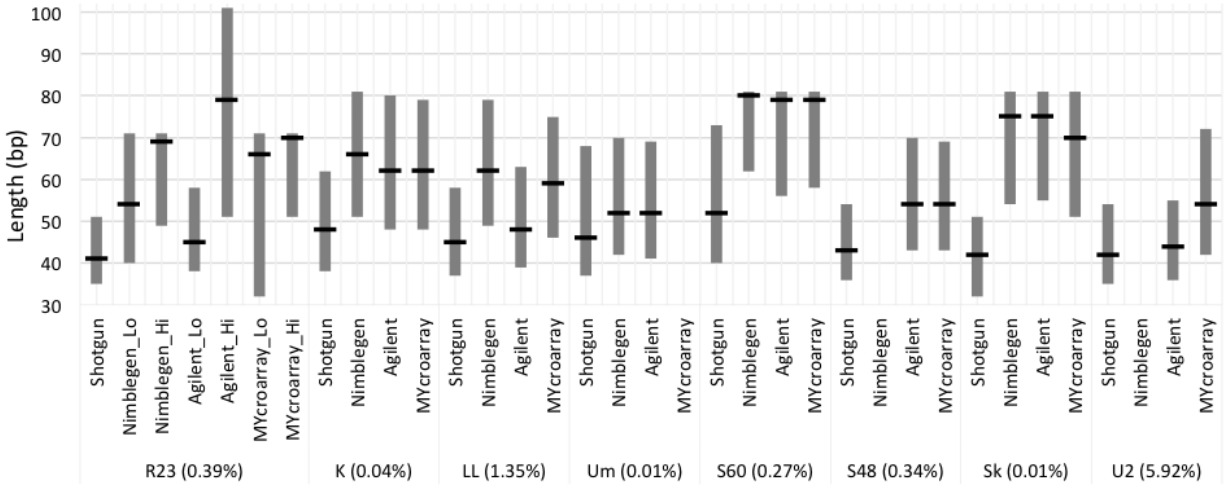

Fig. S1.

Length of sequenced reads. The median length (—) of aDNA libraries reads are shown for each sample before (Shotgun) and after enrichment of exome (Nimblegen or Agilent) or whole genome (MYcroarray). The 25- and 75- percentile ranges are indicated (bar).

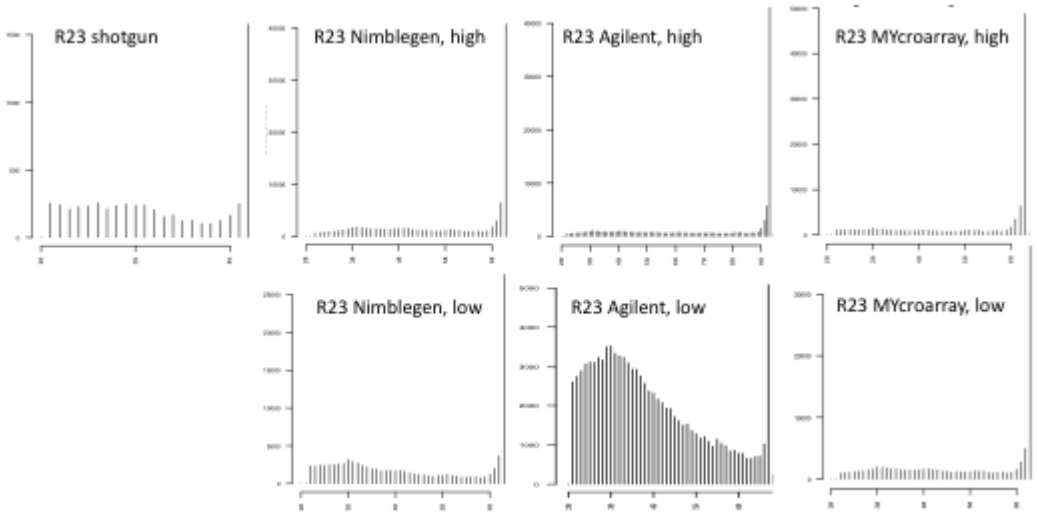

Fig. S2.

DNA fragment length distribution of libraries of control sample R23. Each panel represents the results from shotgun sequencing or capture using kits and conditions as indicated above. Note that the axes may show different ranges.

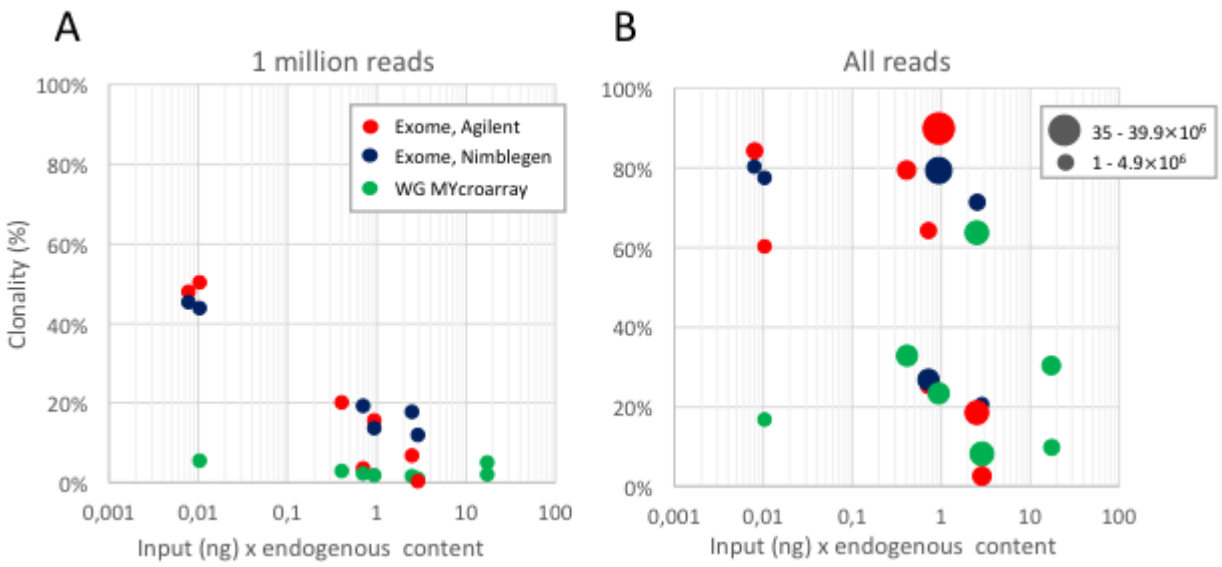

Fig. S3.

Clonality of captured aDNA libraries using one million trimmed reads (A) or the total sequence data generated (1.8 - 39.4 million reads) (B). The proportion of clonal reads are expressed as a function of the predicted complexity; (i.e. The fraction of the endogenous library DNA). In Panel B, the total number of produced reads is indicated by the relative size of the data mark. WG: Whole genome.

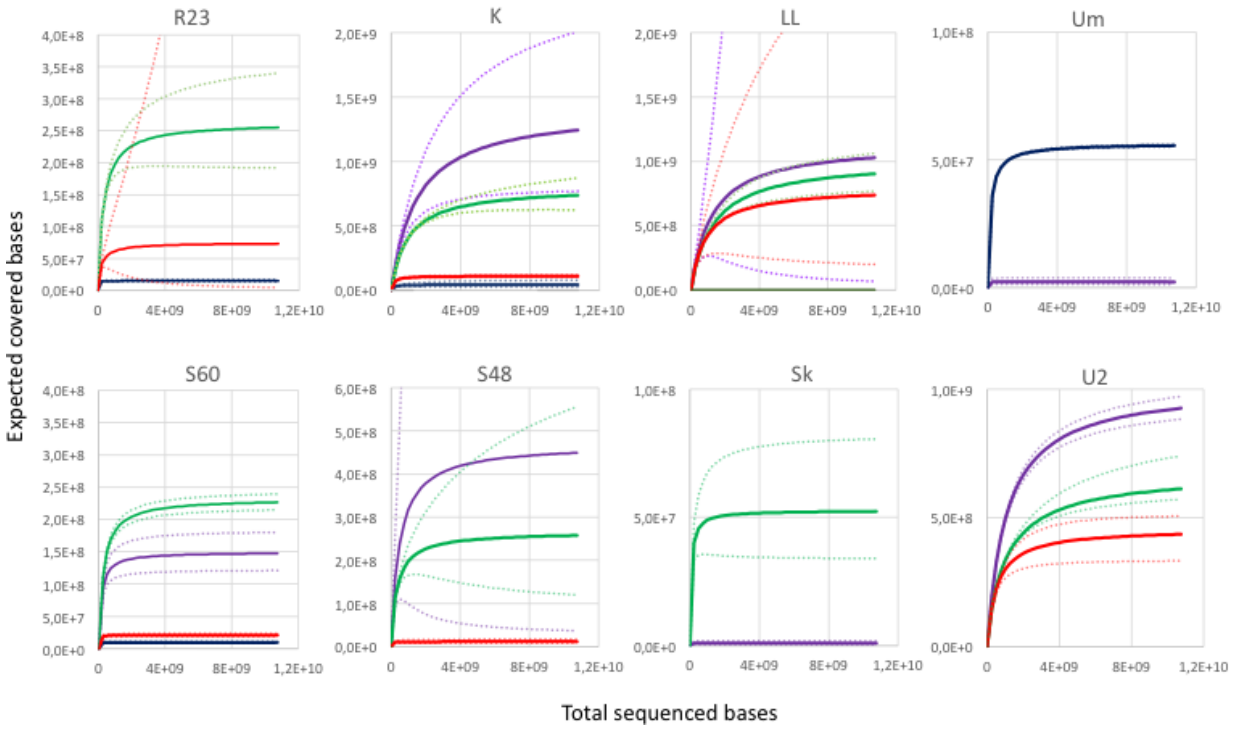

Fig. S4.

Predicted complexity in libraries pre- and post-capture, using PRESEQ. The number of expected covered bases (solid lines) is shown as a function of sequencing volume pre- (purple) and post-capture of whole genome (green) or exomes (red and blue for Agilent and Nimblegen, respectively). Confidence intervals (95%) are also indicated (dashed lines). Note that the y-axes may have different ranges.

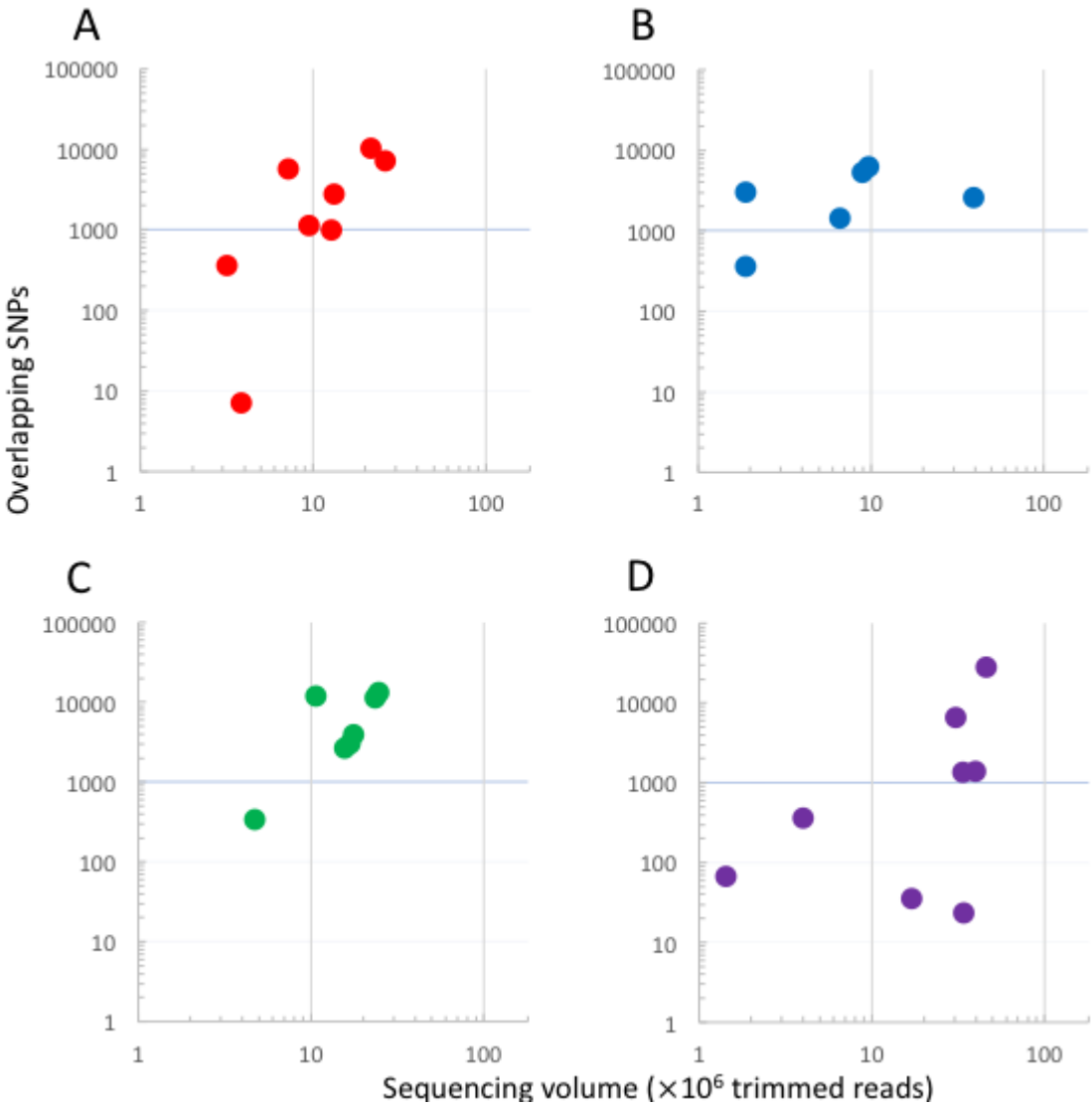

Fig. S5.

The number of SNPs overlapping with the Human Genome Diversity Project panel is shown as function of sequencing effort (expressed as trimmed reads). Libraries were target-enriched using the exome+UTR kits from Agilent or Nimblegen (A or B, respectively) or the whole genome enrichment kit from MYcroarray (C) or shotgun sequenced (D).

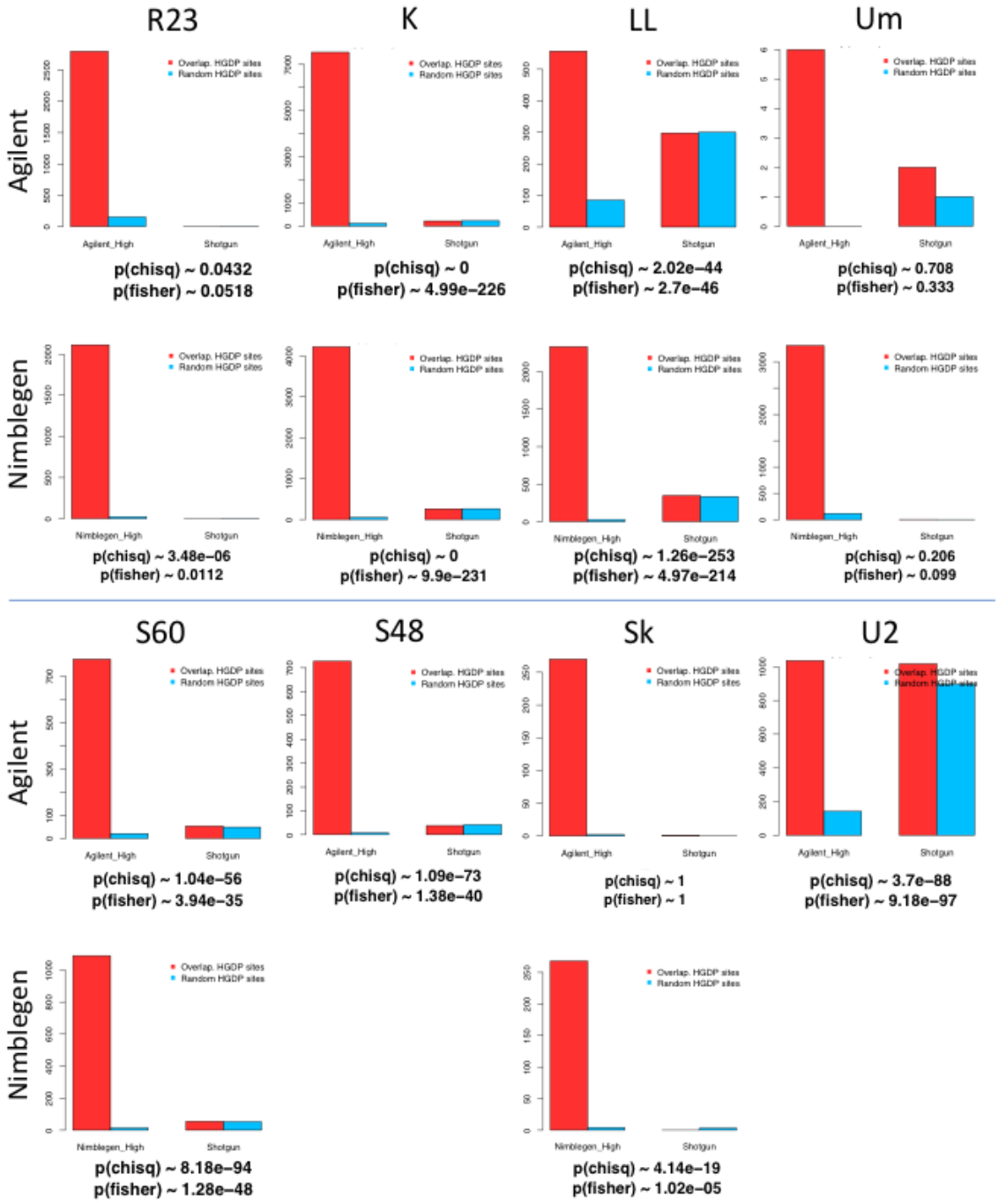

Fig. S6.

For each sample, indicated above, we show the number of HGDP SNPs covered within the target region (red), and randomly chosen outside (blue) after exome capture (Nimblegen or Agilent as indicated). Likewise, we show the same SNP coverage after shotgun sequencing, as well as the results of statistical testing (chi^2 and Fisher's exact test, p-values indicated below each panel). Note that the y-axes may have different ranges.

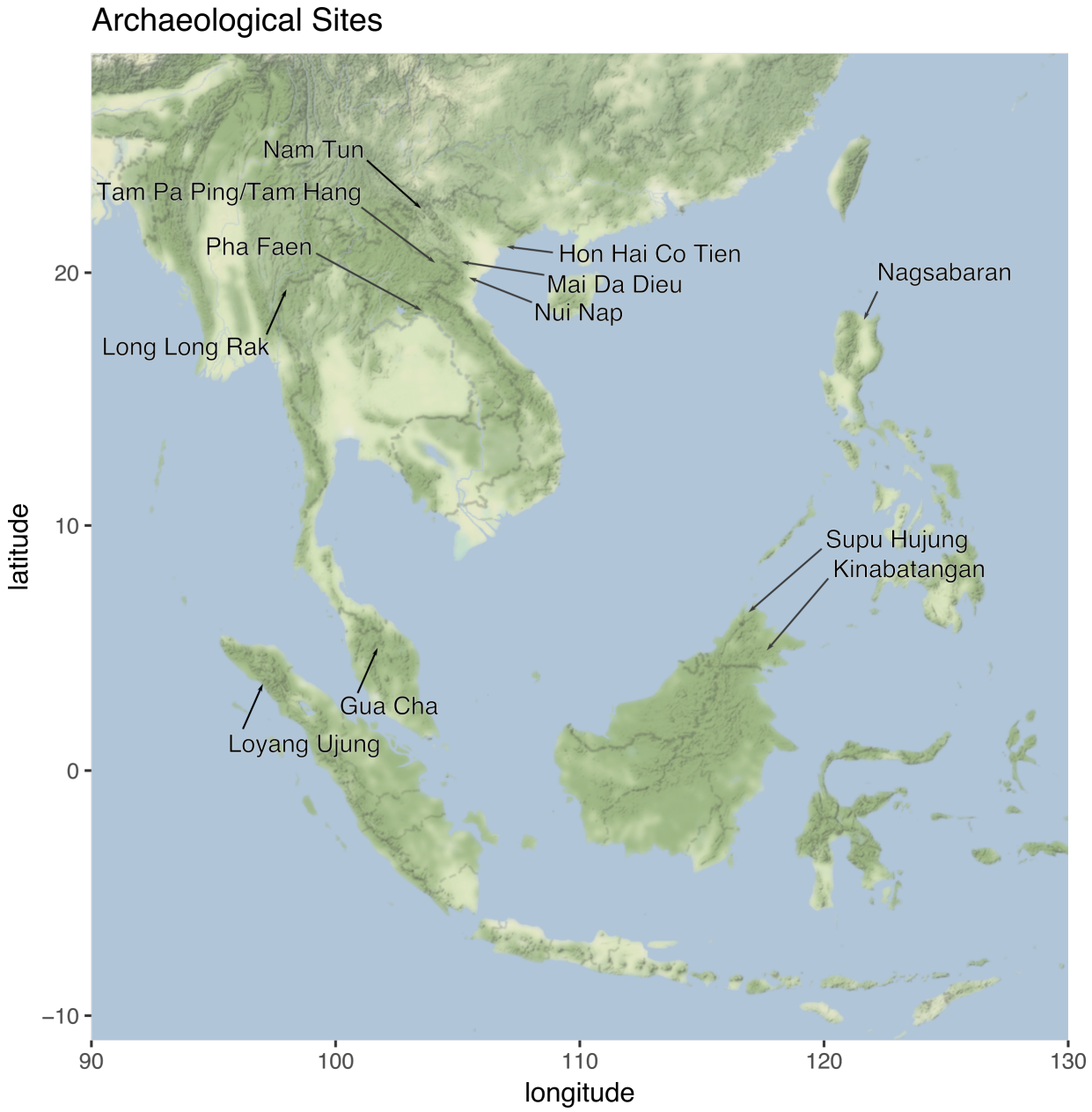

Fig. S7.
Location of archaeological sites from which we obtained ancient genomic data.

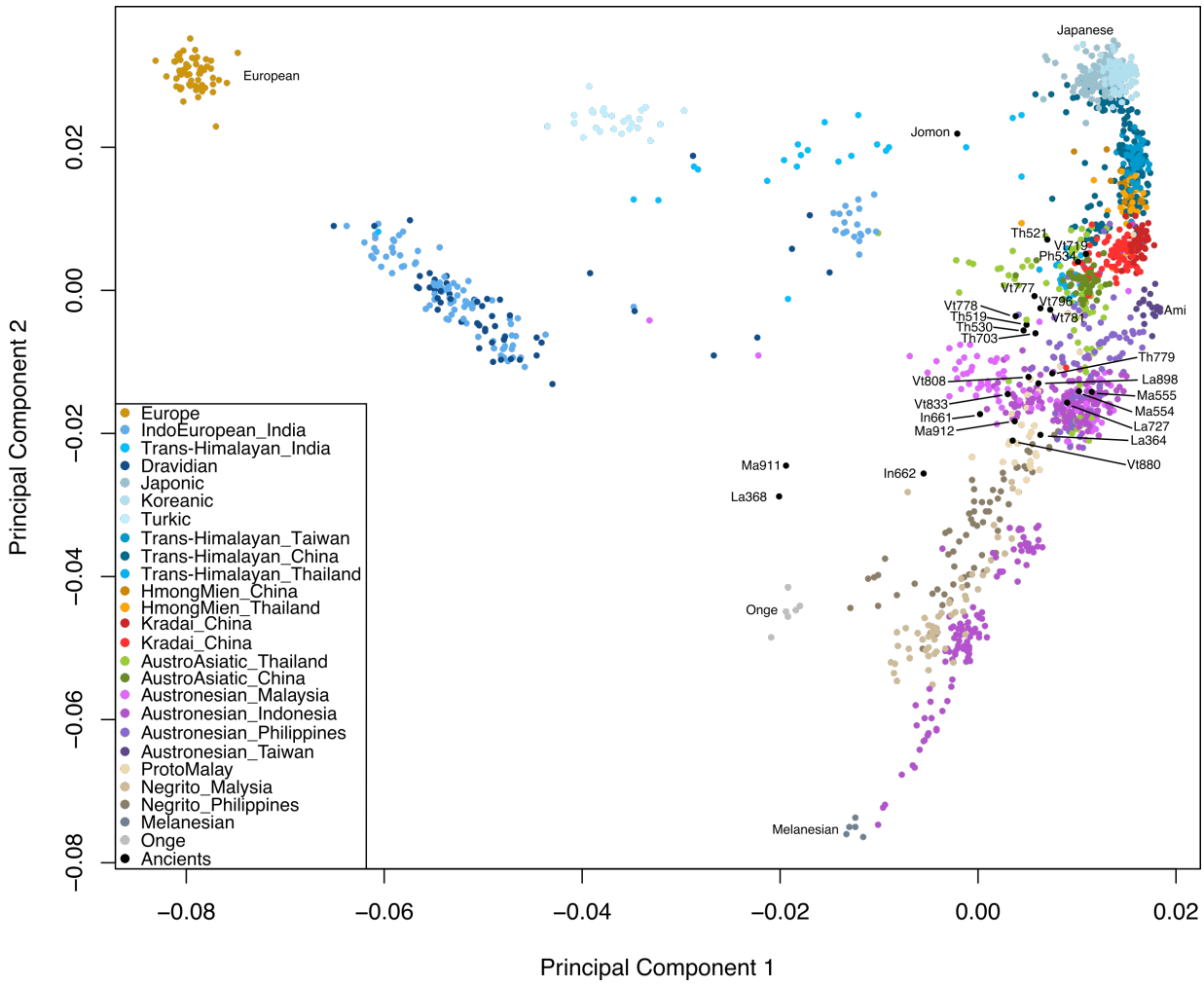

Fig. S8.
PCA of worldwide populations from Pan-Asia Panel, excluding Yoruba, and including Önge.

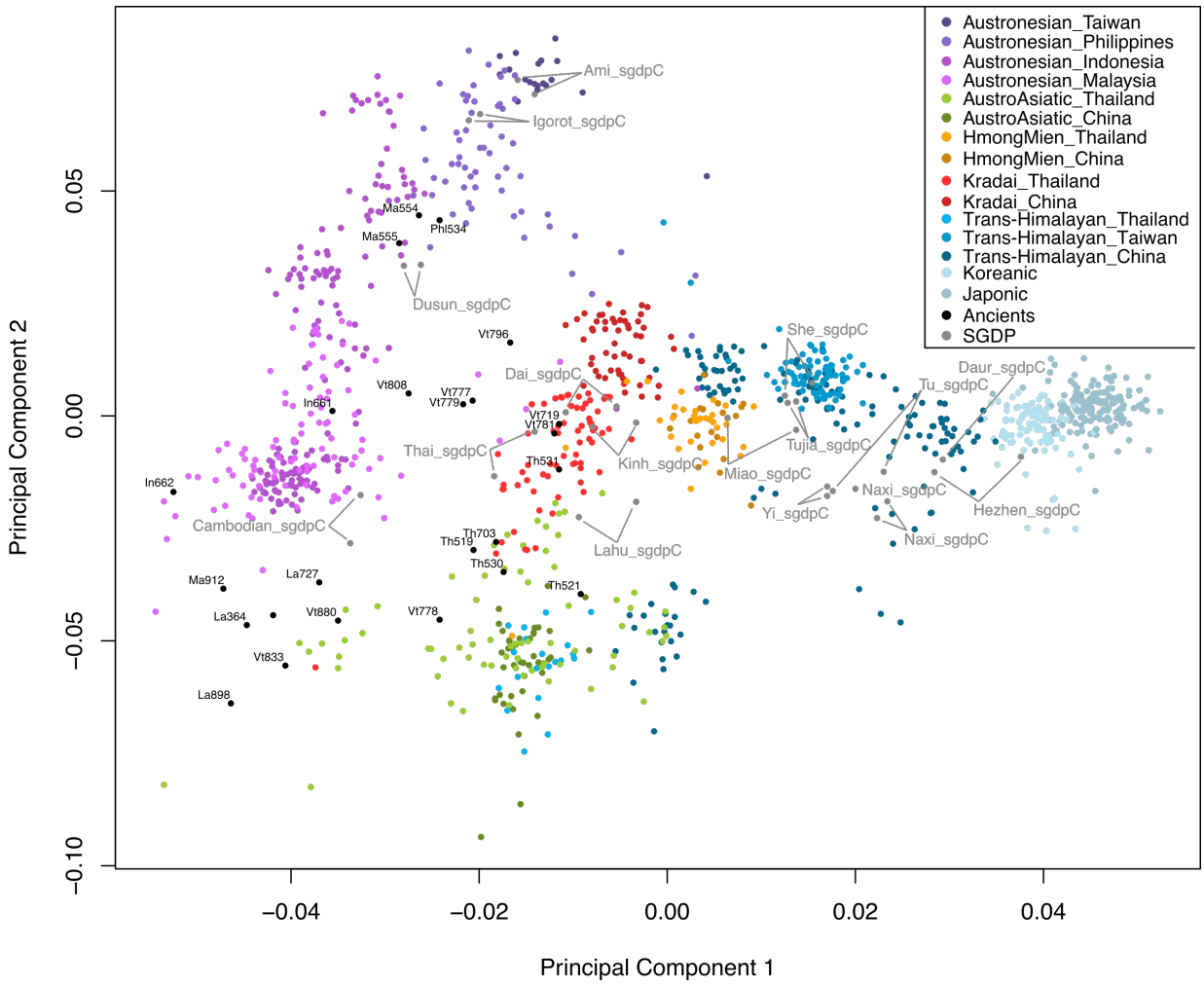

Fig. S9.

PCA from Figure 1B with ancient samples labelled, including SGDP individuals, showing the lack of present-day whole genome (SGDP) data representing clusters encompassing Group 2 and 4 samples.

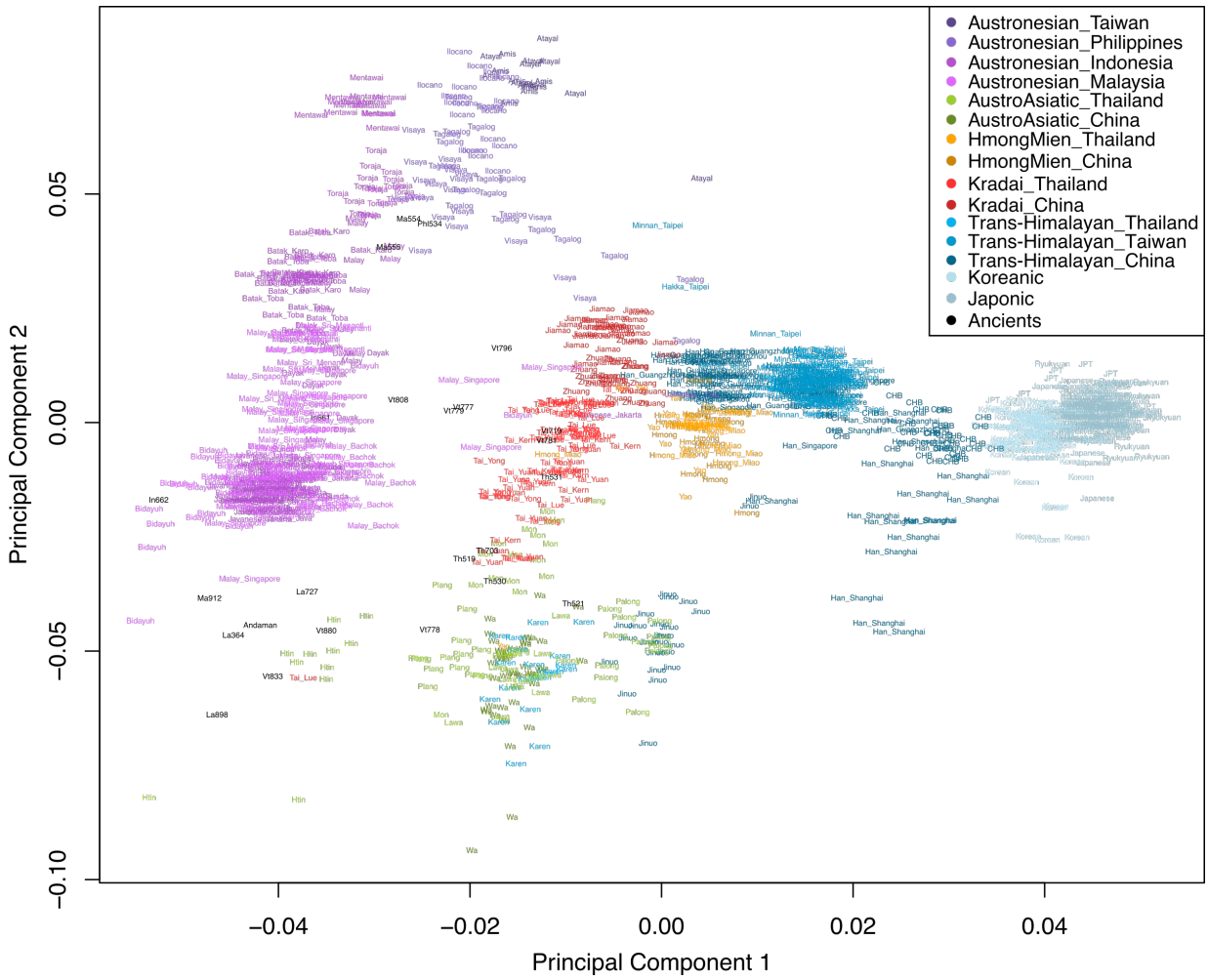

Fig. S10.
PCA from Figure 1B with population labels.

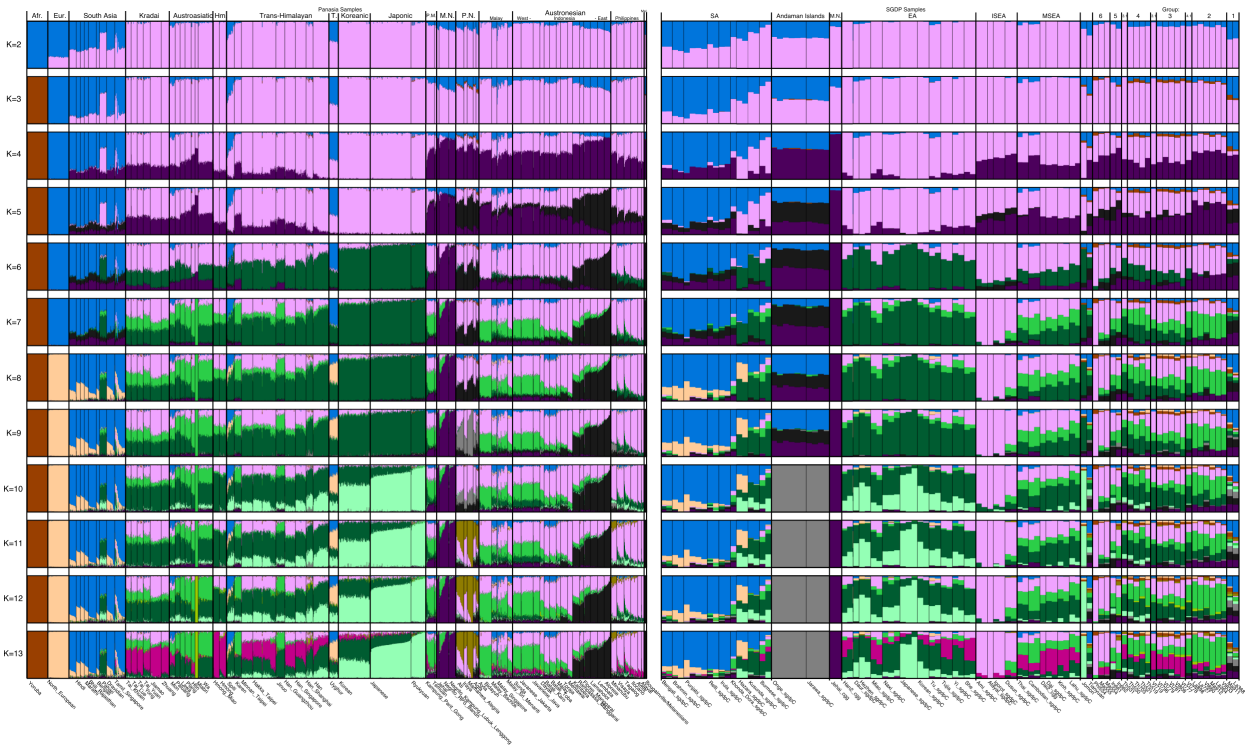

Fig. S11.

*fastNGSadmix pl*ot of Pan-Asia samples, SGDP samples, Tiányuán and ancient samples from this study, ranging from K=2 (top) to K=13 (bottom).

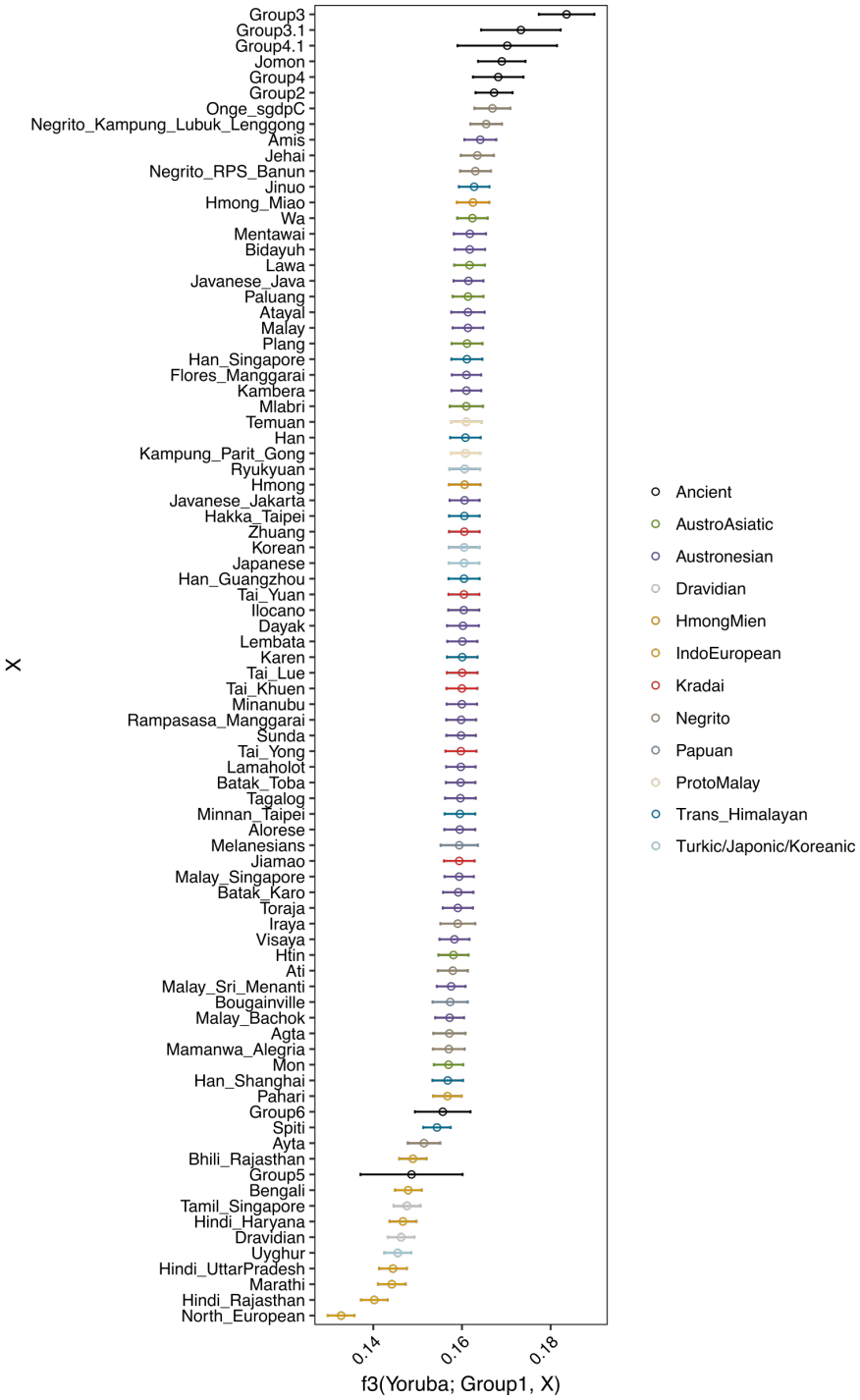

Fig. S12.

Values and standard errors of outgroup-f3 statistics using Yoruba as the outgroup, measuring shared drift between Group 1 individuals (La368, Ma911) and other individuals or populations.

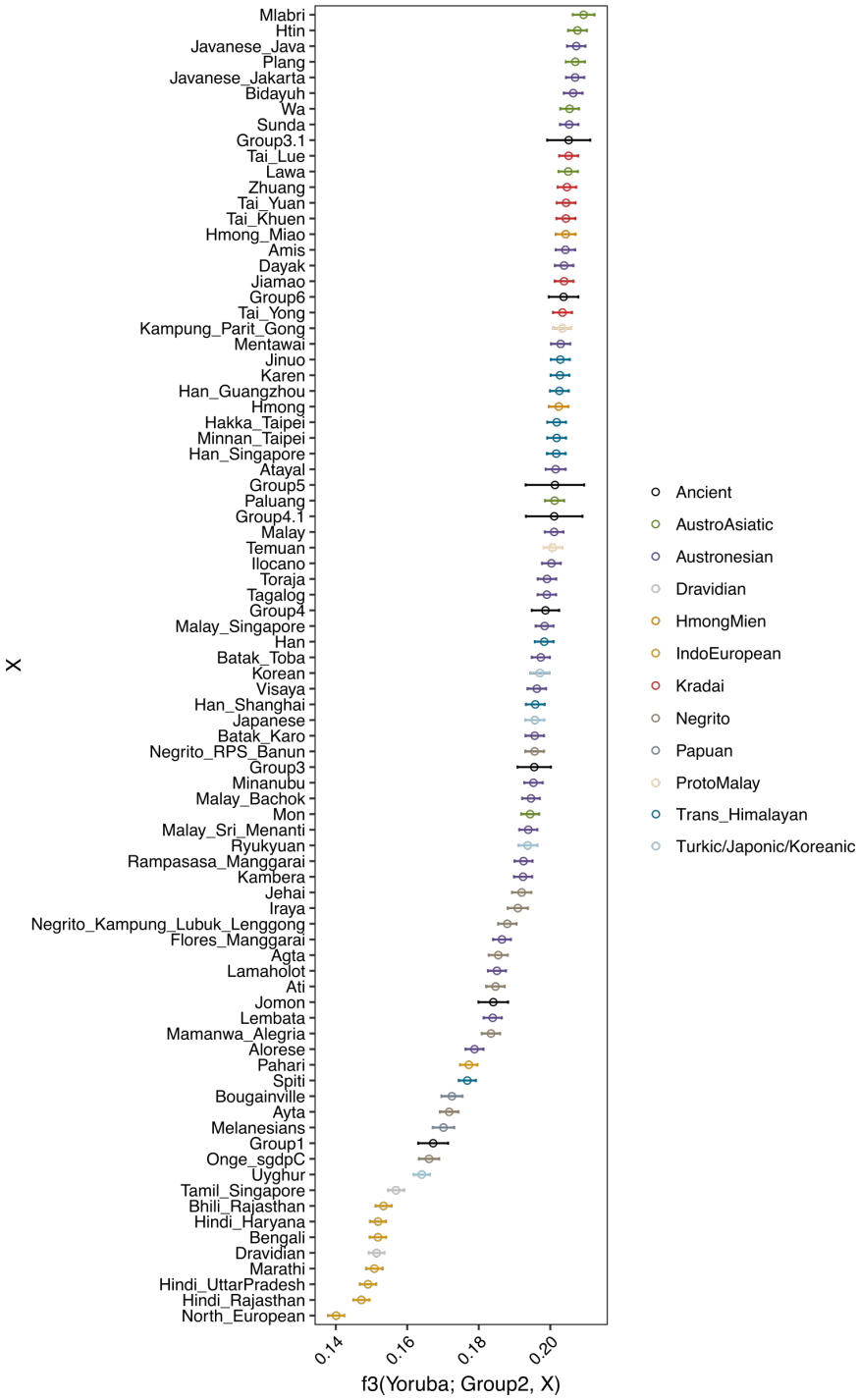

Fig. S13.

Values and standard errors of outgroup-f3 statistics using Yoruba as the outgroup, measuring shared drift between Group 2 individuals (La364, La727, La898, Ma912, Vt833, Vt880) and other individuals or populations.

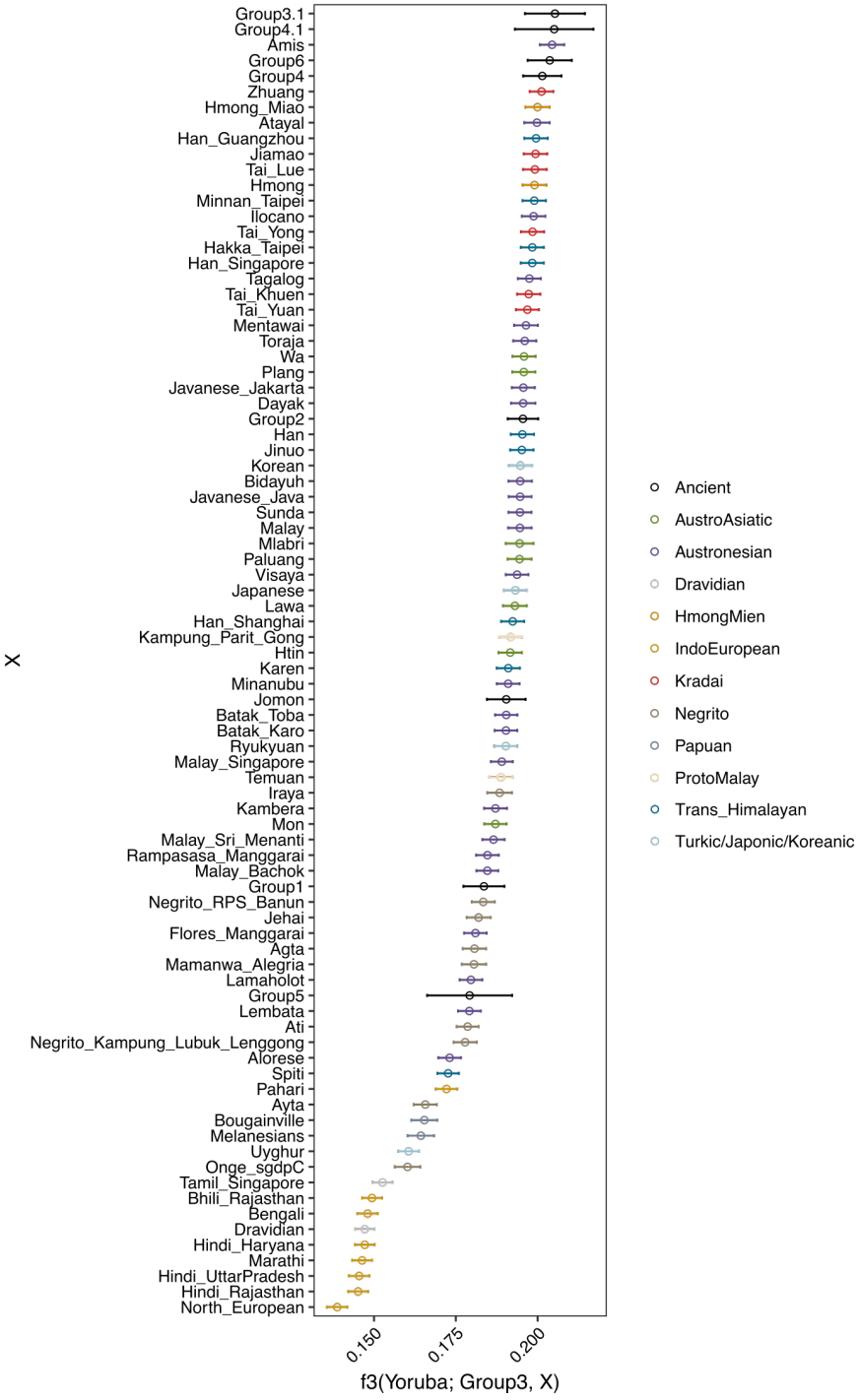

Fig. S14.

Values and standard errors of outgroup-f3 statistics using Yoruba as the outgroup, measuring shared drift between Group 3 individuals (Vt777, Vt779, Vt781, Vt796, Vt808) and other individuals or populations.

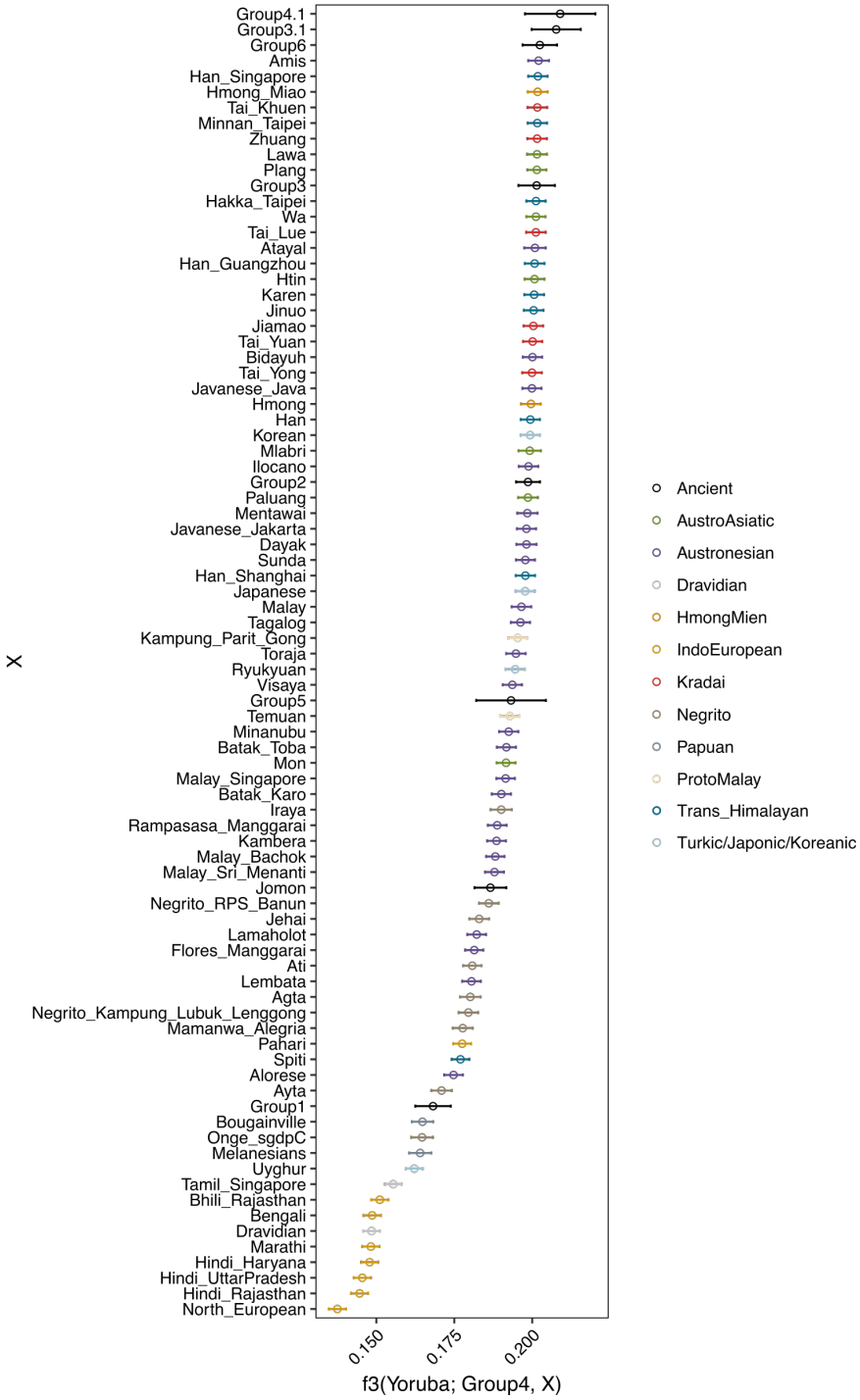

Fig. S15.

Values and standard errors of outgroup-f3 statistics using Yoruba as the outgroup, measuring shared drift between Group 4 individuals (Th519, Th521, Th530, Th703) and other individuals or populations.

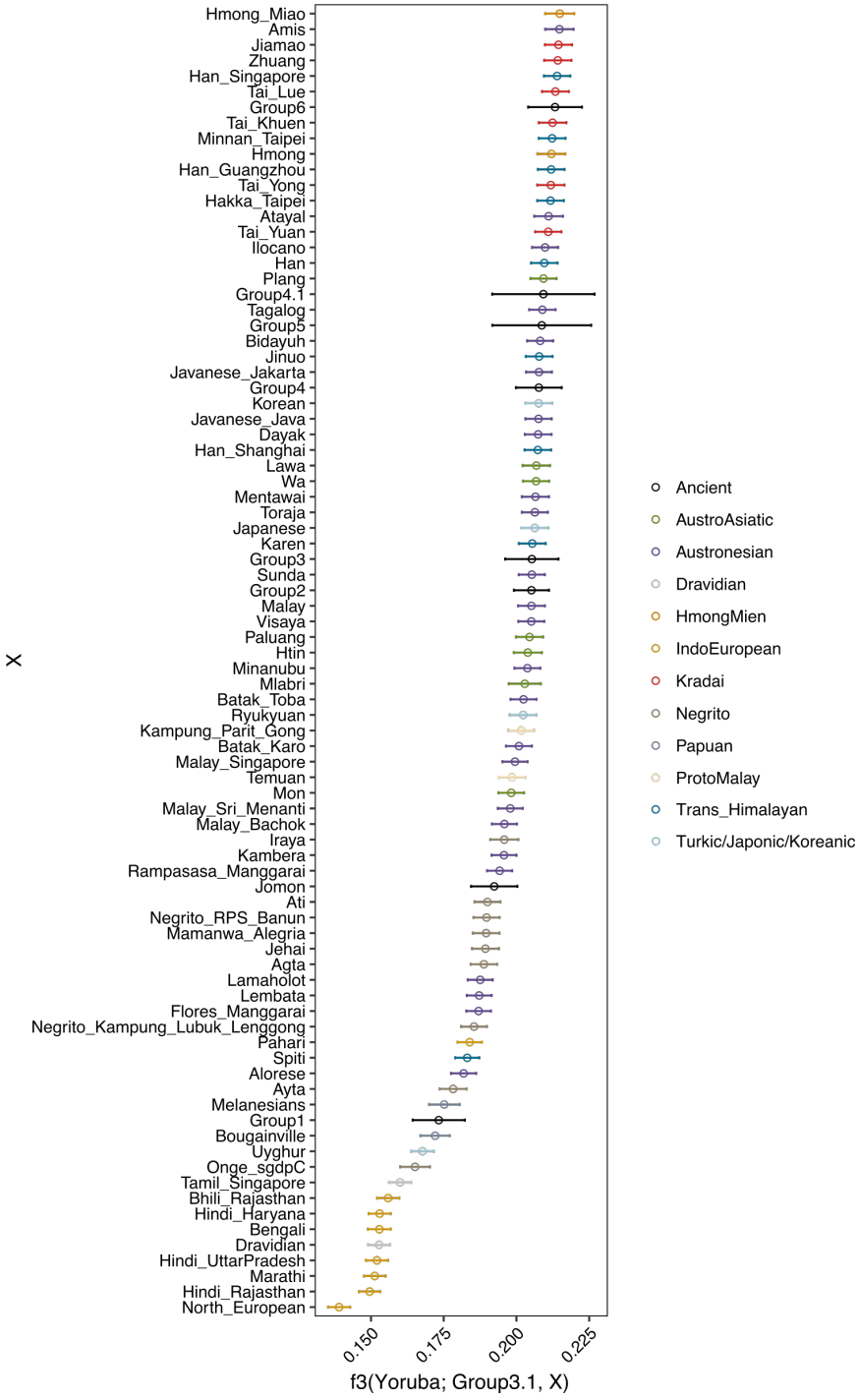

Fig. S16.

Values and standard errors of outgroup-f3 statistics using Yoruba as the outgroup, measuring shared drift between Group 3.1 individuals (Th531, Vt719) and other individuals or populations.

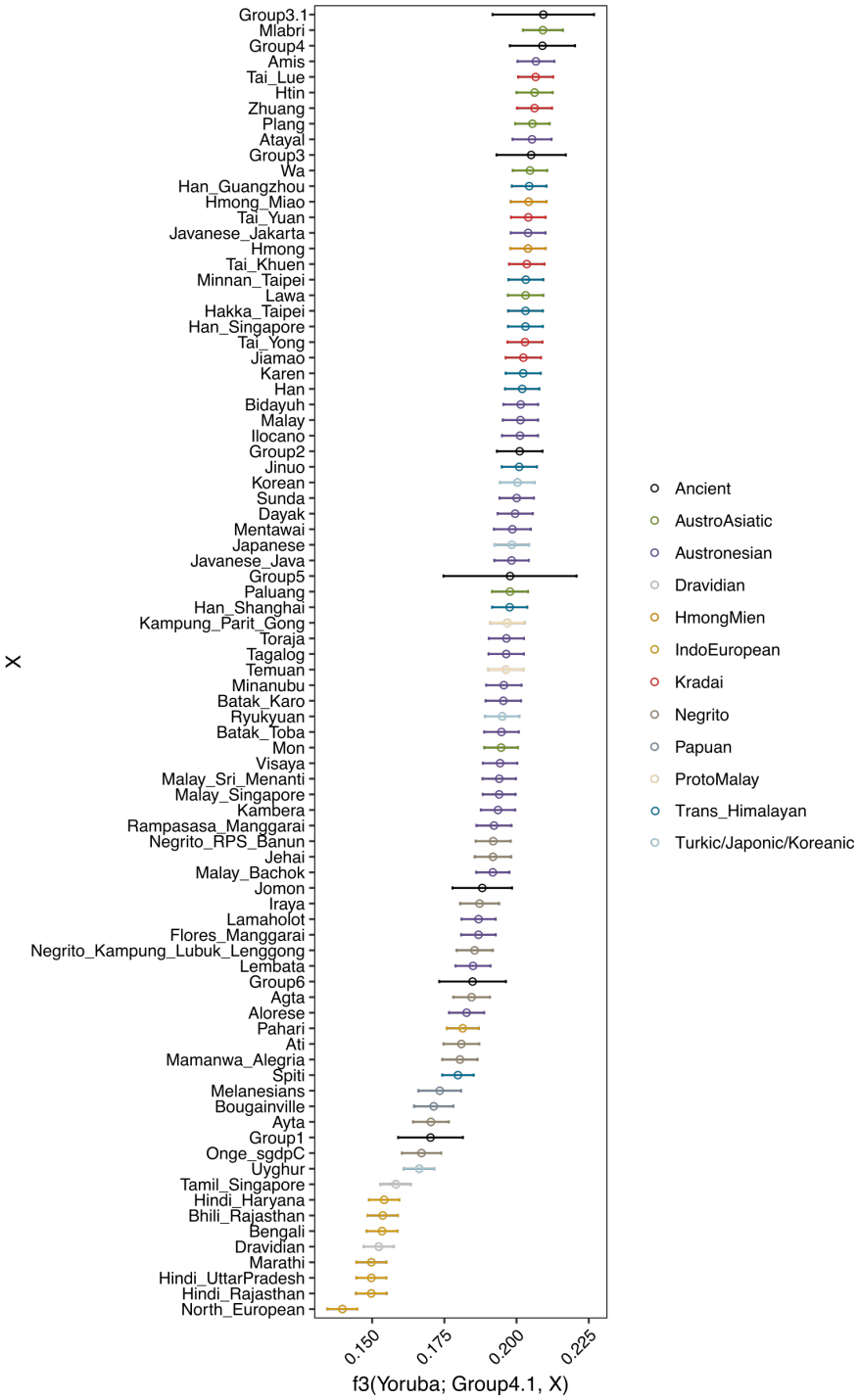

Fig. S17.

Values and standard errors of outgroup-f3 statistics using Yoruba as the outgroup, measuring shared drift between the Group 4.1 individual (Vt778) and other individuals or populations.

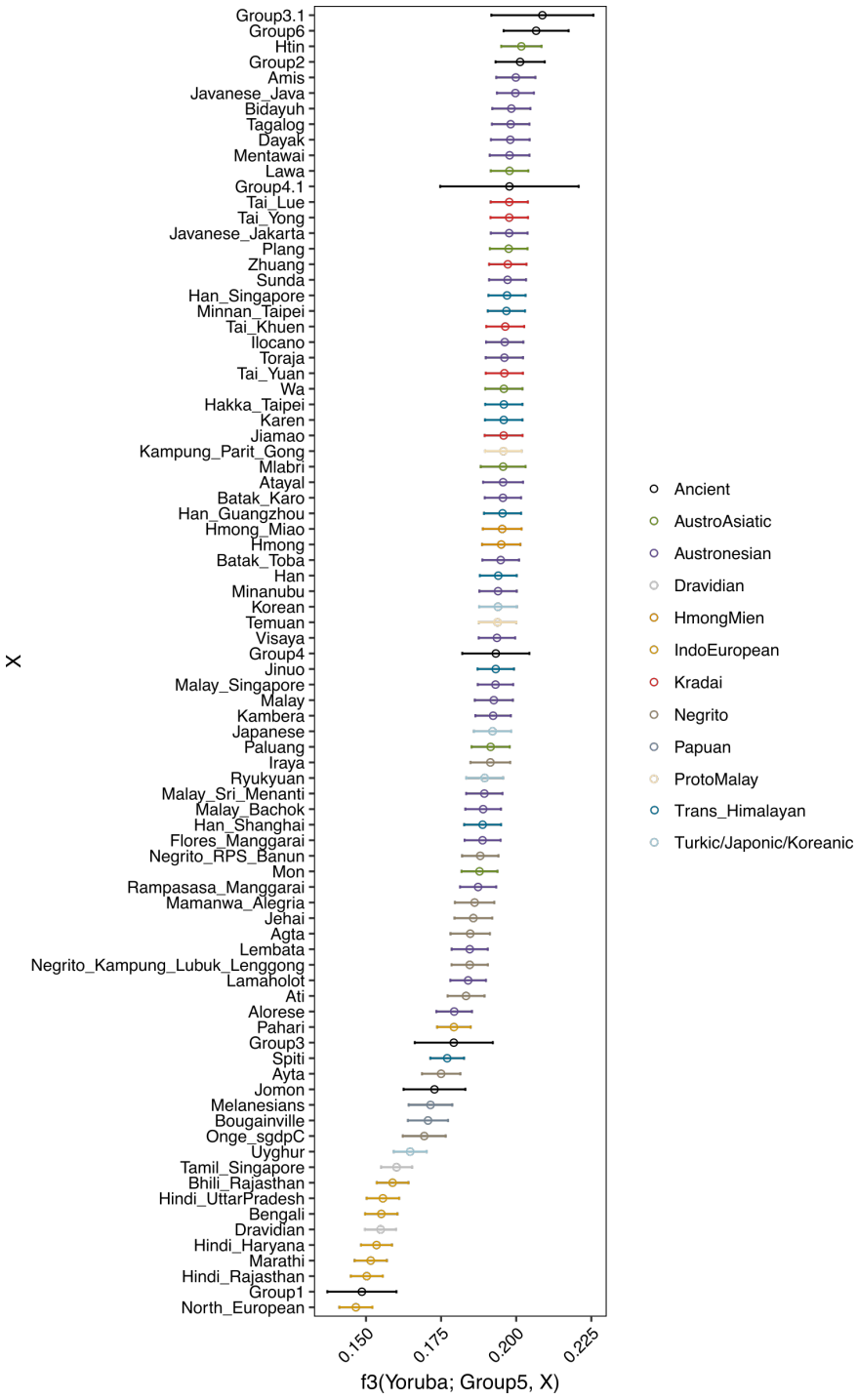

Fig. S18.

Values and standard errors of outgroup-f3 statistics using Yoruba as the outgroup, measuring shared drift between Group 5 individuals (In661, In662) and other individuals or populations.

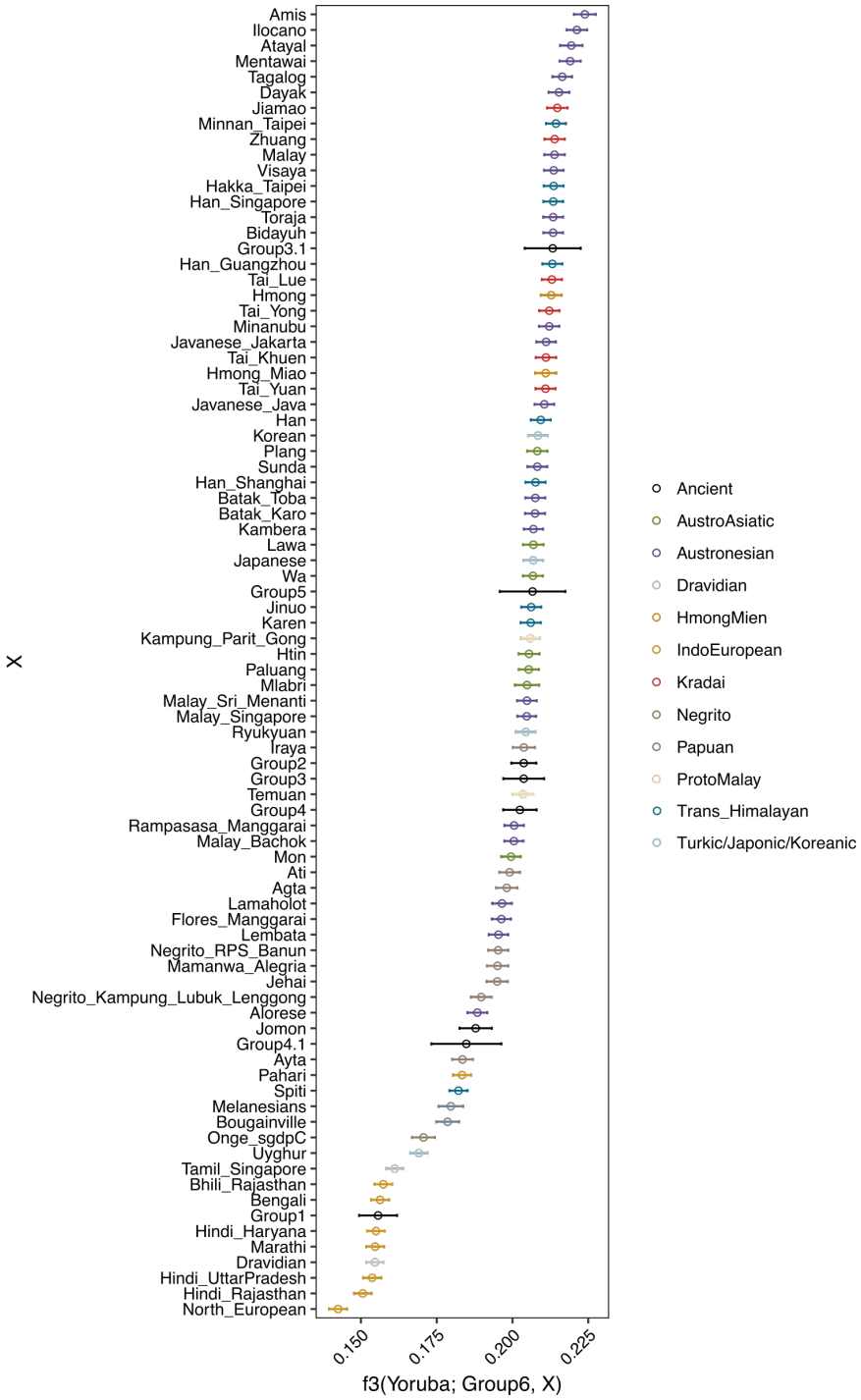

Fig. S19.

Values and standard errors of outgroup-f3 statistics using Yoruba as the outgroup, measuring shared drift between Group 6 individuals (Ma554, Ma555, Phl534) and other individuals or populations.

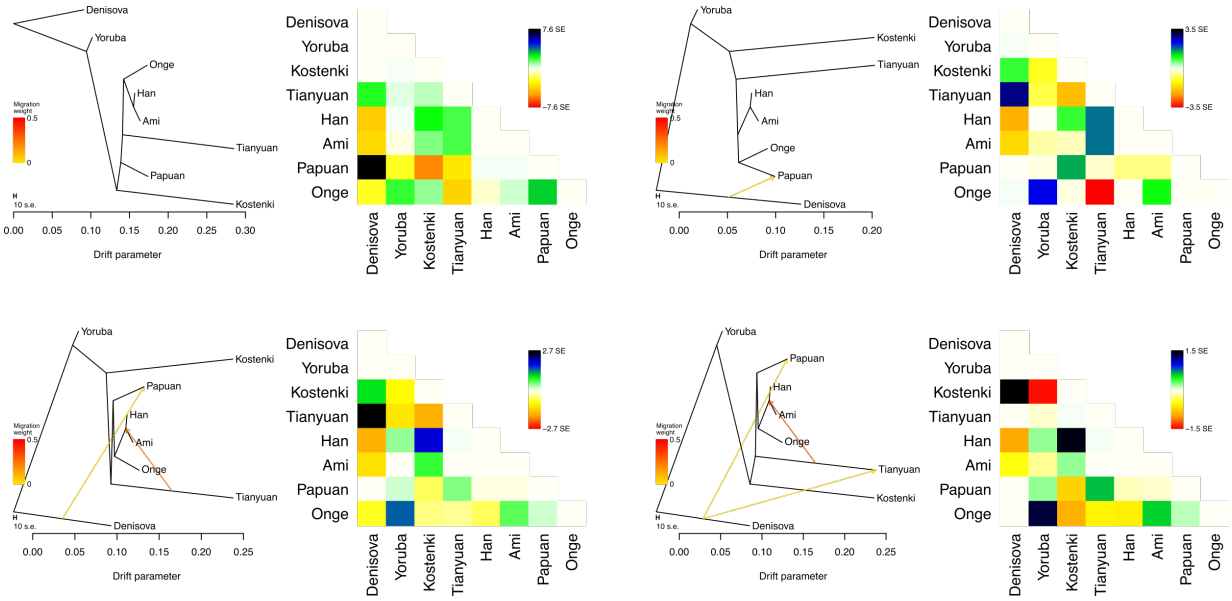

Fig. S20.

TreeMix admixture graphs modelling relationships among the "base populations": Önge, Tiányuán Papuan and ancestral populations (Kostenki, Yoruba, Denisova) (422,211 SNPs).

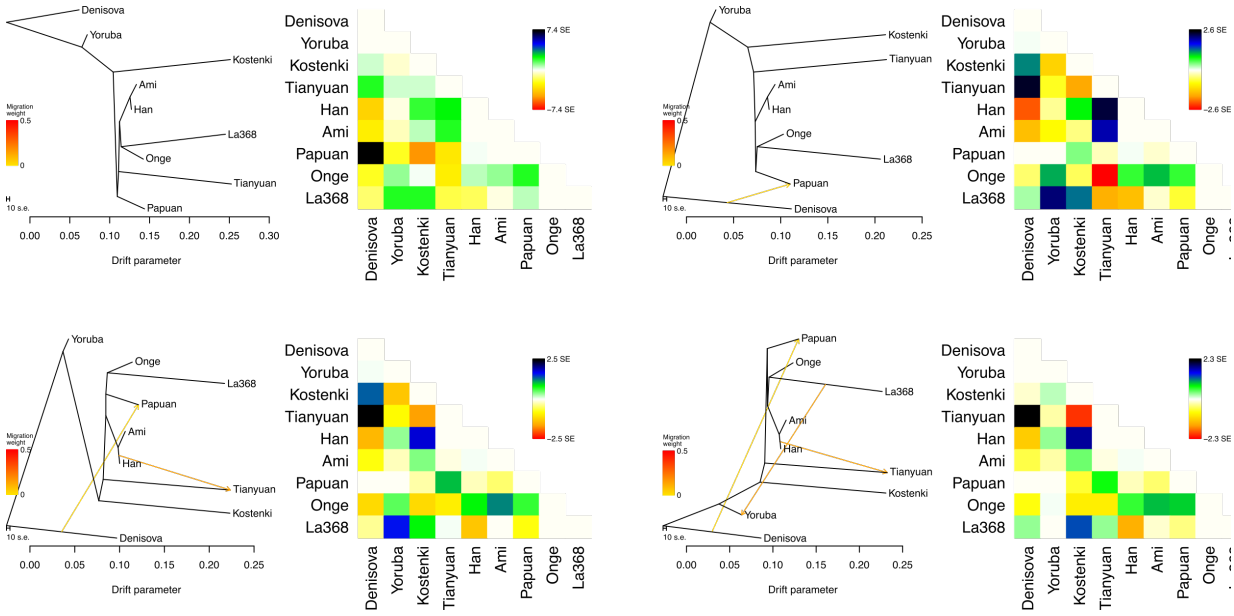

Fig. S21.

TreeMix admixture graphs modelling relationships between the "base populations" and La368 (Group 1) (189,694 SNPs).

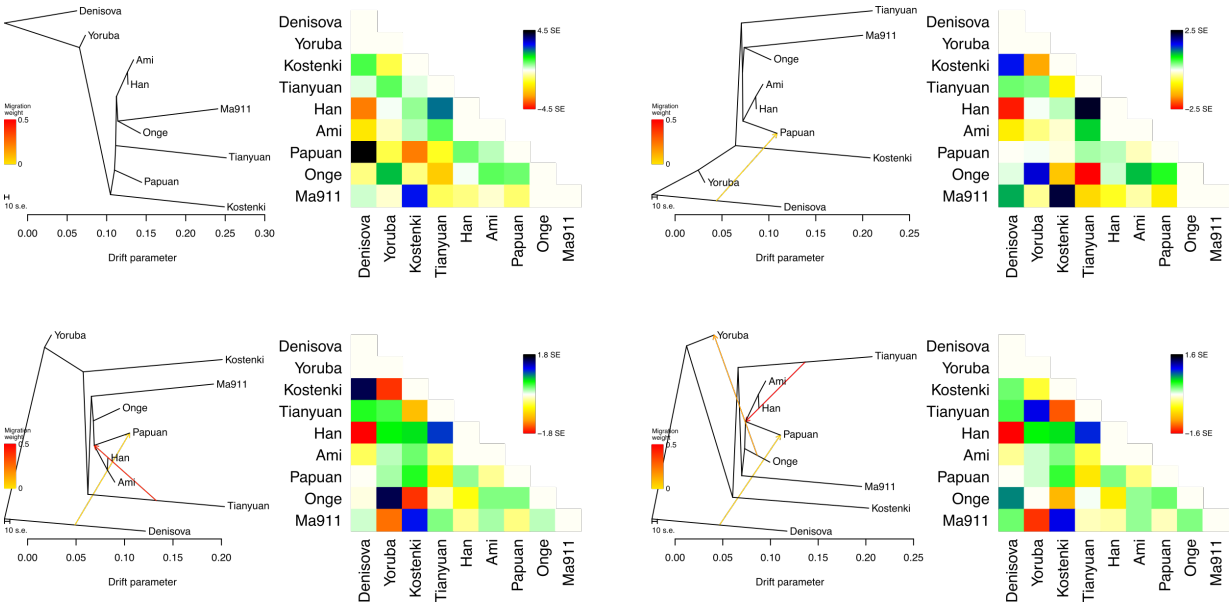

Fig. S22.

TreeMix admixture graphs modelling relationships between the "base populations" and Ma911 (Group 1) (47359 SNPs).

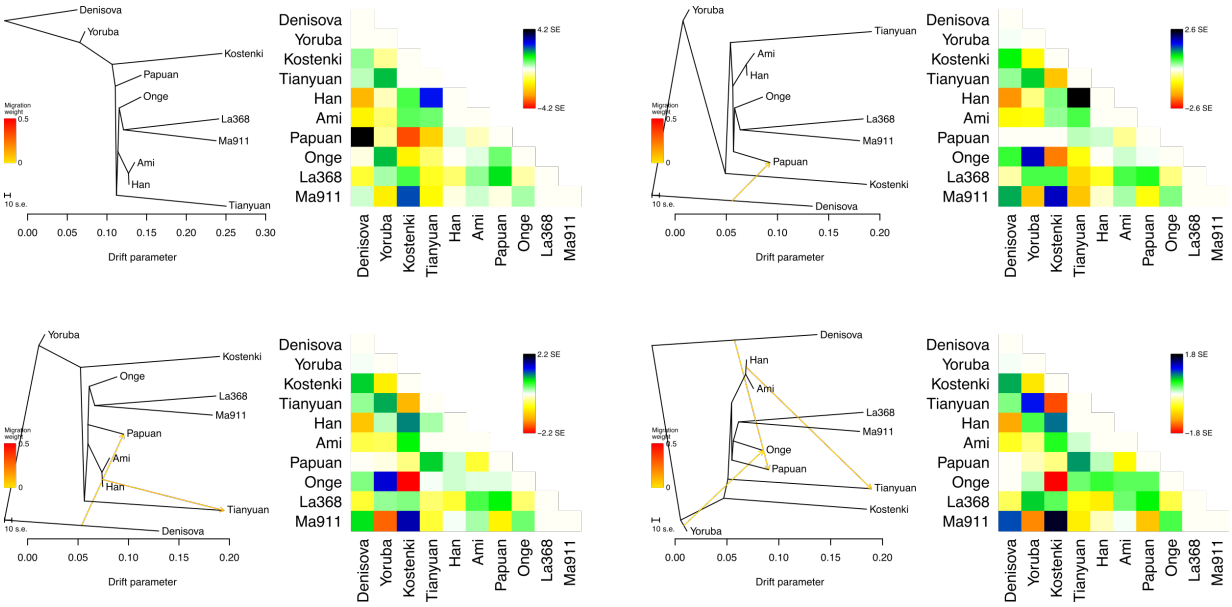

Fig. S23.

TreeMix admixture graphs modelling relationships between the "base populations" and both La368 and Ma911 (Group 1) (24,324 SNPs).

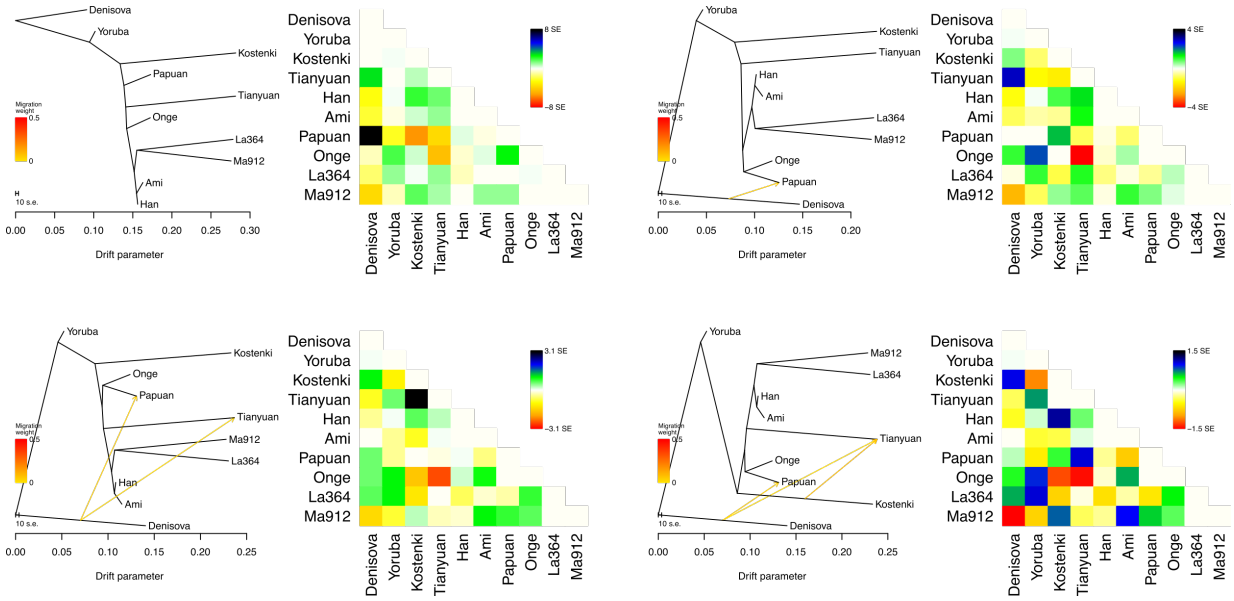

Fig. S24.

TreeMix admixture graphs modelling relationships between the "base populations" and the two Group 2 individuals (La364 and Ma912) (274,352 SNPs).

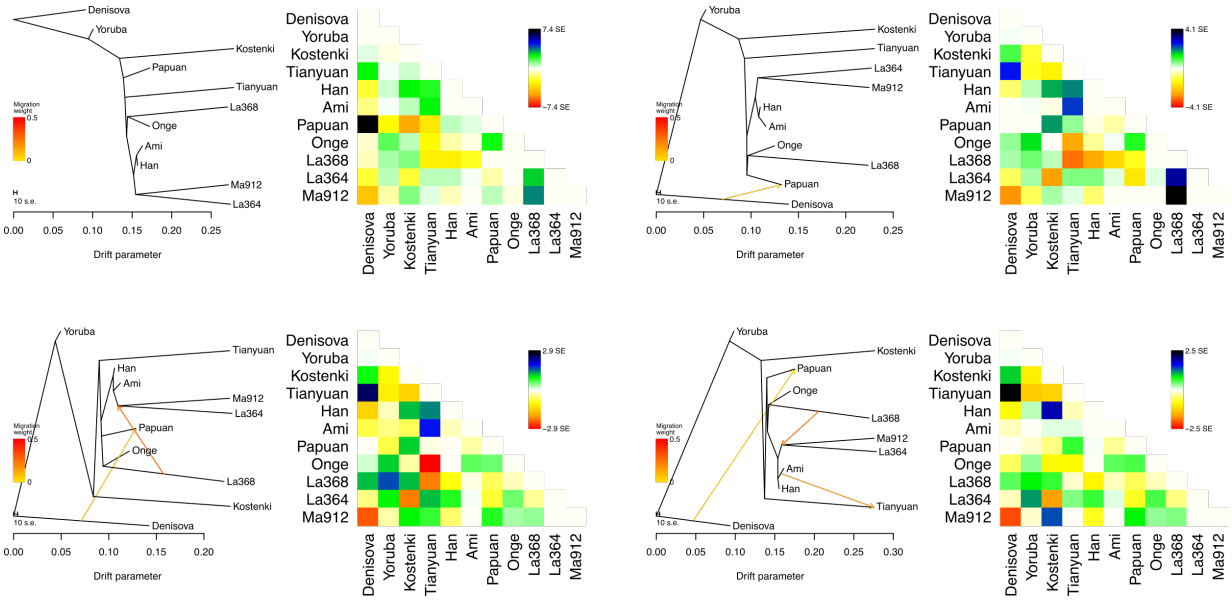

Fig. S25.

TreeMix admixture graphs modelling relationships between the "base populations" and the Laotian sample from Group 1 (La368) and the two Group 2 samples (La364 and Ma912) (129,039 SNPs).

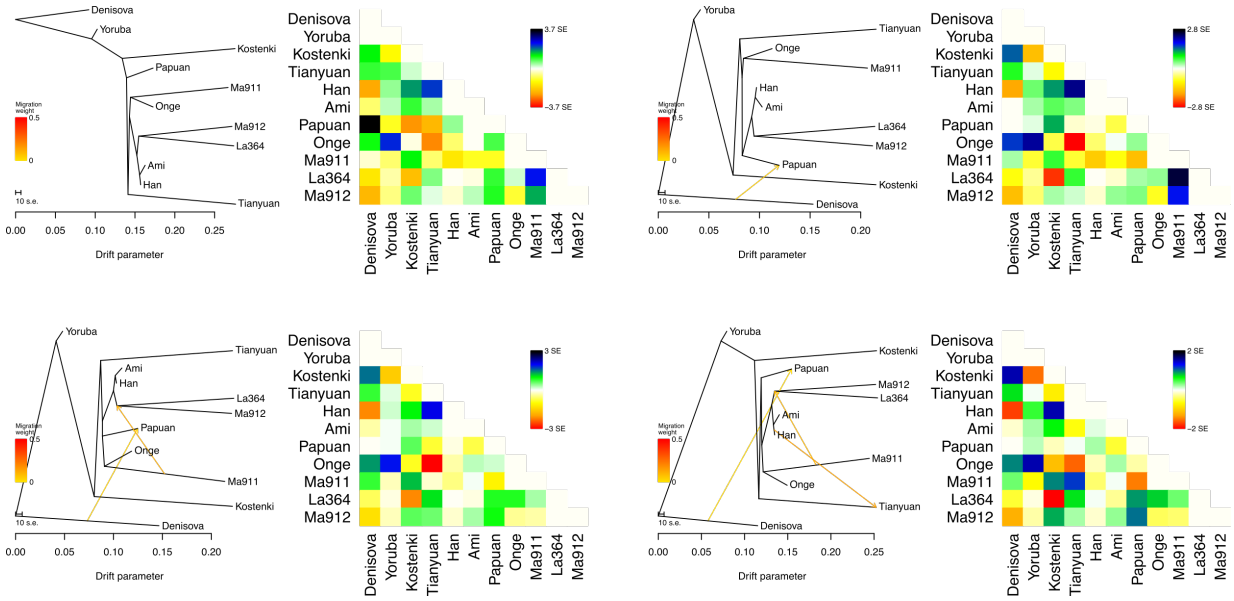

Fig. S26.

TreeMix admixture graphs modelling relationships between the "base populations" and the Malaysian sample from Group 1 (Ma911) and the two Group 2 samples (La364 and Ma912) (32,465 SNPs).

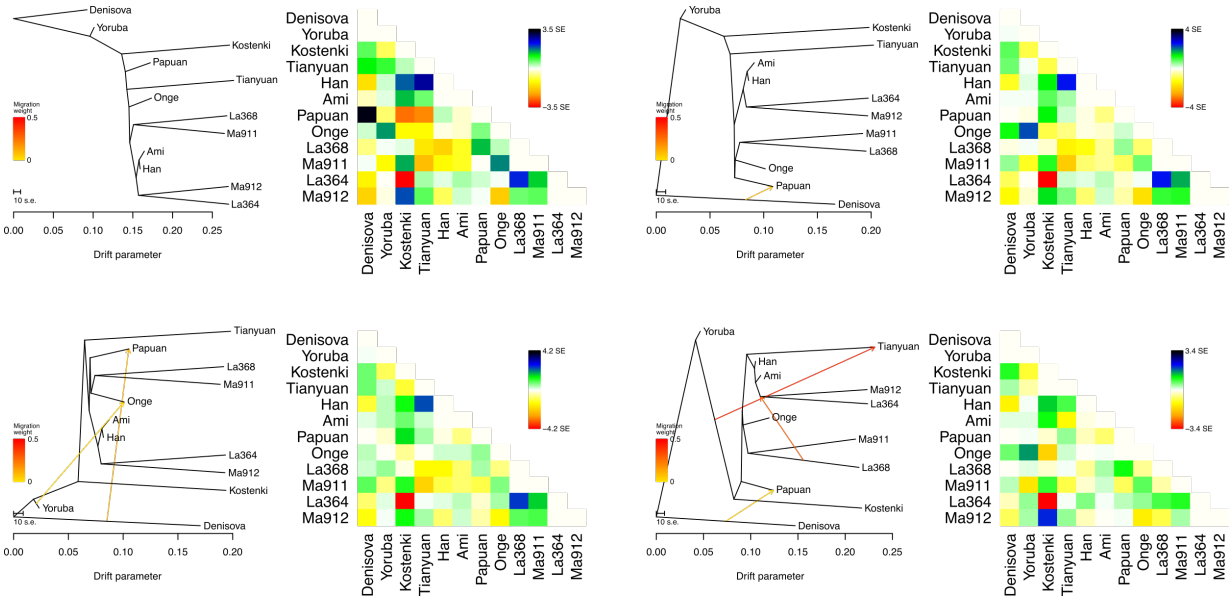

Fig. S27.

TreeMix admixture graphs modelling relationships between the "base populations" and the two samples from Group 1 (La368 and Ma911) and the two samples from Group 2 (La364 and Ma912) (17,286 SNPs).

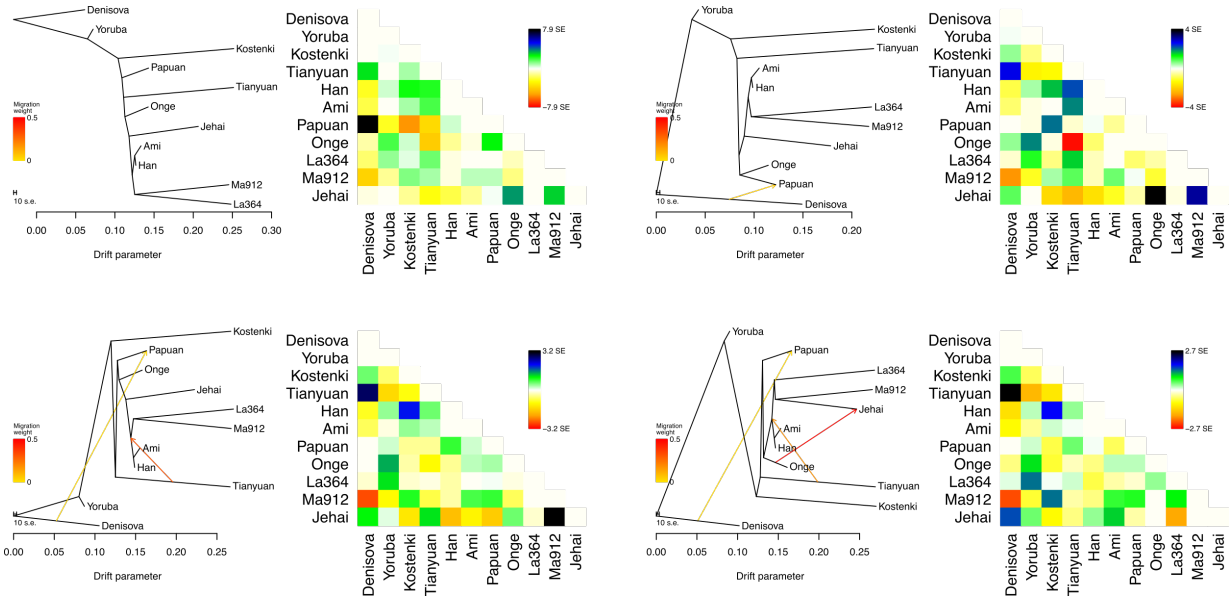

Fig. S28.

TreeMix admixture graphs modelling relationships between the "base populations", the two Group 2 samples (La364 and Ma912) and Jehai (275,053 SNPs).

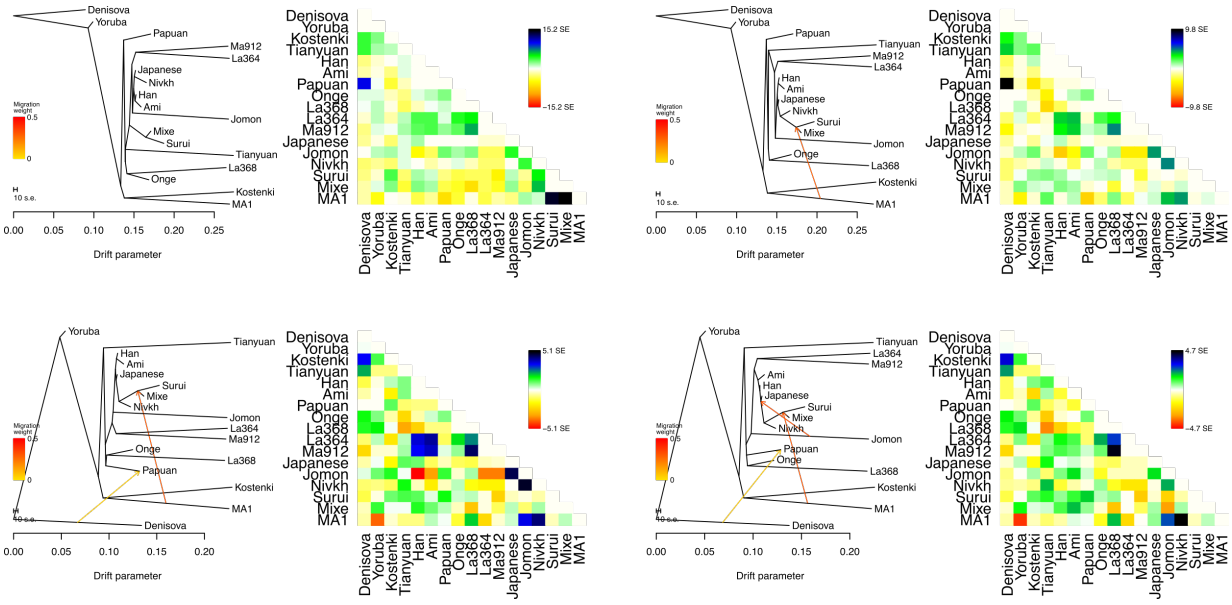

Fig. S29.

TreeMix admixture graphs modelling relationships between the "base populations" and the Laotian sample from Group 1 (La368), the two Group 2 samples (La364, Ma912), present-day Japanese, Jōmon, Nivkh, Surui, Mixe and the Mal'ta ancient genome (78360 SNPs).

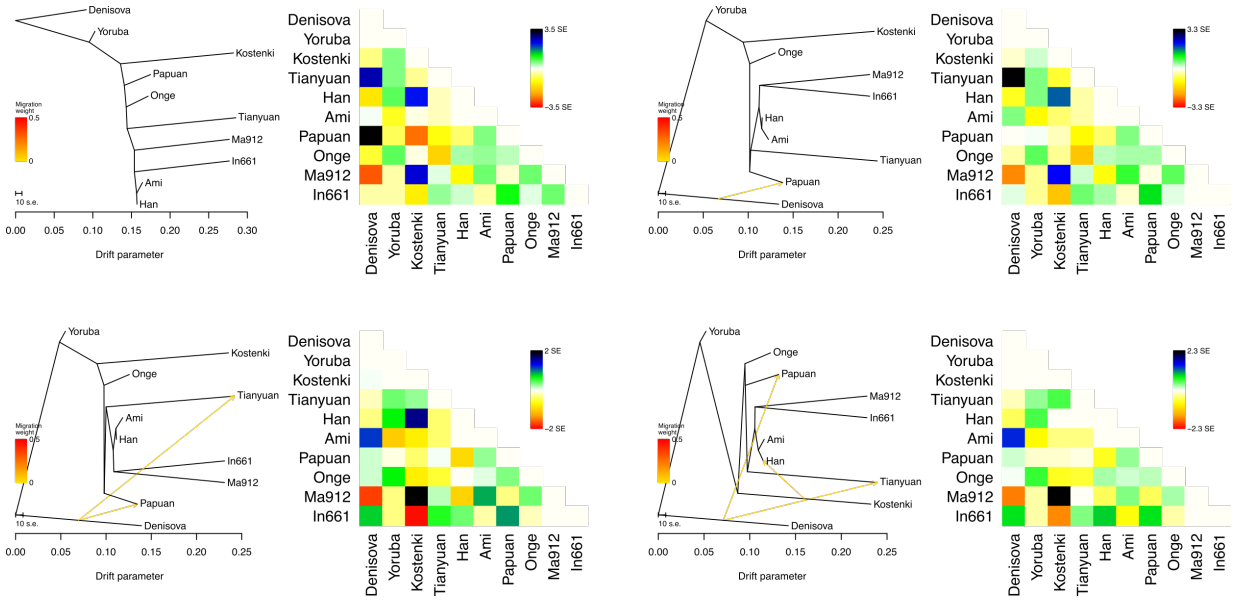

Fig. S30.

TreeMix admixture graphs modelling relationships between the "base populations" and the Malaysian samples from Group 2 (Ma912) and an Indonesian Group 5 sample (In661) (18,594 SNPs)

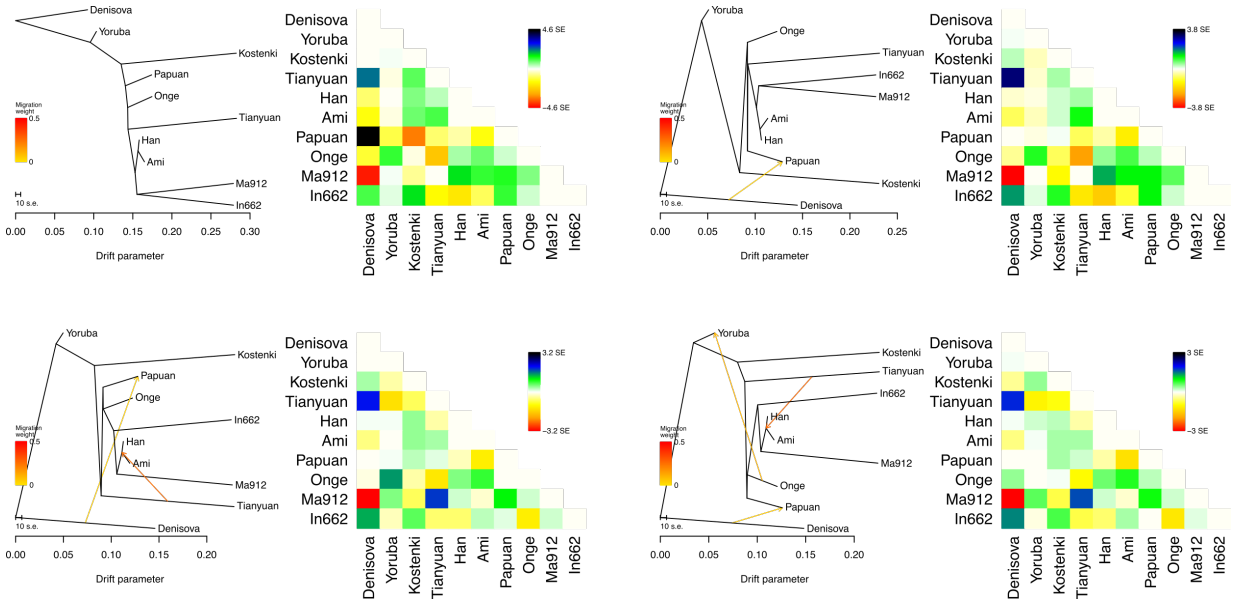

Fig. S31.

TreeMix admixture graphs modelling relationships between the "base populations" and the Malaysian samples from Group 2 (Ma912) and an Indonesian Group 5 samples (In662) (33,895 SNPs)

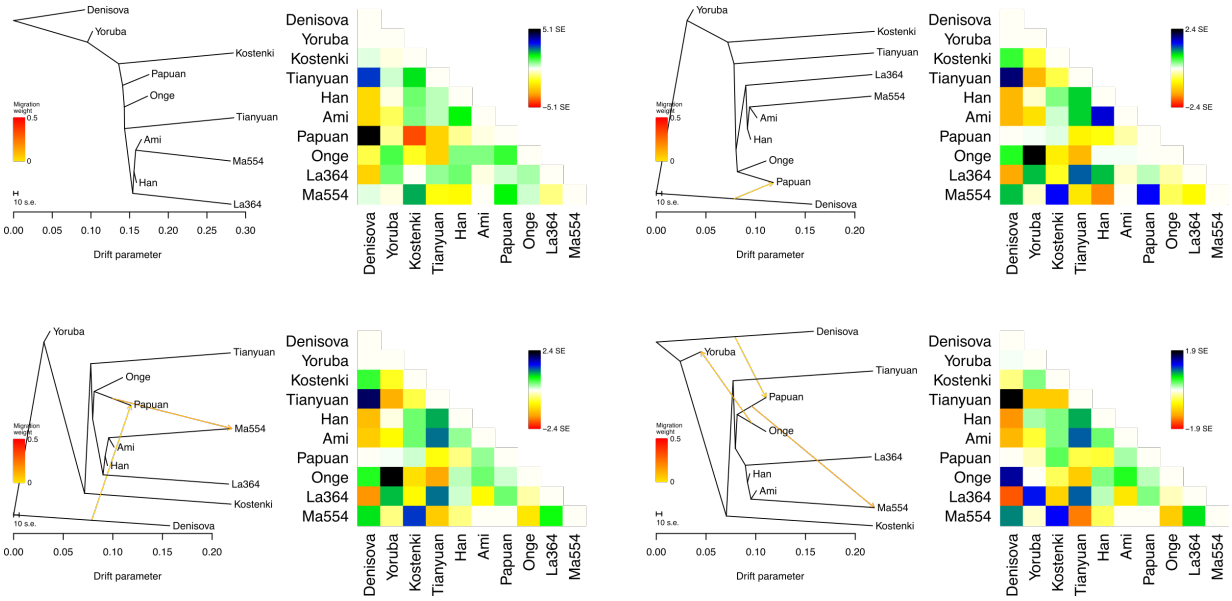

Fig. S32.

TreeMix admixture graphs modelling relationships between the "base populations" and the Laotian sample from Group 2 (La364) and a Group 6 Sample from Borneo (Ma554) (54,144 SNPs)

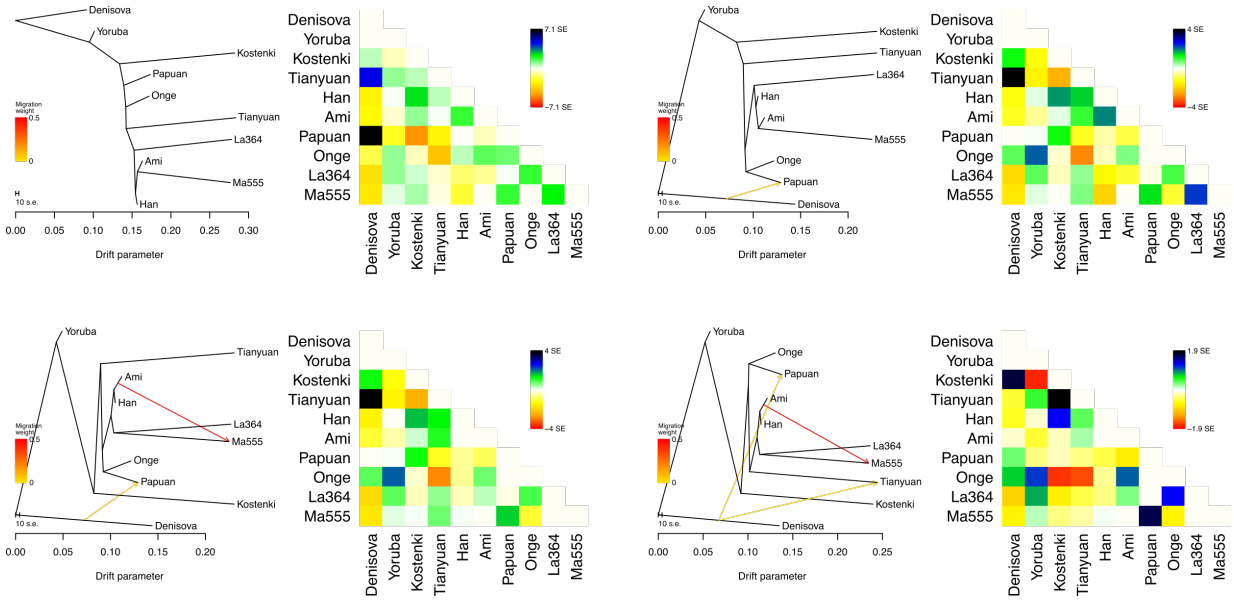

Fig. S33.

TreeMix admixture graphs modelling relationships between the "base populations" and the Laotian sample from Group 2 (La364) and a Group 6 Sample from Borneo (Ma555) (144,272 SNPs)

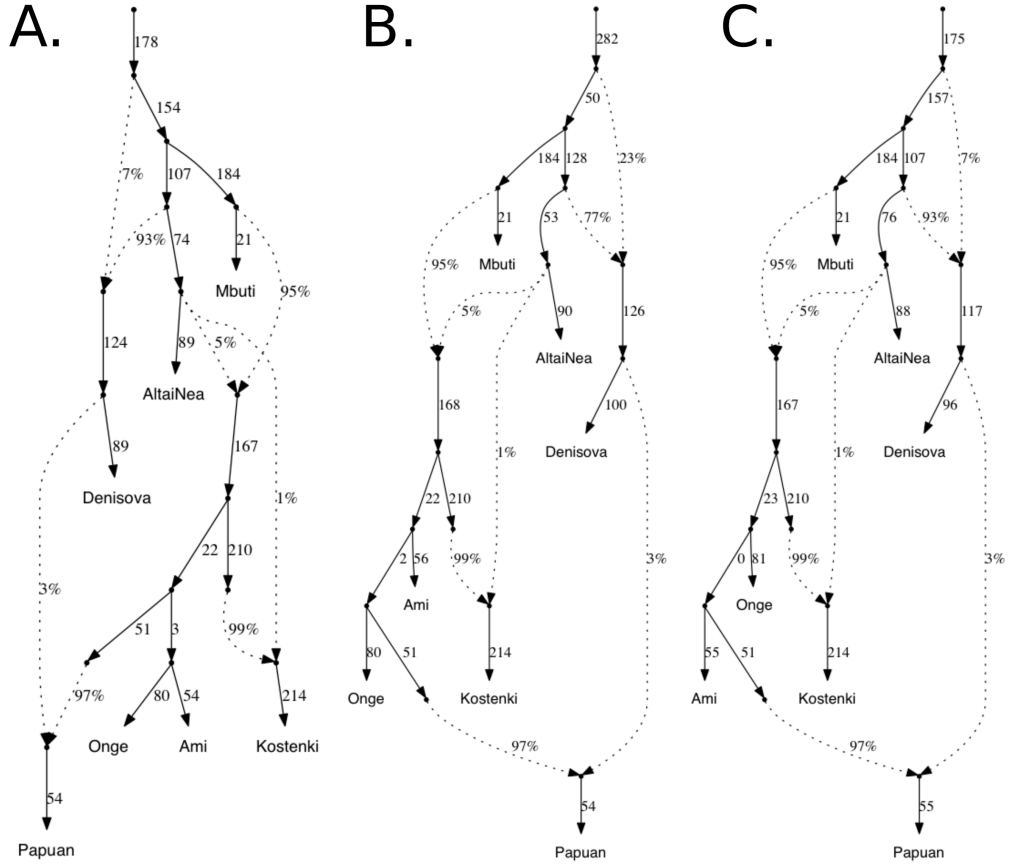

Fig. S34.

Without including Tiányuán, we are unable to resolve the Papuan-Önge-Amis trifurcation: all three possibilities for the graph give good fits: A) worst-fitting Z = -1.774; B) worst-fitting Z = -2.353; C) worst-fitting Z = -2.450.

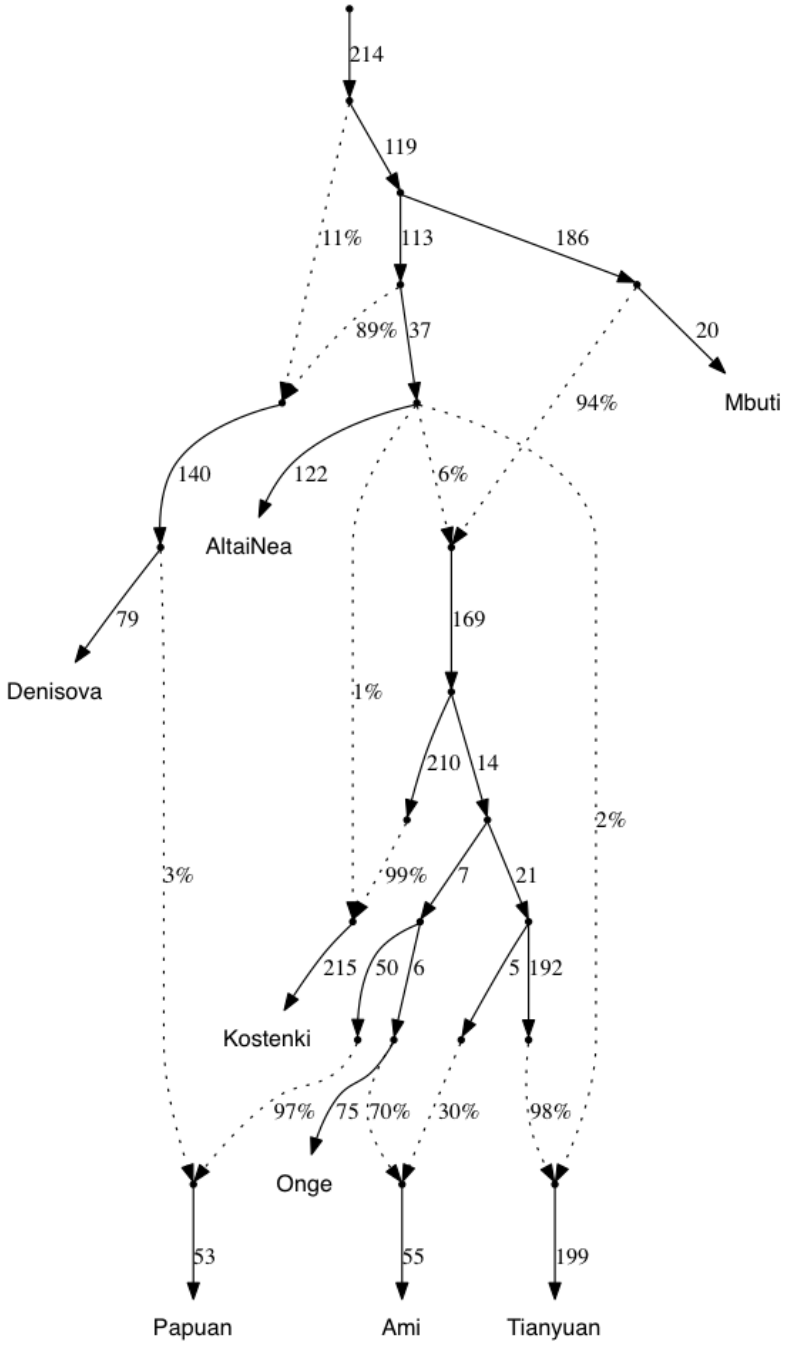

Fig. S35.
Including Tiányuán, we find that the best fit is found when modeling Amis as a mixture of a sister group to Önge and a sister group to Tiányuán (worst-fitting Z = -3.564).

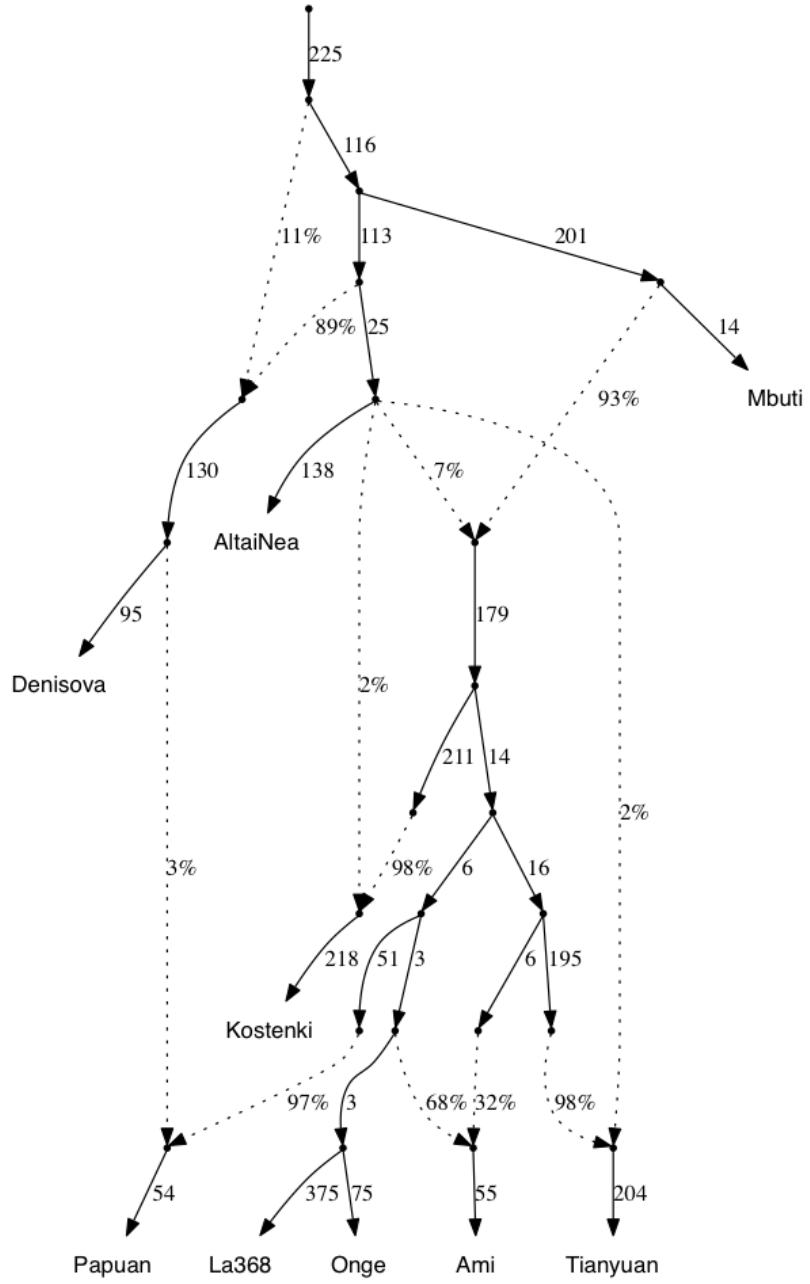

Fig. S36.
La368 is best modeled as a sister group to Önge (worst-fitting Z = 3.372).

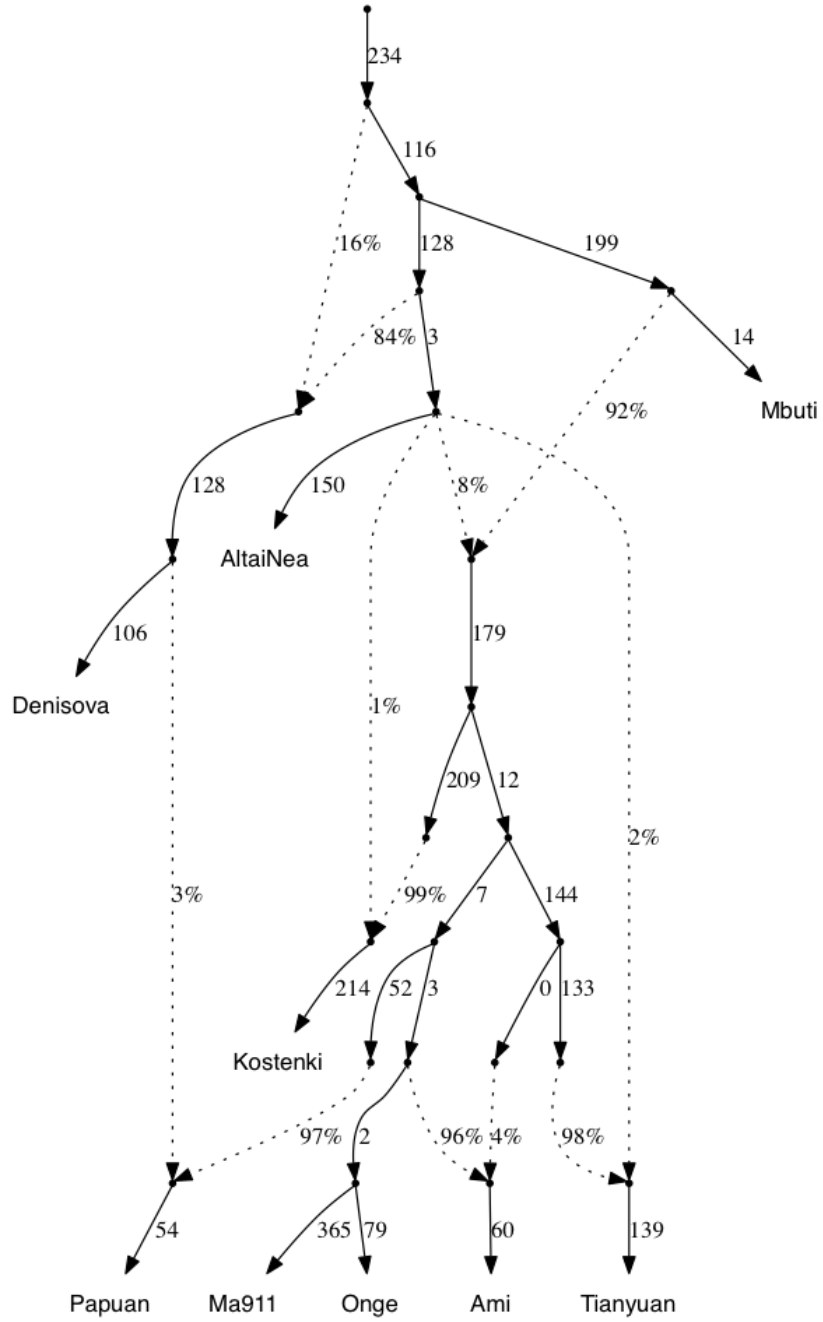

Fig. S37.
Ma911 is best modeled as a sister group to Önge (worst-fitting Z = 3.803).

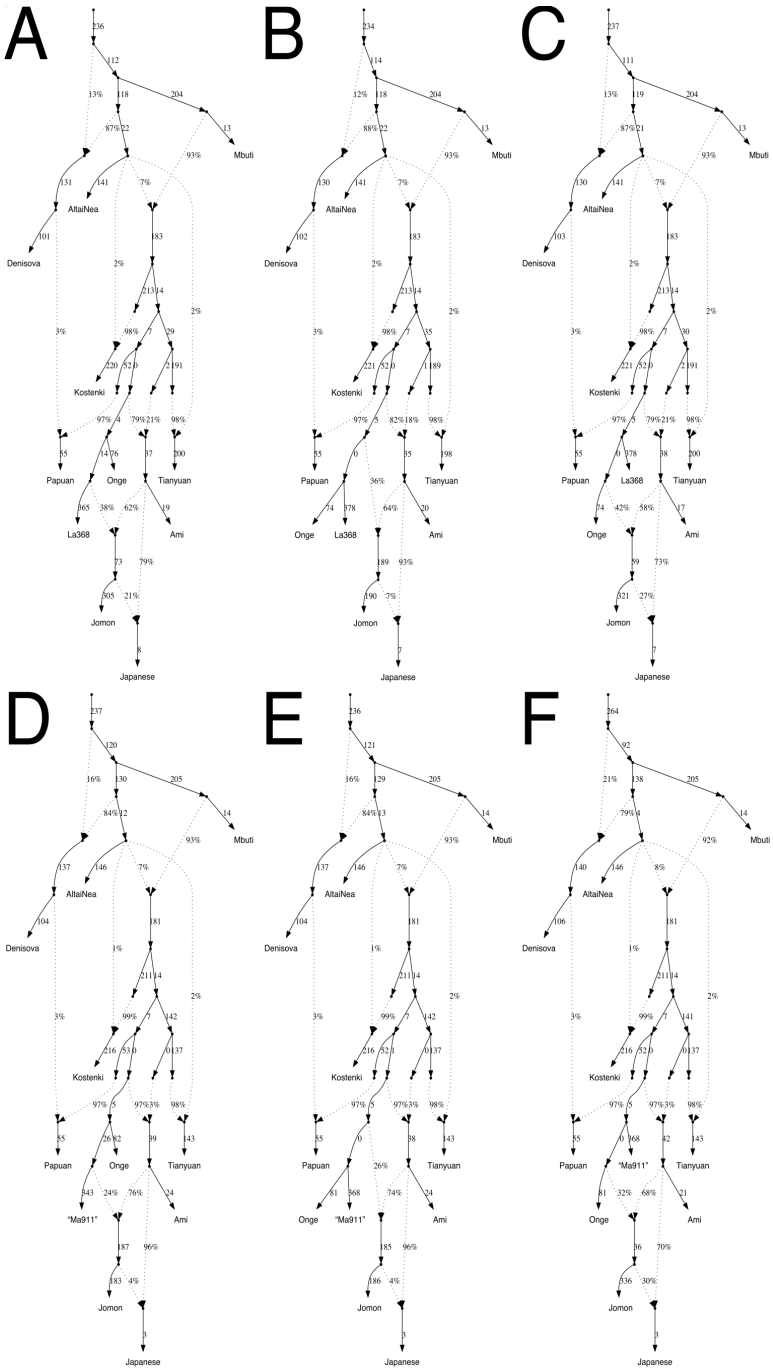

Fig. S38.

Jōmon are best-fitted as a mixture of a group related to Group 1 and a group related to East Asians (Amis). A) La368 as a representative of Group 1 (worst-fitting Z = 3.336). D) Ma911 as a representative of Group 1 (worst-fitting Z = 3.363). Attempting to model the Group 1 ancestry in Jōmon as coming prior to the Group 1/Onge split resulted in a equally good fit, but with branch lengths of 0 to the Group1/Onge node (B, E). Similarly, when coming from the Onge branch, the fit was unchanged for La368 (C), and worse for Ma911 (F) (Z=3.366) In turn, Japanese are best modeled as a mixture of Jōmon and an additional East Asian component.

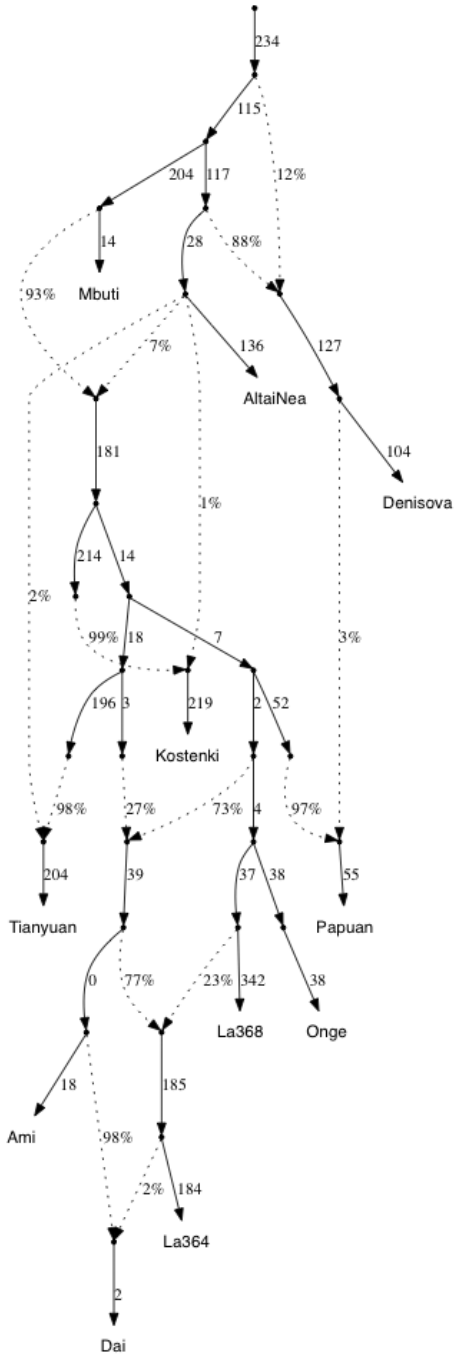

Fig. S39.

La364 is best modeled as a mixture of a sister group to La368 (Group 1) and an East Asian component (related to Amis). In turn, present-day Dai is best modeled as a mixture of a sister group to La364 (Group 2) and an additional East Asian component (worst-fitting Z = 3.66).

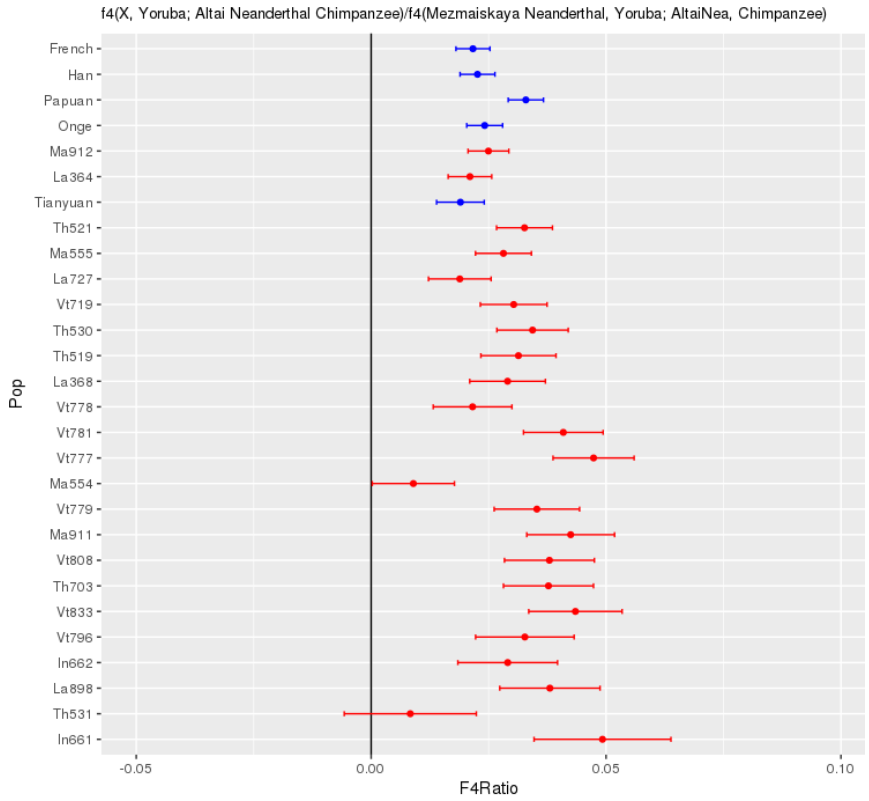

Fig. S40.

We computed an F4 ratio of the form f4(X, Yoruba; Altai Neanderthal Chimpanzee)/f4(Mezmaiskaya Neanderthal, Yoruba; AltaiNea, Chimpanzee) (*96*). This serves to measure the proportion of Neanderthal ancestry in population X, using an African population (Yoruba) as a baseline non-admixed population, but this statistic may be confounded by extra Denisovan introgression that may be present in population X. The red-colored individuals are the samples from this study, and the individuals are ordered based on the size of the standard error.

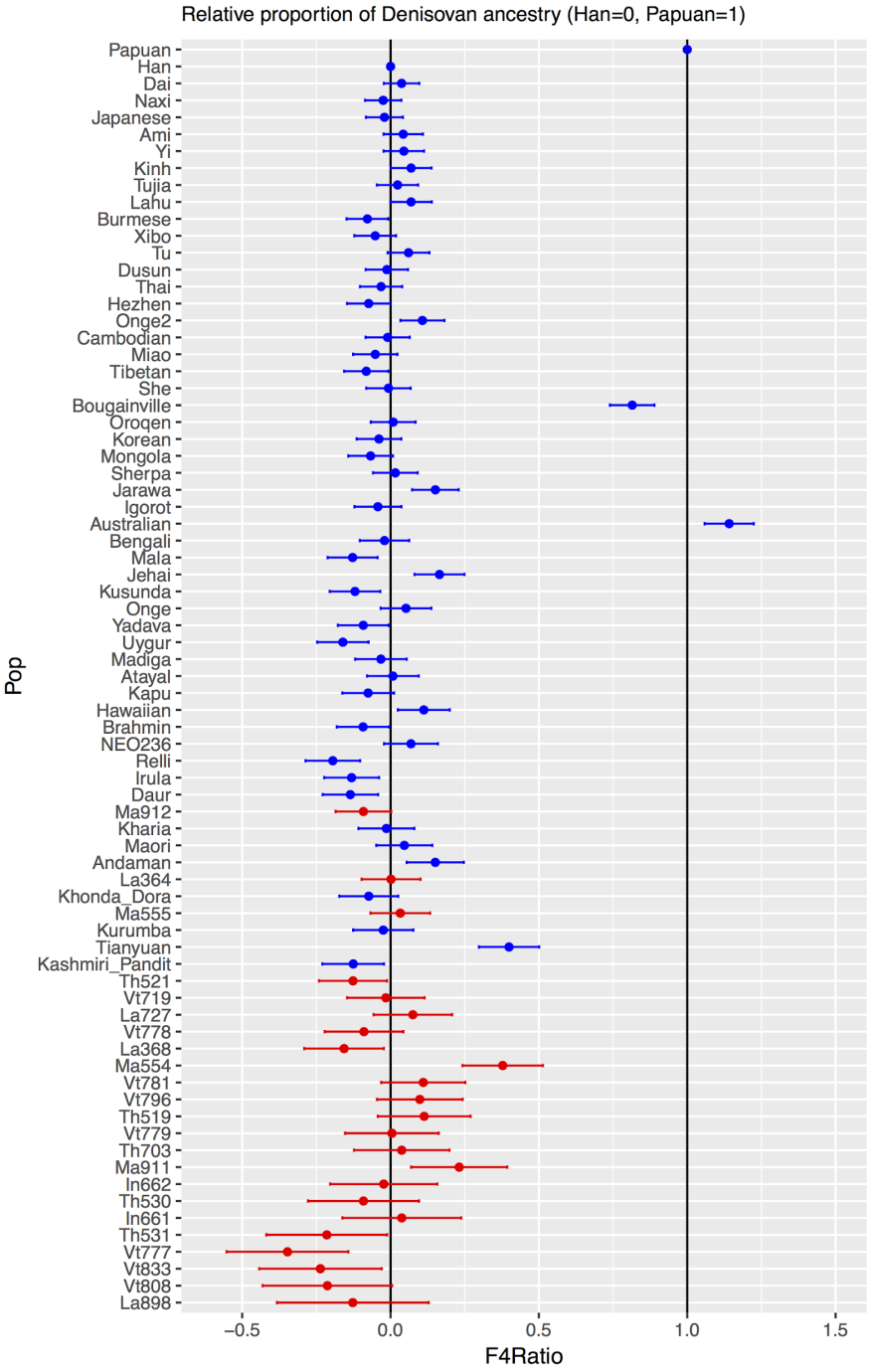

Fig. S41.

We computed an F4 ratio of the form f4(Denisova, Mbuti; X, Hàn)/f4(Denisova, Mbuti; Papuan, Hàn). This serves to measure the amount of Denisovan ancestry in population X as a relative proportion of that ancestry found in Papuans, using Hàn as a baseline non-admixed population. The red-colored individuals are the samples from this study, and the individuals are ordered based on the size of the standard error.

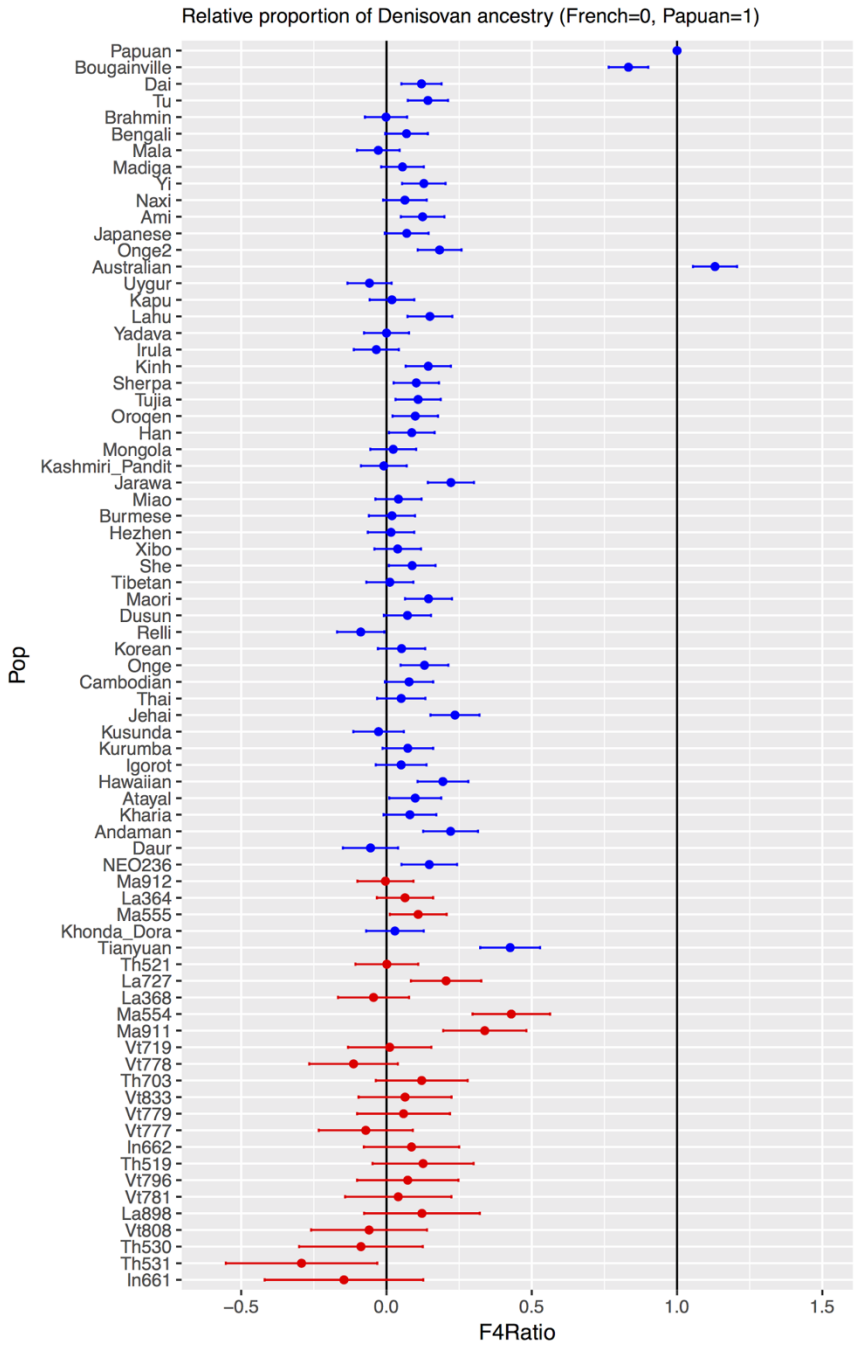

Fig. S42.

We computed an F4 ratio of the form f4(Denisova, Mbuti; X, French)/f4(Denisova, Mbuti; Papuan, French). This serves to measure the amount of Denisovan ancestry in population X as a relative proportion of that ancestry found in Papuans, using French as a baseline non-admixed population. The red-colored individuals are the samples from this study, and the individuals are ordered based on the size of the standard error.

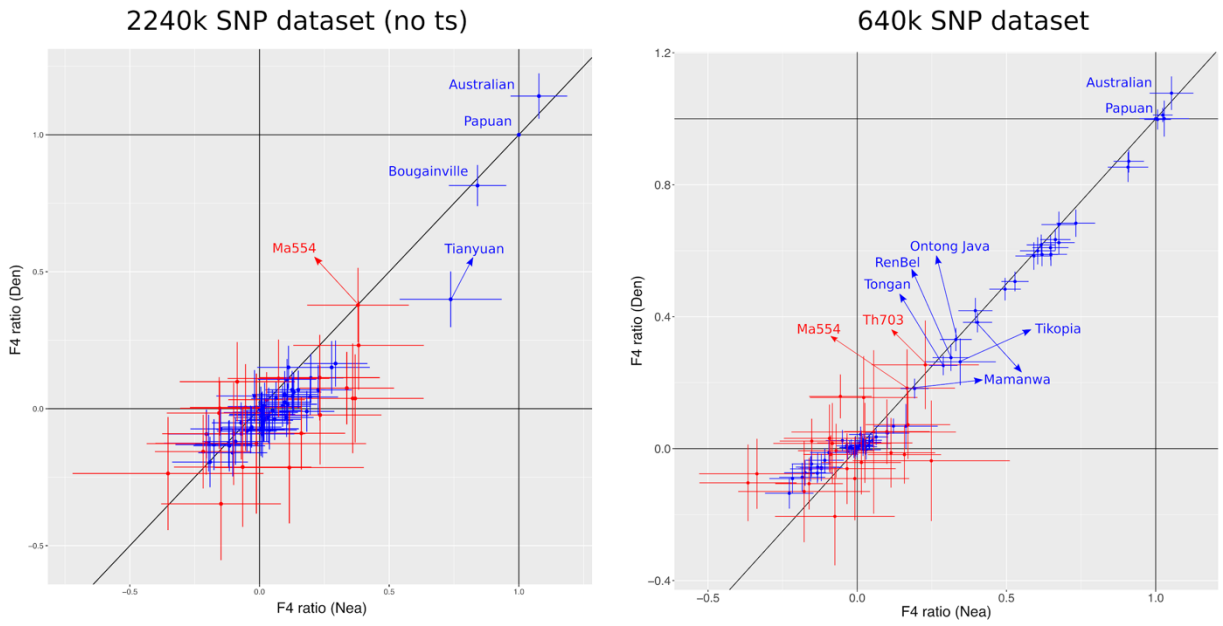

Fig. S43.

We compared two F4 ratios. X-axis: f4(Denisova, Mbuti; X, Hàn)/f4(Denisova, Mbuti; Papuan, Hàn). Y-axis: f4(Altai Neanderthal, Mbuti; X, Hàn)/f4(Denisova, Mbuti; Papuan, Hàn). The X-axis ratio serves to measure the amount of Denisovan ancestry in population X as a relative proportion of that ancestry found in Papuans, using Han as a baseline non-admixed population. The Y-axis ratio serves to measure the amount of Altai Neanderthal ancestry in population X as a relative proportion of that ancestry found in Papuans, using Hàn as a baseline non-admixed population, but is confounded by Denisovan ancestry found in Southeast Asian and Oceanian populations. When computing these two ratios in the 2240k dataset (removing transitions), we observe that the high Altai Neanderthal ancestry in Ma554 can be entirely explained by high Denisovan ancestry (and shared ancestry between Neanderthals and Denisovans), while this is not the case in Tiányuán, who has high Altai Neanderthal ancestry that cannot be explained by high Denisovan ancestry. When computing these ratios in the 640k SNP dataset, we find that the levels of Denisovan ancestry in Ma554 is compared to the levels in Mamanwa, but that Th503 shows slightly higher levels of Denisovan ancestry. Differences across these datasets may be attributable to the low coverage of the ancient genomes. The red-colored individuals are the samples from this study.

Table S1. Results of capture stringency test

Sample	Capture system	Target region	Stringency	No of reads (trimmed)	Endogenous DNA content (%)§	Fold increase*	Clonality (%)
R23	No capture	NA	NA	1,000,000	0.39	1	0.05
R23	Agilent	Exome+UTR	Low	1,000,000	1.24	3.2	0.01
R23	Agilent	Exome+UTR	High	1,000,000	5.83	14.8	15.5
R23	Nimblegen	Exome+UTR	Low	1,000,000	0.49	1.2	1.7
R23	Nimblegen	Exome+UTR	High	1,000,000	3.54	9	7.4
R23	MYcroarray	Whole genome	Low	1,000,000	2.96	7.5	0.5
R23	MYcroarray	Whole genome	High	1,000,000	1.76	4.5	13.4

§ Calculated as the proportion of unique mapping reads (hg19+rCRS). Mean of duplicate reactions.

*Calculated as fold increase in unique reads relative to shotgun sequencing

Table S2. Comparison of capture systems

Sample ID	Age (yr BP)	Endo DNA (%)*	Extracts in pool (n)	Libraries in pool (n)	Pre-capture PCR (cycl.)	DNA in pool (ng/rxn)	post capture€							
							On-target reads (%)		DoC ≥1 (%)		Fold difference (% on-target reads)		Endo DNA (%)	Fold difference
							Agilent	Nimblegen	Agilent	Nimblegen	Agilent	Nimblegen	MYbaits	MYbaits
R23	750-550#	0.39	2	2	15	240	65.2	85.2	3.65	1.77	19.15	19.26	2.96	7.52
K	562±71§	1.67	2	2	8 - 11	152.4	62.9	81.1	5.72	5.34	20.76	20.78	9.75	5.84
LL	1.7-1.9 K#	1.01	3	6	5 - 7	289.8	15.8	78.8	0.21	5.1	4.75	18.47	7.63	7.54
Um	1513±70§	0.01	2	2	8 - 11	140.5	56.9	70.3	0.02	6.36	8.11	10.01	-	-
S60	6372±31§	0.27	2	4	7 - 11	270.1	54.9	82.1	0.49	1.42	24.13	28.22	3.81	14.21
S48	> 7 K#	0.34	2	3	7 - 11	120.6	58.9	-	1.11	-	19.22	-	4	11.67
Skhul	80-120 K#	0.01	7	8	9 - 15	213	62.1	79.1	0.9	0.71	10.35	6.59	1.14	228.26
USR2	> 11.5 K§	5.92	2	4	14 - 21	297.2	16.3	-	0.91	-	4.76	-	18.19	3.07

§Direct 14C dating.

#Approximate age based on contextual information.

*Calculated as the proportion of unique mapping reads (hg19+rCRS).

$On-target reads.

€Calculated on one million trimmed reads.

Table S3. Meta-data for 25 main ancient genomes, together with mtDNA and limited nuclear DNA from an additional set of 16 individuals.

SampleID	Short name	Country	Region	Site	Alias	Period	Group	Uncalibrated 14C (BP)	Calendar years BP FROM	(95.4% prob. range) TO	OxA Number	material	Captured	USER treated	Sequencer	Average fragment length, bp	Nuclear coverage	Mitochondrial coverage	MI haplogroup	Haplogrep call confidence	MAP authentic aDNA material (contamMix)	Angsd - Sex Chromosome Contamination Method 1	SE	Angsd - Sex Chromosome Contamination Method 2	SE	S' C to T frequency	Genetic sex assignment
020368	La368	Laos	Bolikhamxay, Northern	Pha Faen	Pha Faen L. Petrous	Hunter-gatherer, Hoabinhian, flexed burial	1	7040 ± 38	7950	7794	X-2732-46	petrous	No	Yes	HiSeq2500/HiSeq4000	36	0.603	61.1	M5	0.997	0.994	0.0063	0.0022	0.0066	0.0034	0.65	XY
020364	La364	Laos	Huapan, Northeast	Tam Pa Ping	Jack P DNA	Late Neolithic-Bronze Age	2	2860 ± 29	3071	2893	35519	petrous	No	Yes	HiSeq2500	58	1.341	221.4	F1a1a1	0.970	0.998	0.0073	0.0008	0.0066	0.0016	0.06	XY
017727	La727	Laos	Huapan, Northeast	Tam Hang	TH 20537	Recent intrusion into Hoabinhian	2	2320 ± 30	2378	2184	X-2690-33	bone	Yes	No	HiSeq2500	68	0.942	187.2	N9a5	0.925	0.985	NA	NA	NA	NA	NA	XX
019698	La698	Laos	Huapan, Northeast	Tam Hang	20539	Recent intrusion into Hoabinhian	2	~2-10ka	NA	NA	NA	tooth	No	Yes	HiSeq2500	48	0.085	484.9	N9a5	0.925	1.000	0.0055	0.0036	0.0120	0.0069	0.30	XY
019911	Mal911	Malaysia	Kelantan, West Peninsular	Gua Cha Cave	As.33.6.11.SEA.180	Phase 1 - Hoabinhian	1	3672 ± 33	4115	4150	X-2711-57	petrous	Yes	Yes	HiSeq2500	40	0.131	49.0	M21b1a	0.978	0.945	0.0262	0.0228	0.0203	0.0215	0.02	XY
019912	Mal912	Malaysia	Kelantan, West Peninsular	Gua Cha Cave	As.33.6.1	Phase 2 - Late Neolithic farmer cemetery	2	2459 ± 31	2690	2349	X-2732-17	petrous	No	No	HiSeq2500	53	1.729	77.0	M13c	0.888	0.988	0.0162	0.0018	0.0143	0.0030	0.35	XY
019554	Mal554	Malaysia	Sabah, Northeast Borneo	Sugu-Hujungit	SUPUHUJUNGIH.L4/3	Historical	6	383 ± 23	505	326	35573	tooth	Yes	Yes	HiSeq2500	71	0.343	140.1	F3c1a+16093	0.958	0.991	0.0504	0.0041	0.0122	0.0077	0.20	XY
019555	Mal555	Malaysia	Sabah, Northeast Borneo	Kinabatangan	KINABATANGAN RP3	Historical	6	299 ± 23	452	299	35572	tooth	No	Yes	HiSeq2500	64	0.549	110.3	B4b1a2	0.978	0.997	0.0129	0.0040	0.0086	0.0047	0.22	XY
017693	Vi693	Vietnam	Thanh Hoa, Northern	Mai Da Dieu	89.MDD.M7	Late Neolithic (upper layer)	2	3788 ± 30	4241	4009	35660	petrous	No	Yes	HiSeq2500/HiSeq4000	38	0.128	10.3	M3D	0.581	0.994	NA	NA	NA	NA	0.09	XX
019880	Vi880	Vietnam	Quang Ninh, Northeast	Hon Hai Co Tien	04.HHCT.M3.Lm.A2	Late Neolithic (Ha Long Culture)	2	~4kya	NA	NA	NA	petrous	No	Yes	HiSeq2500	38	0.103	11.0	F1f	0.893	0.983	NA	NA	NA	NA	0.04	XX
020777	Vi777	Vietnam	Thanh Hoa, Northern	Mai Da Dieu	89 MDD M5-M7 (mixed)	Late Neolithic (upper layer)	3	2275 ± 24	2349	2180	35585	petrous	No	No	HiSeq2500	42	0.147	25.9	F1a1'4	0.894	0.998	NA	NA	NA	NA	0.42	XX
020608	Vi608	Vietnam	Thanh Hoa, Northern	Nui Nap	77.NN.M14.KA	Bronze Age (Dong Son Culture)	3	2255 ± 24	2343	2158	35582	petrous	No	No	HiSeq2500	36	0.114	12.8	M7b1a1	0.644	0.944	NA	NA	NA	NA	0.04	XX
020781	Vi781	Vietnam	Thanh Hoa, Northern	Nui Nap	78.NN.M1A	Bronze Age (Dong Son Culture)	3	2248 ± 24	2340	2158	35580	petrous	No	No	HiSeq2500	37	0.138	16.9	F1a	0.734	0.996	NA	NA	NA	NA	0.48	XX
020779	Vi779	Vietnam	Thanh Hoa, Northern	Nui Nap	NN.M43	Bronze Age (Dong Son Culture)	3	2242 ± 24	2338	2157	35579	petrous	No	No	HiSeq2500	37	0.140	16.7	M7c1b2b	0.723	0.997	NA	NA	NA	NA	0.51	XX
020778	Vi778	Vietnam	Lai Chau, Northwest	Nam Tun	72.NT.TS2	Late Neolithic	4.1	2549 ± 28	2756	2593	X-2737-47	petrous	No	No	HiSeq2500	53	0.147	19.0	F1a1a1	0.970	0.999	0.0051	0.0030	0.0091	0.0059	0.32	XY
020796	Vi796	Vietnam	Thanh Hoa, Northern	Nui Nap	77.NN.M16.KB	Bronze Age (Dong Son Culture)	3	2143 ± 24	2303	2041	35581	petrous	No	No	HiSeq2500	39	0.169	13.8	F1a2	0.779	0.998	NA	NA	NA	NA	0.45	XX
019719	Vi719	Vietnam	Quang Ninh, Northeast	Hon Hai Co Tien	5_04.HHCT.M19	Intrusive burial	3.1	223 ± 23	307	0	35574	tooth	No	No	HiSeq2500	72	0.257	34.5	M7c2	0.955	0.994	NA	NA	NA	NA	0.07	XX
017692	Hi692	Indonesia	Aceh, Northwest Sumatra	Loyang Ujung Cave	U1 T1-3	Late Neolithic - Iron Age, flexed burials	5	2152 ± 26	2304	2040	35574	tooth	No	Yes	HiSeq2500	66	0.143	179.0	M20	0.959	0.991	0.0051	0.0030	0.0091	0.0030	0.24	XY
017561	Hi661	Indonesia	Aceh, Northwest Sumatra	Loyang Ujung Cave	NA	Late Neolithic - Iron Age, flexed burials	5	1917 ± 25	1935	1818	35441	long bone	Yes	Yes	HiSeq2500	69	0.105	163.8	F1a1a	0.984	1.000	NA	NA	NA	NA	0.35	XY
019534	PH534	Philippines	Cagayan, Northern Luzon	Nagsabaran	Sample #5	Red-slipped pottery - Austronesian	6	1877 ± 27	1880	1730	34843	tooth	Yes	Yes	HiSeq2500	49	0.029	50.5	B5b1a	0.884	0.993	NA	NA	NA	NA	0.45	XX
019519	Th519	Thailand	Mae Hong Son, Northern	Long Long Rak	LLR13_C5_2	Iron Age	4	1792 ± 25	1810	1623	34834	tooth	No	Yes	HiSeq2500	52	0.161	26.6	B5a1d	0.681	0.996	0.0479	0.0168	0.0350	0.0217	0.29	XY
019521	Th521	Thailand	Mae Hong Son, Northern	Long Long Rak	LLR13_C4_A	Iron Age	4	1765 ± 26	1813	1620	34835	tooth	No	Yes	HiSeq2500	43	0.422	58.2	F1f	0.888	0.996	0.0062	0.0044	0.0041	0.0061	0.43	XY
014703	Th703	Thailand	Mae Hong Son, Northern	Long Long Rak	LLR13 C5/247	Iron Age	4	1758 ± 25	1732	1571	35413	tooth	Yes	No	HiSeq2500	58	0.163	80.3	B5a1d	0.881	0.992	0.0021	0.0063	0.0031	0.0049	NA	XY
018530	Th530	Thailand	Mae Hong Son, Northern	Long Long Rak	LLR13_C2_3B3A	Iron Age	4	1799 ± 26	1730	1570	34838	tooth	No	Yes	HiSeq2500	51	0.196	91.7	G2b1a	0.967	0.993	0.0159	0.0103	0.0105	0.0141	0.25	XY
018531	Th531	Thailand	Mae Hong Son, Northern	Long Long Rak	LLR13_C2_3B3B	Iron Age	3.1	1687 ± 24	1691	1537	34839	tooth	Yes	Yes	HiSeq2500	58	0.066	125.7	G2b1a	0.987	1.000	NA	NA	NA	NA	0.23	XX
TKA-18884	Ik002	Japan	Aichi, Central Honshu	Iwasaku	Jomon	Jomon	NA	2681 ± 16	2720	2418	NA	petrous	No	No	MSeq + HiSeq2500	66	1.85	146.0	N9b1	NA	0.930	NA	NA	NA	NA	NA	>0.10	XX
019739	Vi739	Vietnam	Quang Ninh, Northeast	Hon Hai Co Tien	25. 04.HHCT.M1	Late Neolithic (Ha Long Culture)	NA	3755 ± 69	4381	3920	X-2731-19	petrous	Yes	Yes	HiSeq2500	44	0.009	14.5	F4b	0.897	0.981	NA	NA	NA	NA	0.53	XY
019743	Vi743	Vietnam	Quang Ninh, Northeast	Hon Hai Co Tien	28. 04.HHCT.M21	Late Neolithic (Ha Long Culture)	NA	NA	~4kya	NA	NA	petrous	Yes	Yes	HiSeq2500	40	0.008	14.9	F1f	0.670	0.985	NA	NA	NA	NA	0.01	consistent with XX but not XY
019744	Vi744	Vietnam	Quang Ninh, Northeast	Hon Hai Co Tien	30. 04.HHCT.M21b	Late Neolithic (Ha Long Culture)	NA	NA	~4kya	NA	NA	petrous	Yes	Yes	HiSeq2500	40	0.006	11.0	F1	0.775	0.989	NA	NA	NA	NA	0.54	NotAssigned
2A	Th387	Thailand	Mae Hong Son, Northern	Long Long Rak	No.387, coffin No.2	Iron Age	NA	1870 ± 35	NA	NA	NA	tooth	Yes	No	MSeq + HiSeq2500	68	0	47.6	G2b1a	0.967	0.992	0.0031	0.0000	0.0091	0.0000	0.34	XY
2B	Th391	Thailand	Mae Hong Son, Northern	Long Long Rak	No.391, coffin No.2	Iron Age	NA	1870 ± 30	NA	NA	NA	tooth	Yes	No	MSeq + HiSeq2500	68	0	15.5	F1c1a2	0.888	0.996	0.0051	0.0000	0.0091	0.0000	0.41	XY
2C	Th392	Thailand	Mae Hong Son, Northern	Long Long Rak	No.392, coffin No.2	Iron Age	NA	1870 ± 30	NA	NA	NA	tooth	Yes	No	MSeq + HiSeq2500	67	0.01	10.7	F1c1a2	0.620	0.939	NA	NA	NA	NA	0.33	XY
2D	Th393	Thailand	Mae Hong Son, Northern	Long Long Rak	No.389, coffin No.2	Iron Age	NA	1870 ± 30	NA	NA	NA	tooth	Yes	No	MSeq + HiSeq2500	62	0	4.1	F1	0.554	0.985	NA	NA	NA	NA	0.42	XY
6A	Th126	Thailand	Mae Hong Son, Northern	Long Long Rak	No.126, Coffin No.6	Iron Age	NA	1636 ± 44	NA	NA	NA	tooth	Yes	No	MSeq + HiSeq2500	61	0	0.3	NA	NA	NA	NA	NA	NA	NA	0.16	XY
6B	Th127	Thailand	Mae Hong Son, Northern	Long Long Rak	No.127, Coffin No.6	Iron Age	NA	1636 ± 44	NA	NA	NA	tooth	Yes	No	MSeq + HiSeq2500	64	0	0.9	NA	NA	NA	NA	NA	NA	NA	0.33	XY
6C	Th238	Thailand	Mae Hong Son, Northern	Long Long Rak	No.238, Coffin No.6	Iron Age	NA	1638 ± 44	NA	NA	NA	tooth	Yes	No	MSeq + HiSeq2500	65	0	4.5	F1	0.591	0.994	NA	NA	NA	NA	0.44	XY
6D	Th249	Thailand	Mae Hong Son, Northern	Long Long Rak	No.248, Coffin No.6	Iron Age	NA	1638 ± 44	NA	NA	NA	tooth	Yes	No	MSeq + HiSeq2500	62	0	1.4	NA	NA	0.141	NA	NA	NA	NA	0.38	XY
018522	Th522	Thailand	Mae Hong Son, Northern	Long Long Rak	LLR13_C4_B	Iron Age	NA	1789 ± 25	1814	1623	34836	tooth	Yes	Yes	HiSeq2500	49	0.058	52.1	G2b1a	0.935	0.986	NA	NA	NA	NA	0.41	XY
018523	Th523	Thailand	Mae Hong Son, Northern	Long Long Rak	LLR13_C3D	Iron Age	NA	1761 ± 25	1737	1571	34837	tooth	Yes	Yes	HiSeq2500	60	0.025	71.0	N9	0.940	0.996	NA	NA	NA	NA	0.27	XX
019533	PH533	Philippines	Cagayan, Northern Luzon	Nagsabaran	Sample #2	Red-slipped pottery - Austronesian	NA	1828 ± 26	1860	1702	34842	tooth	Yes	Yes	HiSeq2500	52	0.004	70.2	F1a4a1	0.976	0.998	NA	NA	NA	NA	0.44	NotAssigned
019525	MaS25	Malaysia	Kelantan, West Peninsular	Gua Cha Cave	As.33.6.2	Phase 1 - Hoabinhian	NA	3224 ± 27	3551	3379	35787	petrous	No	Yes	HiSeq2500	47	0.012	8.0	N9a9a	0.651	0.958	NA	NA	NA	NA	0.29	XY
019548	MaS48	Malaysia	Melaka, West Peninsular	Kota Melaka	KM1 RP3	Historical	NA	400 ± 23	510	332	35571	tooth	Yes	Yes	HiSeq2500	54	0.021	101.7	B5a1a	0.949	1.000	NA	NA	NA	NA	0.09	Not Assigned
JHF05	Jehai	Malaysia	Northern Perak, West Peninsular	NA	JHF05	Present day	NA	NA	NA	NA	NA	saliva	NA	NA	HiSeq1500	90	26.18	1992.99	M21a	1.000	NA	NA	NA	NA	NA	NA	XX
JHM06	Jehai	Malaysia	Northern Perak, West Peninsular	NA	JHM06	Present day	NA	NA	NA	NA	NA	saliva	NA	NA	HiSeq1500	90	29.91	1950.90	M17a	0.946	NA	NA	NA	NA	NA	NA	XY

Table S4. Outgroup f3(Group1,X;Yoruba)

Apop	Bpop	Opop	f3	SE	Z	nSNPs	nBlocks	Cat
Group1	Group3	Yoruba	0.1835884544	0.0062627483	29.31435958	13124	545	ancient
Group1	Group3.1	Yoruba	0.1732964344	0.0089669496	19.32613009	7439	540	ancient
Group1	Group4.1	Yoruba	0.1702177706	0.0112170153	15.17496106	4051	527	ancient
Group1	Jomon	Yoruba	0.1689837326	0.0053435121	31.62409446	21332	544	ancient
Group1	Group4	Yoruba	0.1681810729	0.0056962745	29.52474841	16493	548	ancient
Group1	Group2	Yoruba	0.1672398341	0.0041777856	40.03073657	25516	548	ancient
Group1	Onge_sgdpC	Yoruba	0.1668799723	0.0040412929	41.29370852	25980	548	SGDP
Group1	Negrito_Kampun	Yoruba	0.1654486678	0.0035500032	46.60521651	26068	548	Negrito
Group1	Amis	Yoruba	0.1641251528	0.0035971964	45.62585305	26062	548	Austronesian
Group1	Jehai	Yoruba	0.1634812115	0.0037062221	44.10993396	26040	548	Negrito
Group1	Negrito_RPS_Ba	Yoruba	0.1630396321	0.0034639815	47.06711994	26074	548	Negrito
Group1	Jinuo	Yoruba	0.1627501193	0.0034465995	47.22049002	26076	548	Trans-Himalayan
Group1	Hmong_Miao	Yoruba	0.1624932453	0.0036600950	44.39590905	26076	548	HmongMien
Group1	Wa	Yoruba	0.1623551313	0.0034295661	47.33984674	26080	548	AustroAsiatic
Group1	Mentawai	Yoruba	0.1617803351	0.0036356953	44.49777068	26062	548	Austronesian
Group1	Bidayuh	Yoruba	0.1617629782	0.0034504765	46.8813447	26081	548	Austronesian
Group1	Lawa	Yoruba	0.1617226561	0.0034670911	46.64505496	26064	548	AustroAsiatic
Group1	Javanese_Java	Yoruba	0.1614645232	0.0033760529	47.82641978	26074	548	Austronesian
Group1	Paluang	Yoruba	0.1613696085	0.0034771388	46.40873357	26058	548	AustroAsiatic
Group1	Atayal	Yoruba	0.1613577781	0.0037587792	42.92824027	26044	548	Austronesian
Group1	Malay	Yoruba	0.1613503264	0.0034540153	46.71384288	26073	548	Austronesian
Group1	Plang	Yoruba	0.1611505655	0.0034713341	46.42323659	26074	548	AustroAsiatic
Group1	Han_Singapore	Yoruba	0.1611145378	0.0034908660	46.1531717	26075	548	Trans-Himalayan
Group1	Flores_Manggara	Yoruba	0.1610185981	0.0033051368	48.71768007	26075	548	Austronesian
Group1	Kambera	Yoruba	0.1609999635	0.0033512689	48.04149364	26075	548	Austronesian
Group1	Mlabri	Yoruba	0.1609879348	0.0037488196	42.94363344	26001	548	AustroAsiatic
Group1	Temuan	Yoruba	0.1609704576	0.0034136424	47.15504436	26050	548	ProtoMalay
Group1	Han	Yoruba	0.1607847047	0.0034484625	46.62504017	26077	548	Trans-Himalayan
Group1	Kampung_Parit_	Yoruba	0.1607826444	0.0033160550	48.48612134	26077	548	ProtoMalay
Group1	Ryukyuan	Yoruba	0.1606183677	0.0034549639	46.48915983	26081	548	Japonic
Group1	Hmong	Yoruba	0.1606048106	0.0035481070	45.26492921	26075	548	HmongMien
Group1	Javanese_Jakart	Yoruba	0.1605948399	0.0033851866	47.44046844	26083	548	Austronesian
Group1	Hakka_Taipei	Yoruba	0.1605410675	0.0034478831	46.5622127	26083	548	Trans-Himalayan
Group1	Zhuang	Yoruba	0.1605362507	0.0034454847	46.59322738	26079	548	Kradai
Group1	Korean	Yoruba	0.1605281818	0.0034365727	46.711708	26083	548	Koreanic
Group1	Japanese	Yoruba	0.1604826129	0.0034311634	46.77206989	26085	548	Japonic
Group1	Han_Guangzhou	Yoruba	0.1604716053	0.0035002183	45.84617094	26080	548	Trans-Himalayan
Group1	Tai_Yuan	Yoruba	0.1604413395	0.0034780635	46.12950271	26077	548	Kradai
Group1	Ilocano	Yoruba	0.1604095125	0.0035033753	45.78713317	26072	548	Austronesian
Group1	Dayak	Yoruba	0.1602221525	0.0035882043	44.65246059	26070	548	Austronesian
Group1	Lembata	Yoruba	0.1600974909	0.0033918183	47.20108048	26074	548	Austronesian
Group1	Karen	Yoruba	0.160061703	0.0034431560	46.48691534	26077	548	Trans-Himalayan
Group1	Tai_Lue	Yoruba	0.1600506169	0.0034427870	46.48867873	26078	548	Kradai
Group1	Tai_Khuen	Yoruba	0.1599883073	0.0034833068	45.93000722	26070	548	Kradai
Group1	Minanubu	Yoruba	0.1599806206	0.0034405540	46.49850548	26076	548	Austronesian
Group1	Rampasasa_Mar	Yoruba	0.1598314373	0.0033642675	47.50854071	26072	548	Austronesian
Group1	Sunda	Yoruba	0.1598021473	0.0033260121	48.04617185	26081	548	Austronesian
Group1	Tai_Yong	Yoruba	0.1597633056	0.0034961857	45.69645875	26073	548	Kradai
Group1	Lamaholot	Yoruba	0.1597529172	0.0033318231	47.94759836	26084	548	Austronesian
Group1	Batak_Toba	Yoruba	0.1597047142	0.0033359512	47.87381653	26079	548	Austronesian
Group1	Tagalog	Yoruba	0.1596535281	0.0034557710	46.19910458	26080	548	Austronesian
Group1	Minnan_Taipei	Yoruba	0.1595398827	0.0034534963	46.19662833	26080	548	Trans-Himalayan
Group1	Alorese	Yoruba	0.1595096104	0.0034863388	45.75275645	26070	548	Austronesian
Group1	Melanesians	Yoruba	0.1594059375	0.0041961926	37.98823213	25969	548	Papuan
Group1	Jiamao	Yoruba	0.1593873184	0.0034548925	46.13380027	26076	548	Kradai
Group1	Malay_Singapore	Yoruba	0.1593691114	0.0033123665	48.11336822	26086	548	Austronesian
Group1	Batak_Karo	Yoruba	0.1591666876	0.0034187772	46.55661265	26076	548	Austronesian
Group1	Toraja	Yoruba	0.1590734757	0.0034051176	46.71600117	26080	548	Austronesian
Group1	Iraya	Yoruba	0.1590618156	0.0039335326	40.43739597	26035	548	Negrito
Group1	Visaya	Yoruba	0.1583059053	0.0033724576	46.94081429	26080	548	Austronesian
Group1	Htin	Yoruba	0.1580777142	0.0033826953	46.73128967	26059	548	AustroAsiatic
Group1	Ati	Yoruba	0.1579344532	0.0033829797	46.68501389	26074	548	Negrito
Group1	Malay_Sri_Mena	Yoruba	0.1575644563	0.0032291750	48.79402825	26078	548	Austronesian
Group1	Bougainville	Yoruba	0.1573476403	0.0039454697	39.88058492	25983	548	Papuan

Group1	Malay_Bachok	Yoruba	0.1572192867	0.0032627683	48.18585708	26082	548	Austronesian	
Group1	Agta	Yoruba	0.1571722215	0.0036232376	43.37894434	26038	548	Negrito	
Group1	Mamanwa_Alegr	Yoruba	0.1570377715	0.0035643078	44.05842051	26057	548	Negrito	
Group1	Mon	Yoruba	0.1569758282	0.0033106278	47.41572809	26078	548	AustroAsiatic	
Group1	Han_Shanghai	Yoruba	0.1567948256	0.0034510041	45.43455256	26077	548	Trans-Himalayan	
Group1	Pahari	Yoruba	0.1567414014	0.0032169951	48.72292261	26085	548	IndoEuropean	
Group1	Group6	Yoruba	0.1556659805	0.0062664578	24.84114415	14928	546	ancient	
Group1	Spiti	Yoruba	0.1543638537	0.0030866606	50.00998599	26088	548	Trans-Himalayan	
Group1	Ayta	Yoruba	0.1514414326	0.0036436186	41.56346977	26034	548	Negrito	
Group1	Bhili_Rajasthan	Yoruba	0.1489449544	0.0030636025	48.61758529	26083	548	IndoEuropean	
Group1	Group5	Yoruba	0.1486281165	0.0115108380	12.91201527	3888	530	ancient	
Group1	Bengali	Yoruba	0.1478897184	0.0030048972	49.21623191	26059	548	IndoEuropean	
Group1	Tamil_Singapore	Yoruba	0.1476015267	0.0030157617	48.9433657	26092	548	Dravidian	
Group1	Hindi_Haryana	Yoruba	0.1466906911	0.0030284507	48.43753669	26077	548	IndoEuropean	
Group1	Dravidian	Yoruba	0.1462869681	0.0029944603	48.85253161	26083	548	Dravidian	
Group1	Uyghur	Yoruba	0.1455248311	0.0030411123	47.85250186	26087	548	Turkic	
Group1	Hindi_UttarPrade	Yoruba	0.1444541728	0.0031476291	45.8930093	26076	548	IndoEuropean	
Group1	Marathi	Yoruba	0.1441841745	0.0031111806	46.3438775	26069	548	IndoEuropean	
Group1	Hindi_Rajasthan	Yoruba	0.1402446777	0.0029985665	46.77057429	26067	548	IndoEuropean	
Group1	North_European	Yoruba	0.1327545606	0.0030108436	44.09214737	26054	548	IndoEuropean	

Table S5. Outgroup f3(Group2,X;Yoruba)

Apop	Bpop	Opop	f3	SE	Z	nSNPs	nBlocks	Cat
Group2	Mlabri	Yoruba	0.2093127314	0.0030366339	68.92919434	46510	552	AustroAsiatic
Group2	Htin	Yoruba	0.2076213676	0.0026310336	78.91247365	46712	552	AustroAsiatic
Group2	Javanese_Java	Yoruba	0.2072710146	0.0025840386	80.21204159	46749	552	Austronesian
Group2	Plang	Yoruba	0.207009928	0.0026622360	77.75791745	46752	552	AustroAsiatic
Group2	Javanese_Jakart	Yoruba	0.2069534983	0.0025591193	80.86903183	46766	552	Austronesian
Group2	Bidayuh	Yoruba	0.2064072935	0.0026169324	78.87375765	46754	552	Austronesian
Group2	Wa	Yoruba	0.2054123854	0.0026231451	78.30767302	46767	552	AustroAsiatic
Group2	Sunda	Yoruba	0.2052883411	0.0025772407	79.65431342	46755	552	Austronesian
Group2	Group3.1	Yoruba	0.2051600915	0.0060299529	34.02349824	13017	549	ancient
Group2	Tai_Lue	Yoruba	0.2051420748	0.0026623846	77.05200678	46749	552	Kradai
Group2	Lawa	Yoruba	0.2050091288	0.0027050342	75.78799988	46722	552	AustroAsiatic
Group2	Zhuang	Yoruba	0.2046605573	0.0026115736	78.36675755	46749	552	Kradai
Group2	Tai_Yuan	Yoruba	0.204413793	0.0026150764	78.16742823	46755	552	Kradai
Group2	Tai_Khuen	Yoruba	0.2043703733	0.0026439859	77.29631833	46744	552	Kradai
Group2	Hmong_Miao	Yoruba	0.2043019657	0.0027372870	74.6366613	46727	552	HmongMien
Group2	Amis	Yoruba	0.2042426933	0.0027211251	75.05817943	46671	552	Austronesian
Group2	Dayak	Yoruba	0.2038681873	0.0025970068	78.50121285	46725	552	Austronesian
Group2	Jiamao	Yoruba	0.2038514935	0.0026246477	77.6681351	46744	552	Kradai
Group2	Group6	Yoruba	0.2037187974	0.0041309113	49.31570324	26064	550	ancient
Group2	Tai_Yong	Yoruba	0.2034069386	0.0026391271	77.07356546	46748	552	Kradai
Group2	Kampung_Parit_	Yoruba	0.2033619434	0.0025302991	80.37071422	46753	552	ProtoMalay
Group2	Mentawai	Yoruba	0.202902543	0.0027001487	75.14495105	46683	552	Austronesian
Group2	Jinuo	Yoruba	0.2028153496	0.0026579175	76.30611056	46745	552	Trans-Himalayan
Group2	Karen	Yoruba	0.2027137273	0.0026279975	77.13619392	46746	552	Trans-Himalayan
Group2	Han_Guangzhou	Yoruba	0.2025400093	0.0026362593	76.82856125	46755	552	Trans-Himalayan
Group2	Hmong	Yoruba	0.202364158	0.0027061347	74.77977959	46736	552	HmongMien
Group2	Hakka_Taipei	Yoruba	0.2017943548	0.0026109457	77.28783974	46770	552	Trans-Himalayan
Group2	Minnan_Taipei	Yoruba	0.2017721688	0.0026352434	76.5668057	46756	552	Trans-Himalayan
Group2	Han_Singapore	Yoruba	0.2016716998	0.0026203487	76.96368888	46757	552	Trans-Himalayan
Group2	Atayal	Yoruba	0.2014921133	0.0027910491	72.19224969	46607	552	Austronesian
Group2	Group5	Yoruba	0.2013040107	0.0081819447	24.60344312	6912	540	ancient
Group2	Paluang	Yoruba	0.2012058145	0.0026881309	74.84970937	46717	552	AustroAsiatic
Group2	Group4.1	Yoruba	0.2011024231	0.0079058315	25.4372262	6945	536	ancient
Group2	Malay	Yoruba	0.2010835086	0.0025989590	77.37078956	46725	552	Austronesian
Group2	Temuan	Yoruba	0.2006335659	0.0025733937	77.96458407	46645	552	ProtoMalay
Group2	Ilocano	Yoruba	0.2003144251	0.0026189356	76.48696221	46739	552	Austronesian
Group2	Toraja	Yoruba	0.1990826728	0.0025867383	76.96281896	46746	552	Austronesian
Group2	Tagalog	Yoruba	0.1990324386	0.0025728114	77.3599016	46741	552	Austronesian
Group2	Group4	Yoruba	0.1986545871	0.0038257619	51.9254962	28504	552	ancient
Group2	Malay_Singapore	Yoruba	0.1984092676	0.0024980431	79.4258771	46769	552	Austronesian
Group2	Han	Yoruba	0.1983052833	0.0026167003	75.78448545	46746	552	Trans-Himalayan
Group2	Batak_Toba	Yoruba	0.19735404	0.0025296426	78.01656918	46748	552	Austronesian
Group2	Korean	Yoruba	0.1970827321	0.0026249217	75.08137448	46764	552	Koreanic
Group2	Visaya	Yoruba	0.1962345805	0.0025869855	75.85453556	46752	552	Austronesian
Group2	Han_Shanghai	Yoruba	0.1958067793	0.0026156226	74.86048479	46744	552	Trans-Himalayan
Group2	Japanese	Yoruba	0.1956947393	0.0026383849	74.17217178	46767	552	Japonic
Group2	Batak_Karo	Yoruba	0.1956504377	0.0025783949	75.8807109	46736	552	Austronesian
Group2	Negrito_RPS_Ba	Yoruba	0.1956287635	0.0025987653	75.27757893	46731	552	Negrito
Group2	Group3	Yoruba	0.1955183063	0.0046586374	41.96898994	21517	548	ancient
Group2	Minanubu	Yoruba	0.1953023087	0.0025765663	75.79944867	46730	552	Austronesian
Group2	Malay_Bachok	Yoruba	0.1946093538	0.0024674288	78.87131406	46751	552	Austronesian
Group2	Mon	Yoruba	0.1943741882	0.0024980782	77.80948888	46746	552	AustroAsiatic
Group2	Malay_Sri_Mena	Yoruba	0.1938543289	0.0025208711	76.89973752	46745	552	Austronesian
Group2	Ryukyuan	Yoruba	0.1937219635	0.0026289202	73.68879473	46754	552	Japonic
Group2	Rampasasa_Mar	Yoruba	0.1925290745	0.0025197459	76.40813216	46718	552	Austronesian
Group2	Kambera	Yoruba	0.1923860126	0.0025470468	75.53297182	46740	552	Austronesian
Group2	Jehai	Yoruba	0.1920057877	0.0026925832	71.30913893	46623	552	Negrito
Group2	Iraya	Yoruba	0.1909360655	0.0028169122	67.78204439	46599	552	Negrito
Group2	Negrito_Kampun	Yoruba	0.1879862365	0.0025838414	72.75455812	46708	552	Negrito
Group2	Flores_Manggara	Yoruba	0.1864915707	0.0024772227	75.28252203	46731	552	Austronesian
Group2	Agta	Yoruba	0.1854451699	0.0026333329	70.42222773	46622	552	Negrito
Group2	Lamaholot	Yoruba	0.1850823551	0.0025257075	73.27941108	46734	552	Austronesian

Group2	Ati	Yoruba	0.1846788105	0.0025642528	72.02051695	46704	552	Negrito	
Group2	Jomon	Yoruba	0.1840586408	0.0041439911	44.41579079	37281	550	ancient	
Group2	Lembata	Yoruba	0.1838942894	0.0025355365	72.52677677	46731	552	Austronesian	
Group2	Mamanwa_Alegr	Yoruba	0.1834222924	0.0025573906	71.72243935	46665	552	Negrito	
Group2	Alorese	Yoruba	0.1788070256	0.0025053854	71.36907127	46719	552	Austronesian	
Group2	Pahari	Yoruba	0.1772164367	0.0024339028	72.81163386	46749	552	IndoEuropean	
Group2	Spiti	Yoruba	0.1767979076	0.0024036629	73.55353552	46768	552	Trans-Himalayan	
Group2	Bougainville	Yoruba	0.1724890636	0.0029332049	58.80566538	46416	552	Papuan	
Group2	Ayta	Yoruba	0.1717148625	0.0025967384	66.12713164	46575	552	Negrito	
Group2	Melanesians	Yoruba	0.1701324853	0.0029726948	57.23173693	46327	552	Papuan	
Group2	Group1	Yoruba	0.1672398341	0.0041777856	40.03073657	25516	548	ancient	
Group2	Onge_sgdpC	Yoruba	0.166099504	0.0028181730	58.93871825	46314	552	SGDP	
Group2	Uyghur	Yoruba	0.1640472055	0.0023097217	71.02466436	46767	552	Turkic	
Group2	Tamil_Singapore	Yoruba	0.1568368066	0.0022158591	70.77923275	46764	552	Dravidian	
Group2	Bhili_Rajasthan	Yoruba	0.1533547637	0.0022685947	67.59901476	46723	552	IndoEuropean	
Group2	Hindi_Haryana	Yoruba	0.1518092768	0.0022283221	68.12716833	46711	552	IndoEuropean	
Group2	Bengali	Yoruba	0.1517980844	0.0022628395	67.08300935	46670	552	IndoEuropean	
Group2	Dravidian	Yoruba	0.151400543	0.0022073590	68.58899772	46733	552	Dravidian	
Group2	Marathi	Yoruba	0.1507835661	0.0022788730	66.1658481	46695	552	IndoEuropean	
Group2	Hindi_UttarPrade	Yoruba	0.149014724	0.0022572960	66.01470378	46688	552	IndoEuropean	
Group2	Hindi_Rajasthan	Yoruba	0.1471544746	0.0022418458	65.63987215	46683	552	IndoEuropean	
Group2	North_European	Yoruba	0.1401041862	0.0022972931	60.98663882	46664	552	IndoEuropean	

Table S6. Outgroup f3(Group3,X;Yoruba)

Apop	Bpop	Opop	f3	SE	Z	nSNPs	nBlocks	Cat
Group3	Group3.1	Yoruba	0.2052956977	0.0091643599	22.40153155	6390	539	ancient
Group3	Group4.1	Yoruba	0.2050618714	0.0120027465	17.08457908	3549	523	ancient
Group3	Amis	Yoruba	0.2044141756	0.0037174100	54.98833193	21958	548	Austronesian
Group3	Group6	Yoruba	0.2037052372	0.0067486239	30.18470725	12567	546	ancient
Group3	Group4	Yoruba	0.2014218924	0.0058469724	34.44892132	14079	546	ancient
Group3	Zhuang	Yoruba	0.2011948611	0.0036208249	55.56602957	21971	548	Kradai
Group3	Hmong_Miao	Yoruba	0.1999642855	0.0037044384	53.97964917	21964	548	HmongMien
Group3	Atayal	Yoruba	0.1997980737	0.0038764769	51.54114922	21954	548	Austronesian
Group3	Han_Guangzhou	Yoruba	0.1995205918	0.0035775971	55.76944119	21973	548	Trans-Himalayan
Group3	Jiamao	Yoruba	0.1993602225	0.0035862333	55.59042205	21971	548	Kradai
Group3	Tai_Lue	Yoruba	0.1991633785	0.0036113106	55.14988959	21969	548	Kradai
Group3	Hmong	Yoruba	0.1990319544	0.0036411095	54.66244757	21968	548	HmongMien
Group3	Minnan_Taipei	Yoruba	0.1989650452	0.0035715169	55.70883449	21971	548	Trans-Himalayan
Group3	Ilocano	Yoruba	0.1987778252	0.0035791005	55.5384871	21971	548	Austronesian
Group3	Tai_Yong	Yoruba	0.1984466106	0.0035350725	56.13650402	21968	548	Kradai
Group3	Hakka_Taipei	Yoruba	0.1983737822	0.0035171569	56.40174347	21971	548	Trans-Himalayan
Group3	Han_Singapore	Yoruba	0.1983600493	0.0035107704	56.5004338	21971	548	Trans-Himalayan
Group3	Tagalog	Yoruba	0.1974693064	0.0035065208	56.31488173	21971	548	Austronesian
Group3	Tai_Khuen	Yoruba	0.1972838263	0.0035539575	55.51102575	21970	548	Kradai
Group3	Tai_Yuan	Yoruba	0.1968773942	0.0035036653	56.19183854	21971	548	Kradai
Group3	Mentawai	Yoruba	0.1964402926	0.0036346389	54.04671441	21955	548	Austronesian
Group3	Toraja	Yoruba	0.1960596169	0.0035224004	55.66079867	21970	548	Austronesian
Group3	Wa	Yoruba	0.1958558469	0.0035410754	55.3097085	21972	548	AustroAsiatic
Group3	Plang	Yoruba	0.1957762471	0.0035195975	55.62461205	21971	548	AustroAsiatic
Group3	Javanese_Jakart	Yoruba	0.1956417493	0.0034972800	55.94111668	21971	548	Austronesian
Group3	Dayak	Yoruba	0.1955900662	0.0037113354	52.70072566	21964	548	Austronesian
Group3	Group2	Yoruba	0.1955183063	0.0046586374	41.96898994	21517	548	ancient
Group3	Han	Yoruba	0.1953447051	0.0035514176	55.0047121	21967	548	Trans-Himalayan
Group3	Jinuo	Yoruba	0.1951870849	0.0035706681	54.66402338	21969	548	Trans-Himalayan
Group3	Korean	Yoruba	0.1947288031	0.0035343874	55.0954889	21973	548	Koreanic
Group3	Bidayuh	Yoruba	0.1946814687	0.0035599560	54.68648191	21969	548	Austronesian
Group3	Javanese_Java	Yoruba	0.1946490847	0.0034835362	55.87686535	21971	548	Austronesian
Group3	Sunda	Yoruba	0.1946088769	0.0034865747	55.81663811	21971	548	Austronesian
Group3	Malay	Yoruba	0.1945849204	0.0035635290	54.60455609	21965	548	Austronesian
Group3	Mlabri	Yoruba	0.1945130034	0.0042541644	45.72296362	21916	548	AustroAsiatic
Group3	Paluang	Yoruba	0.1944630927	0.0036375865	53.4593731	21961	548	AustroAsiatic
Group3	Visaya	Yoruba	0.1937270718	0.0034662656	55.88927463	21973	548	Austronesian
Group3	Japanese	Yoruba	0.1931993673	0.0035071709	55.08695472	21972	548	Japonic
Group3	Lawa	Yoruba	0.193066913	0.0036185145	53.35529658	21959	548	AustroAsiatic
Group3	Han_Shanghai	Yoruba	0.1923781865	0.0035021130	54.93203349	21972	548	Trans-Himalayan
Group3	Kampung_Parit_	Yoruba	0.1917410819	0.0034900818	54.93885079	21968	548	ProtoMalay
Group3	Htin	Yoruba	0.1916308605	0.0035530477	53.93422178	21958	548	AustroAsiatic
Group3	Karen	Yoruba	0.1910435131	0.0035438427	53.90857549	21968	548	Trans-Himalayan
Group3	Minanubu	Yoruba	0.1909947343	0.0034644449	55.12996791	21969	548	Austronesian
Group3	Jomon	Yoruba	0.1904164762	0.0059034057	32.25535986	18160	547	ancient
Group3	Batak_Toba	Yoruba	0.190410968	0.0034131376	55.7876629	21969	548	Austronesian
Group3	Batak_Karo	Yoruba	0.1903248368	0.0034631235	54.95756546	21965	548	Austronesian
Group3	Ryukyuan	Yoruba	0.1902835321	0.0035183814	54.08269113	21972	548	Japonic
Group3	Malay_Singapore	Yoruba	0.1890463569	0.0033389419	56.61864211	21973	548	Austronesian
Group3	Temuan	Yoruba	0.1888103409	0.0035294522	53.49565018	21946	548	ProtoMalay
Group3	Iraya	Yoruba	0.1883860857	0.0037738927	49.91824045	21931	548	Negrito
Group3	Kambera	Yoruba	0.1871185132	0.0035025785	53.42307457	21967	548	Austronesian
Group3	Mon	Yoruba	0.1870887118	0.0034311818	54.52602714	21969	548	AustroAsiatic
Group3	Malay_Sri_Mena	Yoruba	0.1865068397	0.0033827173	55.13521406	21966	548	Austronesian
Group3	Rampasasa_Mar	Yoruba	0.1846726925	0.0034491544	53.54143916	21964	548	Austronesian
Group3	Malay_Bachok	Yoruba	0.1846374772	0.0033399254	55.28191707	21970	548	Austronesian
Group3	Group1	Yoruba	0.1835884544	0.0062627483	29.31435958	13124	545	ancient
Group3	Negrito_RPS_Ba	Yoruba	0.1833876053	0.0035197487	52.1024715	21962	548	Negrito
Group3	Jehai	Yoruba	0.1819743218	0.0036503864	49.85070188	21933	548	Negrito
Group3	Flores_Manggara	Yoruba	0.1809784088	0.0034472330	52.49961636	21967	548	Austronesian
Group3	Agta	Yoruba	0.1806973975	0.0035666453	50.66312472	21941	548	Negrito
Group3	Mamanwa_Alegr	Yoruba	0.1805305767	0.0036849548	48.99126013	21959	548	Negrito

Group3	Lamaholot	Yoruba	0.1796214459	0.0034460079	52.12450198	21966	548	Austronesian	
Group3	Group5	Yoruba	0.179213934	0.0129926613	13.79347382	3325	520	ancient	
Group3	Lembata	Yoruba	0.1791408785	0.0034630350	51.72944511	21967	548	Austronesian	
Group3	Ati	Yoruba	0.1786067649	0.0033625044	53.11718432	21963	548	Negrito	
Group3	Negrito_Kampun	Yoruba	0.1778349898	0.0035281654	50.40438039	21960	548	Negrito	
Group3	Alorese	Yoruba	0.1731055579	0.0034573285	50.06916671	21964	548	Austronesian	
Group3	Spiti	Yoruba	0.172653356	0.0032721440	52.76459572	21973	548	Trans-Himalayan	
Group3	Pahari	Yoruba	0.1721518583	0.0032631104	52.75698316	21969	548	IndoEuropean	
Group3	Ayta	Yoruba	0.1656624114	0.0035378221	46.82609962	21926	548	Negrito	
Group3	Bougainville	Yoruba	0.165363987	0.0039797565	41.55128245	21884	548	Papuan	
Group3	Melanesians	Yoruba	0.1643079927	0.0040232152	40.83997089	21868	548	Papuan	
Group3	Uyghur	Yoruba	0.1605765195	0.0031369711	51.18839565	21974	548	Turkic	
Group3	Onge_sgdpC	Yoruba	0.1602431277	0.0038975174	41.11415279	21859	548	SGDP	
Group3	Tamil_Singapore	Yoruba	0.1526107651	0.0029787194	51.23368202	21973	548	Dravidian	
Group3	Bhili_Rajasthan	Yoruba	0.1493780464	0.0030247283	49.38560756	21961	548	IndoEuropean	
Group3	Bengali	Yoruba	0.1480361564	0.0031125979	47.56032156	21944	548	IndoEuropean	
Group3	Dravidian	Yoruba	0.1471666632	0.0029640374	49.6507436	21957	548	Dravidian	
Group3	Hindi_Haryana	Yoruba	0.1471637232	0.0030197328	48.73402112	21955	548	IndoEuropean	
Group3	Marathi	Yoruba	0.1463485583	0.0030514710	47.96000339	21952	548	IndoEuropean	
Group3	Hindi_UttarPrade	Yoruba	0.1454521849	0.0031543152	46.11212694	21949	548	IndoEuropean	
Group3	Hindi_Rajasthan	Yoruba	0.1451253075	0.0030504037	47.57577109	21939	548	IndoEuropean	
Group3	North_European	Yoruba	0.1387293679	0.0031200205	44.46424847	21933	548	IndoEuropean	

Table S7. Outgroup f3(Group3.1,X;Yoruba)									
Apop	**Bpop**	**Opop**	**f3**	**SE**	**Z**	**nSNPs**	**nBlocks**	**Cat**	
Group3.1	Hmong_Miao	Yoruba	0.2148954848	0.0049817593	43.13646497	13322	549	HmongMien	
Group3.1	Amis	Yoruba	0.2147841994	0.0048844174	43.97335047	13314	549	Austronesian	
Group3.1	Jiamao	Yoruba	0.2144542352	0.0046635429	45.98526032	13324	549	Kradai	
Group3.1	Zhuang	Yoruba	0.2142391301	0.0046869769	45.70944896	13326	549	Kradai	
Group3.1	Han_Singapore	Yoruba	0.2139794483	0.0045499621	47.02884217	13325	549	Trans-Himalayan	
Group3.1	Tai_Lue	Yoruba	0.2134045533	0.0046139369	46.25216159	13326	549	Kradai	
Group3.1	Group6	Yoruba	0.2132735646	0.0092473210	23.06328111	7592	543	ancient	
Group3.1	Tai_Khuen	Yoruba	0.2124199577	0.0047586990	44.63824242	13323	549	Kradai	
Group3.1	Minnan_Taipei	Yoruba	0.2122681513	0.0046050105	46.09504144	13326	549	Trans-Himalayan	
Group3.1	Hmong	Yoruba	0.2120167388	0.0047886009	44.27529927	13323	549	HmongMien	
Group3.1	Han_Guangzhou	Yoruba	0.2119346514	0.0045949543	46.12334222	13325	549	Trans-Himalayan	
Group3.1	Tai_Yong	Yoruba	0.2118151442	0.0046741710	45.31608785	13326	549	Kradai	
Group3.1	Hakka_Taipei	Yoruba	0.2117108726	0.0045812108	46.21286444	13326	549	Trans-Himalayan	
Group3.1	Atayal	Yoruba	0.2110369649	0.0049329112	42.78142383	13304	549	Austronesian	
Group3.1	Tai_Yuan	Yoruba	0.2109479386	0.0045094453	46.77913276	13326	549	Kradai	
Group3.1	Ilocano	Yoruba	0.2098509557	0.0044940913	46.69485793	13324	549	Austronesian	
Group3.1	Han	Yoruba	0.2095738448	0.0045578952	45.98039994	13321	549	Trans-Himalayan	
Group3.1	Plang	Yoruba	0.2092971833	0.0044796458	46.7218151	13323	549	AustroAsiatic	
Group3.1	Group4.1	Yoruba	0.2092588286	0.0175787220	11.90409795	2038	501	ancient	
Group3.1	Tagalog	Yoruba	0.208914443	0.0045507496	45.90769928	13324	549	Austronesian	
Group3.1	Group5	Yoruba	0.2087082889	0.0169861275	12.28698472	2023	499	ancient	
Group3.1	Bidayuh	Yoruba	0.2081679674	0.0044712246	46.55726016	13325	549	Austronesian	
Group3.1	Jinuo	Yoruba	0.2078122226	0.0045974626	45.20150415	13326	549	Trans-Himalayan	
Group3.1	Javanese_Jakart	Yoruba	0.2077456756	0.0044639597	46.5384294	13325	549	Austronesian	
Group3.1	Group4	Yoruba	0.2077025014	0.0078761597	26.37103732	8224	546	ancient	
Group3.1	Korean	Yoruba	0.2076611133	0.0046326712	44.82535073	13326	549	Koreanic	
Group3.1	Javanese_Java	Yoruba	0.2076022783	0.0045002283	46.13149958	13325	549	Austronesian	
Group3.1	Dayak	Yoruba	0.2074602621	0.0045899848	45.19846405	13318	549	Austronesian	
Group3.1	Han_Shanghai	Yoruba	0.2073493246	0.0045594076	45.47725068	13323	549	Trans-Himalayan	
Group3.1	Lawa	Yoruba	0.2068552525	0.0047139200	43.88179121	13321	549	AustroAsiatic	
Group3.1	Wa	Yoruba	0.2067514148	0.0045071111	45.87226963	13326	549	AustroAsiatic	
Group3.1	Mentawai	Yoruba	0.2065361803	0.0046729551	44.19819511	13317	549	Austronesian	
Group3.1	Toraja	Yoruba	0.2063332818	0.0044690674	46.16920322	13323	549	Austronesian	
Group3.1	Japanese	Yoruba	0.2063013428	0.0046383742	44.47708084	13326	549	Japonic	
Group3.1	Karen	Yoruba	0.2054454858	0.0046212583	44.45661172	13323	549	Trans-Himalayan	
Group3.1	Group3	Yoruba	0.2052956977	0.0091643599	22.40153155	6390	539	ancient	
Group3.1	Sunda	Yoruba	0.2052770316	0.0044644880	45.97997122	13326	549	Austronesian	
Group3.1	Group2	Yoruba	0.2051600915	0.0060299529	34.02349824	13017	549	ancient	
Group3.1	Malay	Yoruba	0.2051546211	0.0046140624	44.46290595	13322	549	Austronesian	
Group3.1	Visaya	Yoruba	0.205111427	0.0044726701	45.85883194	13321	549	Austronesian	
Group3.1	Paluang	Yoruba	0.2044946267	0.0046501213	43.97619177	13323	549	AustroAsiatic	
Group3.1	Htin	Yoruba	0.2039190876	0.0048137594	42.36171194	13323	549	AustroAsiatic	
Group3.1	Minanubu	Yoruba	0.2037720324	0.0044689940	45.5968461	13321	549	Austronesian	
Group3.1	Mlabri	Yoruba	0.2028623883	0.0055028773	36.86478526	13293	549	AustroAsiatic	
Group3.1	Batak_Toba	Yoruba	0.2024362489	0.0044602979	45.38626169	13324	549	Austronesian	
Group3.1	Ryukyuan	Yoruba	0.2022974626	0.0045861752	44.11027782	13326	549	Japonic	
Group3.1	Kampung_Parit_	Yoruba	0.2016473191	0.0043580374	46.27021349	13323	549	ProtoMalay	
Group3.1	Batak_Karo	Yoruba	0.2008634744	0.0044595131	45.04157015	13323	549	Austronesian	
Group3.1	Malay_Singapore	Yoruba	0.1995051911	0.0043258684	46.1191077	13325	549	Austronesian	
Group3.1	Temuan	Yoruba	0.1984485085	0.0045038991	44.06149063	13310	549	ProtoMalay	
Group3.1	Mon	Yoruba	0.198216467	0.0044018661	45.03009949	13325	549	AustroAsiatic	
Group3.1	Malay_Sri_Mena	Yoruba	0.1978842553	0.0042860621	46.16924586	13323	549	Austronesian	
Group3.1	Malay_Bachok	Yoruba	0.1958666807	0.0042868216	45.69041989	13321	549	Austronesian	
Group3.1	Iraya	Yoruba	0.1958234387	0.0048114285	40.69964645	13304	549	Negrito	
Group3.1	Kambera	Yoruba	0.195729582	0.0042945733	45.57602563	13322	549	Austronesian	
Group3.1	Rampasasa_Mar	Yoruba	0.194229992	0.0042985419	45.18508781	13322	549	Austronesian	
Group3.1	Jomon	Yoruba	0.1923611994	0.0079600447	24.16584403	10798	546	ancient	
Group3.1	Ati	Yoruba	0.1900398635	0.0044716500	42.4988238	13318	549	Negrito	
Group3.1	Negrito_RPS_Ba	Yoruba	0.1897260846	0.0044679869	42.46343833	13318	549	Negrito	
Group3.1	Mamanwa_Alegr	Yoruba	0.1895808531	0.0045707593	41.4768844	13312	549	Negrito	
Group3.1	Jehai	Yoruba	0.1893481238	0.0046288439	40.90613721	13299	549	Negrito	
Group3.1	Agta	Yoruba	0.1888109832	0.0045523644	41.47536647	13306	549	Negrito	

Group3.1	Lamaholot	Yoruba	0.1875450736	0.0042989786	43.62549563	13323	549	Austronesian	
Group3.1	Lembata	Yoruba	0.1871933587	0.0042747049	43.79094266	13322	549	Austronesian	
Group3.1	Flores_Manggara	Yoruba	0.1869971481	0.0042326364	44.17982831	13322	549	Austronesian	
Group3.1	Negrito_Kampun	Yoruba	0.185434649	0.0044316715	41.8430496	13319	549	Negrito	
Group3.1	Pahari	Yoruba	0.1839340727	0.0041826827	43.97514363	13326	549	IndoEuropean	
Group3.1	Spiti	Yoruba	0.1830872732	0.0041368566	44.25758303	13325	549	Trans-Himalayan	
Group3.1	Alorese	Yoruba	0.1818492415	0.0043167243	42.12667545	13319	549	Austronesian	
Group3.1	Ayta	Yoruba	0.1782332853	0.0046507719	38.32337742	13308	549	Negrito	
Group3.1	Melanesians	Yoruba	0.1751919931	0.0052707728	33.23838862	13260	549	Papuan	
Group3.1	Group1	Yoruba	0.1732964344	0.0089669496	19.32613009	7439	540	ancient	
Group3.1	Bougainville	Yoruba	0.1720652027	0.0050455668	34.10225462	13282	549	Papuan	
Group3.1	Uyghur	Yoruba	0.1677175489	0.0039038284	42.96232649	13325	549	Turkic	
Group3.1	Onge_sgdpC	Yoruba	0.1651420225	0.0051176717	32.26897563	13262	549	SGDP	
Group3.1	Tamil_Singapore	Yoruba	0.1599948037	0.0037553894	42.60405173	13325	549	Dravidian	
Group3.1	Bhili_Rajasthan	Yoruba	0.1559187234	0.0038636507	40.35528424	13320	549	IndoEuropean	
Group3.1	Hindi_Haryana	Yoruba	0.1529805062	0.0038054315	40.20056808	13318	549	IndoEuropean	
Group3.1	Bengali	Yoruba	0.1529071633	0.0039256422	38.95086645	13306	549	IndoEuropean	
Group3.1	Dravidian	Yoruba	0.1527630127	0.0037955801	40.24760643	13316	549	Dravidian	
Group3.1	Hindi_UttarPrade	Yoruba	0.1520499741	0.0038016119	39.99618487	13313	549	IndoEuropean	
Group3.1	Marathi	Yoruba	0.1512880958	0.0037315961	40.54246244	13314	549	IndoEuropean	
Group3.1	Hindi_Rajasthan	Yoruba	0.149542986	0.0036433150	41.04585654	13307	549	IndoEuropean	
Group3.1	North_European	Yoruba	0.1390441668	0.0037745124	36.83765035	13293	549	IndoEuropean	

Table S8. Outgroup f3(Group4,X;Yoruba)									
Apop	**Bpop**	**Opop**	**f3**	**SE**	**Z**	**nSNPs**	**nBlocks**	**Cat**	
Group4	Group4.1	Yoruba	0.2089666393	0.0112854657	18.5164392	4480	532	ancient	
Group4	Group3.1	Yoruba	0.2077025014	0.0078761597	26.37103732	8224	546	ancient	
Group4	Group6	Yoruba	0.2024457442	0.0055240849	36.64783338	16445	549	ancient	
Group4	Amis	Yoruba	0.202049271	0.0033339933	60.60278244	29158	552	Austronesian	
Group4	Han_Singapore	Yoruba	0.2018230627	0.0031095894	64.90344535	29184	552	Trans-Himalayan	
Group4	Hmong_Miao	Yoruba	0.2017499029	0.0031906646	63.2313093	29170	552	HmongMien	
Group4	Tai_Khuen	Yoruba	0.2016509986	0.0031570251	63.87373927	29183	552	Kradai	
Group4	Minnan_Taipei	Yoruba	0.2016403529	0.0031081394	64.87493776	29189	552	Trans-Himalayan	
Group4	Zhuang	Yoruba	0.2015784421	0.0031355691	64.28767246	29182	552	Kradai	
Group4	Lawa	Yoruba	0.2015413239	0.0031996065	62.98940863	29172	552	AustroAsiatic	
Group4	Plang	Yoruba	0.2014960014	0.0030505980	66.05131206	29183	552	AustroAsiatic	
Group4	Group3	Yoruba	0.2014218924	0.0058469724	34.44892132	14079	546	ancient	
Group4	Hakka_Taipei	Yoruba	0.201217971	0.0030918913	65.07925063	29191	552	Trans-Himalayan	
Group4	Wa	Yoruba	0.2012013203	0.0030585861	65.78246168	29186	552	AustroAsiatic	
Group4	Tai_Lue	Yoruba	0.2011829448	0.0031324703	64.22501347	29179	552	Kradai	
Group4	Atayal	Yoruba	0.2008846088	0.0034329025	58.5174228	29137	552	Austronesian	
Group4	Han_Guangzhou	Yoruba	0.2007740941	0.0031516800	63.70383232	29188	552	Trans-Himalayan	
Group4	Htin	Yoruba	0.2007361904	0.0031795848	63.13283156	29157	552	AustroAsiatic	
Group4	Karen	Yoruba	0.2006223272	0.0031494831	63.70008093	29184	552	Trans-Himalayan	
Group4	Jinuo	Yoruba	0.2004631475	0.0031548741	63.54077555	29179	552	Trans-Himalayan	
Group4	Jiamao	Yoruba	0.2003735903	0.0031350482	63.9140383	29181	552	Kradai	
Group4	Tai_Yuan	Yoruba	0.2001413787	0.0030638623	65.32322867	29185	552	Kradai	
Group4	Bidayuh	Yoruba	0.2000858114	0.0031012248	64.51831882	29181	552	Austronesian	
Group4	Tai_Yong	Yoruba	0.1999364479	0.0031211228	64.05914267	29183	552	Kradai	
Group4	Javanese_Java	Yoruba	0.1999139451	0.0030514050	65.51537626	29182	552	Austronesian	
Group4	Hmong	Yoruba	0.1995934	0.0031435503	63.49298707	29175	552	HmongMien	
Group4	Han	Yoruba	0.199383677	0.0030700911	64.94389643	29182	552	Trans-Himalayan	
Group4	Korean	Yoruba	0.1993479205	0.0030834527	64.65087656	29189	552	Koreanic	
Group4	Mlabri	Yoruba	0.1991991314	0.0035737981	55.73877531	29103	552	AustroAsiatic	
Group4	Ilocano	Yoruba	0.1988205338	0.0031350713	63.41818513	29182	552	Austronesian	
Group4	Group2	Yoruba	0.1986545871	0.0038257619	51.9254962	28504	552	ancient	
Group4	Paluang	Yoruba	0.1986334269	0.0031461952	63.13449004	29166	552	AustroAsiatic	
Group4	Mentawai	Yoruba	0.1984508701	0.0032453371	61.14954015	29161	552	Austronesian	
Group4	Javanese_Jakart	Yoruba	0.1981517705	0.0030555772	64.84921166	29187	552	Austronesian	
Group4	Dayak	Yoruba	0.1981495432	0.0032159526	61.61457273	29172	552	Austronesian	
Group4	Sunda	Yoruba	0.1978186465	0.0030394265	65.08420216	29184	552	Austronesian	
Group4	Han_Shanghai	Yoruba	0.197815519	0.0030946632	63.92150204	29185	552	Trans-Himalayan	
Group4	Japanese	Yoruba	0.1977524011	0.0030608318	64.60740546	29189	552	Japonic	
Group4	Malay	Yoruba	0.196552531	0.0031414997	62.56646491	29175	552	Austronesian	
Group4	Tagalog	Yoruba	0.1962295658	0.0030827519	63.65402541	29184	552	Austronesian	
Group4	Kampung_Parit_	Yoruba	0.1953788545	0.0030401379	64.26644506	29183	552	ProtoMalay	
Group4	Toraja	Yoruba	0.1947699645	0.0031131682	62.56326343	29183	552	Austronesian	
Group4	Ryukyuan	Yoruba	0.194534274	0.0030585350	63.60374391	29186	552	Japonic	
Group4	Visaya	Yoruba	0.1936200528	0.0030720932	63.02544909	29176	552	Austronesian	
Group4	Group5	Yoruba	0.1932099641	0.0111769970	17.28639311	4384	525	ancient	
Group4	Temuan	Yoruba	0.1928130209	0.0031034760	62.12808565	29150	552	ProtoMalay	
Group4	Minanubu	Yoruba	0.1924615222	0.0030831349	62.42397046	29175	552	Austronesian	
Group4	Batak_Toba	Yoruba	0.1917204562	0.0030576841	62.7011981	29182	552	Austronesian	
Group4	Mon	Yoruba	0.1916227444	0.0030292233	63.25804609	29178	552	AustroAsiatic	
Group4	Malay_Singapore	Yoruba	0.1914716248	0.0029585834	64.71733178	29189	552	Austronesian	
Group4	Batak_Karo	Yoruba	0.1901060294	0.0030664393	61.99569366	29180	552	Austronesian	
Group4	Iraya	Yoruba	0.1900565179	0.0033949505	55.98211777	29124	552	Negrito	
Group4	Rampasasa_Mar	Yoruba	0.1887717765	0.0030044209	62.83133494	29173	552	Austronesian	
Group4	Kambera	Yoruba	0.1885462513	0.0030181582	62.47063214	29179	552	Austronesian	
Group4	Malay_Bachok	Yoruba	0.1881637574	0.0029384383	64.0352926	29184	552	Austronesian	
Group4	Malay_Sri_Mena	Yoruba	0.1878984432	0.0030106120	62.41204234	29177	552	Austronesian	
Group4	Jomon	Yoruba	0.1865883428	0.0050960629	36.61421496	23660	549	ancient	
Group4	Negrito_RPS_Ba	Yoruba	0.1860846799	0.0031306901	59.43886849	29172	552	Negrito	
Group4	Jehai	Yoruba	0.182989858	0.0031566857	57.96898277	29129	552	Negrito	
Group4	Lamaholot	Yoruba	0.1821818614	0.0030140668	60.44386923	29181	552	Austronesian	
Group4	Flores_Manggara	Yoruba	0.1814047302	0.0029117689	62.30052393	29173	552	Austronesian	
Group4	Ati	Yoruba	0.1807675795	0.0029494916	61.28770736	29172	552	Negrito	

Group4	Lembata	Yoruba	0.1805243278	0.0029926593	60.32237844	29170	552	Austronesian	
Group4	Agta	Yoruba	0.1801396282	0.0032990952	54.60273764	29132	552	Negrito	
Group4	Negrito_Kampun	Yoruba	0.1795279977	0.0031344813	57.27518551	29171	552	Negrito	
Group4	Mamanwa_Alegr	Yoruba	0.1776932772	0.0032154797	55.26182516	29149	552	Negrito	
Group4	Pahari	Yoruba	0.1775287433	0.0028671347	61.91852198	29183	552	IndoEuropean	
Group4	Spiti	Yoruba	0.1769865151	0.0028301230	62.53668629	29188	552	Trans-Himalayan	
Group4	Alorese	Yoruba	0.1747565096	0.0029980089	58.2908583	29169	552	Austronesian	
Group4	Ayta	Yoruba	0.1709119652	0.0032727502	52.22273385	29109	552	Negrito	
Group4	Group1	Yoruba	0.1681810729	0.0056962745	29.52474841	16493	548	ancient	
Group4	Bougainville	Yoruba	0.1647994428	0.0034104263	48.32224108	29047	552	Papuan	
Group4	Onge_sgdpC	Yoruba	0.1646645793	0.0034921060	47.15337307	29023	552	SGDP	
Group4	Melanesians	Yoruba	0.1640664328	0.0035761518	45.87792767	29017	552	Papuan	
Group4	Uyghur	Yoruba	0.1621548435	0.0027249654	59.50712009	29188	552	Turkic	
Group4	Tamil_Singapore	Yoruba	0.1554378084	0.0027019870	57.52722264	29187	552	Dravidian	
Group4	Bhili_Rajasthan	Yoruba	0.1510934039	0.0027546453	54.85040231	29168	552	IndoEuropean	
Group4	Bengali	Yoruba	0.1486617925	0.0027868740	53.34356513	29131	552	IndoEuropean	
Group4	Dravidian	Yoruba	0.1484665424	0.0027106835	54.77088875	29169	552	Dravidian	
Group4	Marathi	Yoruba	0.148246686	0.0027567524	53.77584417	29150	552	IndoEuropean	
Group4	Hindi_Haryana	Yoruba	0.1478517295	0.0027477232	53.80881454	29166	552	IndoEuropean	
Group4	Hindi_UttarPrade	Yoruba	0.1454911465	0.0027604128	52.70629996	29144	552	IndoEuropean	
Group4	Hindi_Rajasthan	Yoruba	0.1446352823	0.0027305439	52.9694034	29148	552	IndoEuropean	
Group4	North_European	Yoruba	0.1375109626	0.0027774807	49.50924209	29141	552	IndoEuropean	

Table S9. Outgroup f3(Group4.1,X;Yoruba)									
Apop	**Bpop**	**Opop**	**f3**	**SE**	**Z**	**nSNPs**	**nBlocks**	**Cat**	
Group4.1	Group3.1	Yoruba	0.2092588286	0.0175787220	11.90409795	2038	501	ancient	
Group4.1	Mlabri	Yoruba	0.2091348128	0.0069104412	30.26359785	7080	537	AustroAsiatic	
Group4.1	Group4	Yoruba	0.2089666393	0.0112854657	18.5164392	4480	532	ancient	
Group4.1	Amis	Yoruba	0.2067169316	0.0063775112	32.41341727	7099	537	Austronesian	
Group4.1	Tai_Lue	Yoruba	0.206617827	0.0060829417	33.96676085	7101	537	Kradai	
Group4.1	Htin	Yoruba	0.2062456809	0.0062503314	32.9975592	7100	537	AustroAsiatic	
Group4.1	Zhuang	Yoruba	0.2062167179	0.0060842005	33.8938071	7101	537	Kradai	
Group4.1	Plang	Yoruba	0.2054960336	0.0059748043	34.39376818	7101	537	AustroAsiatic	
Group4.1	Atayal	Yoruba	0.2053620134	0.0067296465	30.51601779	7093	537	Austronesian	
Group4.1	Group3	Yoruba	0.2050618714	0.0120027465	17.08457908	3549	523	ancient	
Group4.1	Wa	Yoruba	0.2046683657	0.0059699572	34.28305386	7105	537	AustroAsiatic	
Group4.1	Han_Guangzhou	Yoruba	0.2043632404	0.0060146374	33.97764911	7103	537	Trans-Himalayan	
Group4.1	Hmong_Miao	Yoruba	0.2041913917	0.0061733494	33.0762734	7099	537	HmongMien	
Group4.1	Tai_Yuan	Yoruba	0.2040826852	0.0060020162	34.00235501	7105	537	Kradai	
Group4.1	Javanese_Jakart	Yoruba	0.2040005643	0.0060149270	33.91571739	7104	537	Austronesian	
Group4.1	Hmong	Yoruba	0.2039652424	0.0061169675	33.3441765	7100	537	HmongMien	
Group4.1	Tai_Khuen	Yoruba	0.2035560957	0.0061200234	33.26067273	7103	537	Kradai	
Group4.1	Minnan_Taipei	Yoruba	0.2032068336	0.0060300304	33.69913943	7102	537	Trans-Himalayan	
Group4.1	Lawa	Yoruba	0.2031253951	0.0061089986	33.25019494	7103	537	AustroAsiatic	
Group4.1	Hakka_Taipei	Yoruba	0.2031029597	0.0060204494	33.73551461	7105	537	Trans-Himalayan	
Group4.1	Han_Singapore	Yoruba	0.2030873903	0.0060269802	33.69637565	7104	537	Trans-Himalayan	
Group4.1	Tai_Yong	Yoruba	0.2029258643	0.0060765284	33.39503262	7104	537	Kradai	
Group4.1	Jiamao	Yoruba	0.2023657761	0.0061235833	33.04695399	7103	537	Kradai	
Group4.1	Karen	Yoruba	0.2023095002	0.0060655268	33.35398656	7104	537	Trans-Himalayan	
Group4.1	Han	Yoruba	0.2019673586	0.0059261146	34.08090687	7103	537	Trans-Himalayan	
Group4.1	Bidayuh	Yoruba	0.201453392	0.0060224465	33.45042458	7103	537	Austronesian	
Group4.1	Malay	Yoruba	0.2013571005	0.0060933979	33.0451261	7103	537	Austronesian	
Group4.1	Ilocano	Yoruba	0.2011982536	0.0062346124	32.27117274	7104	537	Austronesian	
Group4.1	Group2	Yoruba	0.2011024231	0.0079058315	25.4372262	6945	536	ancient	
Group4.1	Jinuo	Yoruba	0.2009390007	0.0060801292	33.04847563	7103	537	Trans-Himalayan	
Group4.1	Korean	Yoruba	0.200313493	0.0059772138	33.5128542	7104	537	Koreanic	
Group4.1	Sunda	Yoruba	0.2000477819	0.0059610997	33.55887204	7104	537	Austronesian	
Group4.1	Dayak	Yoruba	0.1995257316	0.0060962266	32.72938253	7103	537	Austronesian	
Group4.1	Mentawai	Yoruba	0.19855462	0.0063839398	31.10220756	7101	537	Austronesian	
Group4.1	Japanese	Yoruba	0.1983563127	0.0059511326	33.33085082	7104	537	Japonic	
Group4.1	Javanese_Java	Yoruba	0.1982738531	0.0059500496	33.32305868	7104	537	Austronesian	
Group4.1	Group5	Yoruba	0.1977466321	0.0230500417	8.579014088	1073	426	ancient	
Group4.1	Paluang	Yoruba	0.1977373784	0.0062440920	31.66791579	7103	537	AustroAsiatic	
Group4.1	Han_Shanghai	Yoruba	0.1976039598	0.0060899972	32.44729871	7100	537	Trans-Himalayan	
Group4.1	Kampung_Parit_	Yoruba	0.1967811042	0.0059718879	32.95123868	7105	537	ProtoMalay	
Group4.1	Toraja	Yoruba	0.1964816608	0.0060988755	32.2160471	7100	537	Austronesian	
Group4.1	Tagalog	Yoruba	0.1964227396	0.0061324135	32.03025043	7103	537	Austronesian	
Group4.1	Temuan	Yoruba	0.1963097261	0.0061773366	31.7790238	7096	537	ProtoMalay	
Group4.1	Minanubu	Yoruba	0.1956037156	0.0061238267	31.94141924	7102	537	Austronesian	
Group4.1	Batak_Karo	Yoruba	0.1954142034	0.0061414874	31.81870938	7102	537	Austronesian	
Group4.1	Ryukyuan	Yoruba	0.1950496556	0.0059917208	32.55319482	7104	537	Japonic	
Group4.1	Batak_Toba	Yoruba	0.1947769743	0.0060037442	32.44258357	7104	537	Austronesian	
Group4.1	Mon	Yoruba	0.1946606414	0.0058290239	33.39506642	7103	537	AustroAsiatic	
Group4.1	Visaya	Yoruba	0.1942977833	0.0059593450	32.60388253	7105	537	Austronesian	
Group4.1	Malay_Sri_Mena	Yoruba	0.194010416	0.0057860782	33.53055564	7102	537	Austronesian	
Group4.1	Malay_Singapore	Yoruba	0.1939773464	0.0056648892	34.2420371	7104	537	Austronesian	
Group4.1	Kambera	Yoruba	0.1935846801	0.0059296703	32.64678641	7102	537	Austronesian	
Group4.1	Rampasasa_Mar	Yoruba	0.1921837854	0.0060739339	31.64074353	7096	537	Austronesian	
Group4.1	Negrito_RPS_Ba	Yoruba	0.1919048179	0.0060714431	31.6077767	7099	537	Negrito	
Group4.1	Jehai	Yoruba	0.1918302932	0.0062944347	30.47617504	7093	537	Negrito	
Group4.1	Malay_Bachok	Yoruba	0.1917770694	0.0057581310	33.30543708	7105	537	Austronesian	
Group4.1	Jomon	Yoruba	0.1881216409	0.0103185316	18.23143522	5769	533	ancient	
Group4.1	Iraya	Yoruba	0.1871987727	0.0067306954	27.81269416	7090	537	Negrito	
Group4.1	Lamaholot	Yoruba	0.1868570432	0.0059212274	31.55714671	7099	537	Austronesian	
Group4.1	Flores_Manggara	Yoruba	0.1868223653	0.0059899006	31.18956014	7105	537	Austronesian	
Group4.1	Negrito_Kampun	Yoruba	0.1854945968	0.0062738249	29.56642859	7101	537	Negrito	
Group4.1	Lembata	Yoruba	0.1849301164	0.0060538517	30.5475133	7102	537	Austronesian	

Group4.1	Group6	Yoruba	0.1847764075	0.0115446795	16.00533017	4003	526	ancient	
Group4.1	Agta	Yoruba	0.1844306332	0.0063149602	29.20535162	7100	537	Negrito	
Group4.1	Alorese	Yoruba	0.1826983107	0.0060847334	30.02568855	7099	537	Austronesian	
Group4.1	Pahari	Yoruba	0.1813724232	0.0055457492	32.70476453	7105	537	IndoEuropean	
Group4.1	Ati	Yoruba	0.1808858075	0.0061622840	29.35369518	7099	537	Negrito	
Group4.1	Mamanwa_Alegr	Yoruba	0.1803975997	0.0060808006	29.66675152	7096	537	Negrito	
Group4.1	Spiti	Yoruba	0.1797138434	0.0054589909	32.92070739	7106	537	Trans-Himalayan	
Group4.1	Melanesians	Yoruba	0.1734013966	0.0073968118	23.44272113	7073	537	Papuan	
Group4.1	Bougainville	Yoruba	0.1713290293	0.0067954335	25.2123767	7080	537	Papuan	
Group4.1	Ayta	Yoruba	0.1703516462	0.0061638903	27.63703417	7090	537	Negrito	
Group4.1	Group1	Yoruba	0.1702177706	0.0112170153	15.17496106	4051	527	ancient	
Group4.1	Onge_sgdpC	Yoruba	0.1670894043	0.0067902708	24.60717843	7074	537	SGDP	
Group4.1	Uyghur	Yoruba	0.1663310811	0.0053245822	31.2383349	7106	537	Turkic	
Group4.1	Tamil_Singapore	Yoruba	0.1581679086	0.0052007490	30.4125249	7105	537	Dravidian	
Group4.1	Hindi_Haryana	Yoruba	0.1541629484	0.0052426411	29.40558891	7103	537	IndoEuropean	
Group4.1	Bhili_Rajasthan	Yoruba	0.1536768798	0.0052617815	29.20624528	7104	537	IndoEuropean	
Group4.1	Bengali	Yoruba	0.1534442959	0.0053461205	28.70198981	7102	537	IndoEuropean	
Group4.1	Dravidian	Yoruba	0.1523093258	0.0051472753	29.59028175	7105	537	Dravidian	
Group4.1	Marathi	Yoruba	0.149732221	0.0052084029	28.74820225	7101	537	IndoEuropean	
Group4.1	Hindi_UttarPrade	Yoruba	0.1497299043	0.0051753045	28.93161239	7097	537	IndoEuropean	
Group4.1	Hindi_Rajasthan	Yoruba	0.1496913653	0.0053081350	28.20036894	7102	537	IndoEuropean	
Group4.1	North_European	Yoruba	0.1396996525	0.0051354135	27.20319434	7092	537	IndoEuropean	

Table S10. Outgroup f3(Group5,X;Yoruba)									
Apop	**Bpop**	**Opop**	**f3**	**SE**	**Z**	**nSNPs**	**nBlocks**	**Cat**	
Group5	Group3.1	Yoruba	0.2087082889	0.0169861275	12.28698472	2023	499	ancient	
Group5	Group6	Yoruba	0.20662848	0.0108190348	19.09860579	4117	529	ancient	
Group5	Htin	Yoruba	0.2017155038	0.0067039265	30.08915816	7067	540	AustroAsiatic	
Group5	Group2	Yoruba	0.2013040107	0.0081819447	24.60344312	6912	540	ancient	
Group5	Amis	Yoruba	0.1998721974	0.0065010229	30.74473078	7060	540	Austronesian	
Group5	Javanese_Java	Yoruba	0.1997261488	0.0061540041	32.45466629	7072	540	Austronesian	
Group5	Bidayuh	Yoruba	0.1983850938	0.0063396350	31.29282576	7070	540	Austronesian	
Group5	Tagalog	Yoruba	0.1981570855	0.0062382614	31.76479345	7067	540	Austronesian	
Group5	Dayak	Yoruba	0.1980271845	0.0064366619	30.76550997	7066	540	Austronesian	
Group5	Mentawai	Yoruba	0.197794154	0.0066133824	29.90816815	7065	540	Austronesian	
Group5	Lawa	Yoruba	0.1977806594	0.0062427863	31.68147192	7066	540	AustroAsiatic	
Group5	Group4.1	Yoruba	0.1977466321	0.0230500417	8.579014088	1073	426	ancient	
Group5	Tai_Lue	Yoruba	0.1976883587	0.0062015759	31.87711678	7068	540	Kradai	
Group5	Tai_Yong	Yoruba	0.1976778066	0.0062531811	31.61235893	7070	540	Kradai	
Group5	Javanese_Jakart	Yoruba	0.1976681391	0.0061215286	32.29065038	7073	540	Austronesian	
Group5	Plang	Yoruba	0.1974998734	0.0062748942	31.47461421	7067	540	AustroAsiatic	
Group5	Zhuang	Yoruba	0.197205531	0.0062227955	31.6908262	7070	540	Kradai	
Group5	Sunda	Yoruba	0.1971240471	0.0061487314	32.05930378	7072	540	Austronesian	
Group5	Han_Singapore	Yoruba	0.1969393965	0.0061843132	31.84499071	7069	540	Trans-Himalayan	
Group5	Minnan_Taipei	Yoruba	0.1967371605	0.0061942427	31.76129353	7069	540	Trans-Himalayan	
Group5	Tai_Khuen	Yoruba	0.1963499705	0.0063166480	31.08451971	7069	540	Kradai	
Group5	Ilocano	Yoruba	0.1961706873	0.0062026257	31.62703927	7068	540	Austronesian	
Group5	Toraja	Yoruba	0.1960600301	0.0062003603	31.62074803	7073	540	Austronesian	
Group5	Tai_Yuan	Yoruba	0.1960514889	0.0061812771	31.71698741	7069	540	Kradai	
Group5	Wa	Yoruba	0.1958939136	0.0061813935	31.69089854	7070	540	AustroAsiatic	
Group5	Hakka_Taipei	Yoruba	0.1958869243	0.0061885645	31.65304745	7071	540	Trans-Himalayan	
Group5	Karen	Yoruba	0.1958459688	0.0062310160	31.43082435	7068	540	Trans-Himalayan	
Group5	Jiamao	Yoruba	0.1958084975	0.0063056048	31.05308744	7071	540	Kradai	
Group5	Kampung_Parit_	Yoruba	0.1957447111	0.0060470251	32.37041497	7071	540	ProtoMalay	
Group5	Mlabri	Yoruba	0.1956392793	0.0074611445	26.22108172	7047	540	AustroAsiatic	
Group5	Atayal	Yoruba	0.1956294618	0.0066494658	29.42032769	7060	540	Austronesian	
Group5	Batak_Karo	Yoruba	0.1955774425	0.0060471076	32.34231222	7072	540	Austronesian	
Group5	Han_Guangzhou	Yoruba	0.195456074	0.0061779574	31.63765341	7070	540	Trans-Himalayan	
Group5	Hmong_Miao	Yoruba	0.1953375769	0.0064378642	30.34198486	7066	540	HmongMien	
Group5	Hmong	Yoruba	0.1950140843	0.0063853399	30.54090895	7066	540	HmongMien	
Group5	Batak_Toba	Yoruba	0.1948344442	0.0061104236	31.88558723	7074	540	Austronesian	
Group5	Han	Yoruba	0.1940276191	0.0061418236	31.59120697	7066	540	Trans-Himalayan	
Group5	Minanubu	Yoruba	0.1939558684	0.0062194922	31.18516168	7069	540	Austronesian	
Group5	Korean	Yoruba	0.193926662	0.0062458357	31.04895332	7072	540	Koreanic	
Group5	Temuan	Yoruba	0.1937770538	0.0062579565	30.96490898	7057	540	ProtoMalay	
Group5	Visaya	Yoruba	0.1935861391	0.0060779512	31.85055811	7073	540	Austronesian	
Group5	Group4	Yoruba	0.1932099641	0.0111769970	17.28639311	4384	525	ancient	
Group5	Jinuo	Yoruba	0.19318826	0.0060623418	31.86693612	7069	540	Trans-Himalayan	
Group5	Malay_Singapore	Yoruba	0.1931030104	0.0058937043	32.76428567	7076	540	Austronesian	
Group5	Malay	Yoruba	0.1925497293	0.0063283580	30.42649125	7070	540	Austronesian	
Group5	Kambera	Yoruba	0.1923085427	0.0059012503	32.58776247	7073	540	Austronesian	
Group5	Japanese	Yoruba	0.1921230933	0.0062169072	30.90332315	7071	540	Japonic	
Group5	Paluang	Yoruba	0.191483488	0.0063450083	30.17860346	7062	540	AustroAsiatic	
Group5	Iraya	Yoruba	0.1913981031	0.0066047550	28.9788347	7056	540	Negrito	
Group5	Ryukyuan	Yoruba	0.1894983575	0.0061290007	30.91831251	7068	540	Japonic	
Group5	Malay_Sri_Mena	Yoruba	0.189387631	0.0060409224	31.35078021	7072	540	Austronesian	
Group5	Malay_Bachok	Yoruba	0.1889905922	0.0059207052	31.920284	7074	540	Austronesian	
Group5	Han_Shanghai	Yoruba	0.1888226529	0.0061439562	30.73307277	7071	540	Trans-Himalayan	
Group5	Flores_Manggara	Yoruba	0.1888022682	0.0059947529	31.49458725	7072	540	Austronesian	
Group5	Negrito_RPS_Ba	Yoruba	0.1880308875	0.0060683310	30.98560166	7067	540	Negrito	
Group5	Mon	Yoruba	0.187787388	0.0059740591	31.43380146	7071	540	AustroAsiatic	
Group5	Rampasasa_Mar	Yoruba	0.1873158976	0.0060178565	31.12668082	7070	540	Austronesian	
Group5	Mamanwa_Alegr	Yoruba	0.1861481202	0.0065592337	28.37955318	7064	540	Negrito	
Group5	Jehai	Yoruba	0.1857399682	0.0062634969	29.6543562	7061	540	Negrito	
Group5	Agta	Yoruba	0.1846899676	0.0065471756	28.20910576	7061	540	Negrito	
Group5	Lembata	Yoruba	0.1845323686	0.0060135056	30.68632173	7068	540	Austronesian	
Group5	Negrito_Kampun	Yoruba	0.1845264564	0.0060437660	30.53170075	7068	540	Negrito	

Group5	Lamaholot	Yoruba	0.1839955187	0.0059236281	31.06128785	7072	540	Austronesian	
Group5	Ati	Yoruba	0.183301818	0.0061358379	29.87396678	7071	540	Negrito	
Group5	Alorese	Yoruba	0.1793558298	0.0059246702	30.27271102	7070	540	Austronesian	
Group5	Pahari	Yoruba	0.1792631093	0.0055801956	32.12487927	7074	540	IndoEuropean	
Group5	Group3	Yoruba	0.179213934	0.0129926613	13.79347382	3325	520	ancient	
Group5	Spiti	Yoruba	0.1770298025	0.0056101585	31.55522295	7076	540	Trans-Himalayan	
Group5	Ayta	Yoruba	0.1750064786	0.0063692445	27.47680344	7055	540	Negrito	
Group5	Jomon	Yoruba	0.1727882262	0.0102818495	16.80516981	5712	532	ancient	
Group5	Melanesians	Yoruba	0.1714710864	0.0072400758	23.68360377	7036	540	Papuan	
Group5	Bougainville	Yoruba	0.1706305477	0.0066746092	25.56412547	7036	540	Papuan	
Group5	Onge_sgdpC	Yoruba	0.1693767726	0.0071252157	23.77145911	7031	540	SGDP	
Group5	Uyghur	Yoruba	0.164699916	0.0054823671	30.04175276	7076	540	Koreanic	
Group5	Tamil_Singapore	Yoruba	0.1601625298	0.0051590095	31.04520927	7075	540	Dravidian	
Group5	Bhili_Rajasthan	Yoruba	0.1588458676	0.0052622872	30.18570881	7072	540	IndoEuropean	
Group5	Hindi_UttarPrade	Yoruba	0.1556190599	0.0054098527	28.76585899	7074	540	IndoEuropean	
Group5	Bengali	Yoruba	0.1550871455	0.0053810991	28.82071916	7063	540	IndoEuropean	
Group5	Dravidian	Yoruba	0.1548406044	0.0051515066	30.05734388	7075	540	Dravidian	
Group5	Hindi_Haryana	Yoruba	0.1534924921	0.0051413462	29.85453374	7076	540	IndoEuropean	
Group5	Marathi	Yoruba	0.1515652816	0.0053629733	28.26142766	7072	540	IndoEuropean	
Group5	Hindi_Rajasthan	Yoruba	0.1502480315	0.0053119505	28.28490829	7071	540	IndoEuropean	
Group5	Group1	Yoruba	0.1486281165	0.0115108380	12.91201527	3888	530	ancient	
Group5	North_European	Yoruba	0.1466345233	0.0054869082	26.72443556	7065	540	IndoEuropean	

Table S11. Outgroup f3(Group6,X;Yoruba)								
Apop	**Bpop**	**Opop**	**f3**	**SE**	**Z**	**nSNPs**	**nBlocks**	**Cat**
Group6	Amis	Yoruba	0.2238725873	0.0035989786	62.20447927	26720	550	Austronesian
Group6	Ilocano	Yoruba	0.2212376794	0.0033776821	65.49985218	26734	550	Austronesian
Group6	Atayal	Yoruba	0.2194130973	0.0036922876	59.42470354	26694	550	Austronesian
Group6	Mentawai	Yoruba	0.2190315382	0.0034898273	62.76285849	26720	550	Austronesian
Group6	Tagalog	Yoruba	0.2164151813	0.0032264865	67.07456511	26732	550	Austronesian
Group6	Dayak	Yoruba	0.2153430119	0.0034341517	62.70631926	26724	550	Austronesian
Group6	Jiamao	Yoruba	0.214786931	0.0033693370	63.74753579	26732	550	Kradai
Group6	Minnan_Taipei	Yoruba	0.2143390616	0.0032765612	65.41585687	26735	550	Trans-Himalayan
Group6	Zhuang	Yoruba	0.2138924781	0.0033340784	64.15340472	26734	550	Kradai
Group6	Malay	Yoruba	0.2138577099	0.0033624854	63.601083	26727	550	Austronesian
Group6	Visaya	Yoruba	0.2136170769	0.0032145457	66.45327169	26732	550	Austronesian
Group6	Hakka_Taipei	Yoruba	0.2135872768	0.0032587612	65.54247579	26737	550	Trans-Himalayan
Group6	Han_Singapore	Yoruba	0.2134499073	0.0032737847	65.19973794	26734	550	Trans-Himalayan
Group6	Toraja	Yoruba	0.2134295428	0.0032995035	64.685351	26728	550	Austronesian
Group6	Bidayuh	Yoruba	0.2134122771	0.0032451060	65.76434673	26732	550	Austronesian
Group6	Group3.1	Yoruba	0.2132735646	0.0092473210	23.06328111	7592	543	ancient
Group6	Han_Guangzhou	Yoruba	0.2131530842	0.0033047039	64.49990371	26734	550	Trans-Himalayan
Group6	Tai_Lue	Yoruba	0.2130106941	0.0033213782	64.13322367	26728	550	Kradai
Group6	Hmong	Yoruba	0.2127836196	0.0034412744	61.83279599	26731	550	HmongMien
Group6	Tai_Yong	Yoruba	0.2121527098	0.0033485310	63.35694902	26733	550	Kradai
Group6	Minanubu	Yoruba	0.2121123065	0.0033457659	63.39723393	26725	550	Austronesian
Group6	Javanese_Jakart	Yoruba	0.2111019746	0.0032268125	65.42120833	26735	550	Austronesian
Group6	Tai_Khuen	Yoruba	0.2110511125	0.0033518757	62.96507663	26729	550	Kradai
Group6	Hmong_Miao	Yoruba	0.2109503984	0.0034639008	60.89966425	26722	550	HmongMien
Group6	Tai_Yuan	Yoruba	0.2108938658	0.0032981440	63.94319431	26732	550	Kradai
Group6	Javanese_Java	Yoruba	0.2104964852	0.0032196796	65.37808538	26733	550	Austronesian
Group6	Han	Yoruba	0.2093295626	0.0032760738	63.89647436	26730	550	Trans-Himalayan
Group6	Korean	Yoruba	0.2084186589	0.0032417283	64.29245215	26737	550	Koreanic
Group6	Plang	Yoruba	0.2082022778	0.0033630966	61.9079089	26734	550	AustroAsiatic
Group6	Sunda	Yoruba	0.2081951576	0.0032512810	64.03480816	26732	550	Austronesian
Group6	Han_Shanghai	Yoruba	0.2076149246	0.0033061123	62.7973004	26731	550	Trans-Himalayan
Group6	Batak_Toba	Yoruba	0.207533081	0.0032659918	63.54366278	26728	550	Austronesian
Group6	Batak_Karo	Yoruba	0.2074564147	0.0032922736	63.01311439	26728	550	Austronesian
Group6	Kambera	Yoruba	0.2069067631	0.0031910207	64.84030791	26729	550	Austronesian
Group6	Lawa	Yoruba	0.2068803514	0.0033985214	60.87363478	26719	550	AustroAsiatic
Group6	Japanese	Yoruba	0.2068147733	0.0032451079	63.7312474	26736	550	Japonic
Group6	Wa	Yoruba	0.206744206	0.0032759449	63.10979256	26731	550	AustroAsiatic
Group6	Group5	Yoruba	0.20662848	0.0108190348	19.09860579	4117	529	ancient
Group6	Jinuo	Yoruba	0.2061856414	0.0032928767	62.61565789	26733	550	Trans-Himalayan
Group6	Karen	Yoruba	0.2060210975	0.0033260486	61.94169807	26733	550	Trans-Himalayan
Group6	Kampung_Parit_	Yoruba	0.2059030754	0.0031878260	64.59043827	26734	550	ProtoMalay
Group6	Htin	Yoruba	0.2054735901	0.0034618532	59.35364007	26713	550	AustroAsiatic
Group6	Paluang	Yoruba	0.2053667053	0.0033415640	61.45825914	26718	550	AustroAsiatic
Group6	Mlabri	Yoruba	0.2047988974	0.0039781607	51.48080003	26652	550	AustroAsiatic
Group6	Malay_Sri_Mena	Yoruba	0.2047750948	0.0032392127	63.21755166	26732	550	Austronesian
Group6	Malay_Singapore	Yoruba	0.2046967956	0.0031016302	65.99651888	26735	550	Austronesian
Group6	Ryukyuan	Yoruba	0.204377084	0.0032202450	63.46631491	26734	550	Japonic
Group6	Iraya	Yoruba	0.2037663618	0.0036409285	55.96549392	26685	550	Negrito
Group6	Group2	Yoruba	0.2037187974	0.0041309113	49.31570324	26064	550	ancient
Group6	Group3	Yoruba	0.2037052372	0.0067486239	30.18470725	12567	546	ancient
Group6	Temuan	Yoruba	0.203512425	0.0032956107	61.75256803	26705	550	ProtoMalay
Group6	Group4	Yoruba	0.2024457442	0.0055240849	36.64783338	16445	549	ancient
Group6	Rampasasa_Mar	Yoruba	0.2005386087	0.0031991644	62.68468351	26723	550	Austronesian
Group6	Malay_Bachok	Yoruba	0.2004624321	0.0031278870	64.08877143	26734	550	Austronesian
Group6	Mon	Yoruba	0.1995004163	0.0031818680	62.69914863	26733	550	AustroAsiatic
Group6	Ati	Yoruba	0.1990688782	0.0034019355	58.51635873	26723	550	Negrito
Group6	Agta	Yoruba	0.1981132399	0.0035330944	56.07357649	26690	550	Negrito
Group6	Lamaholot	Yoruba	0.1965446908	0.0032490045	60.49382	26725	550	Austronesian
Group6	Flores_Manggara	Yoruba	0.1963269407	0.0031630445	62.06897849	26729	550	Austronesian
Group6	Lembata	Yoruba	0.1953751901	0.0032185548	60.70277038	26728	550	Austronesian
Group6	Negrito_RPS_Ba	Yoruba	0.1952861361	0.0033277900	58.68343109	26723	550	Negrito
Group6	Mamanwa_Alegr	Yoruba	0.1950906551	0.0035011169	55.72240592	26711	550	Negrito

Group6	Jehai	Yoruba	0.1949518282	0.0034730987	56.13195769	26690	550	Negrito	
Group6	Negrito_Kampun	Yoruba	0.1897008334	0.0033965955	55.85028745	26719	550	Negrito	
Group6	Alorese	Yoruba	0.1884160646	0.0032659788	57.69053589	26723	550	Austronesian	
Group6	Jomon	Yoruba	0.1878449976	0.0053327085	35.22506396	21602	547	ancient	
Group6	Group4.1	Yoruba	0.1847764075	0.0115446795	16.00533017	4003	526	ancient	
Group6	Ayta	Yoruba	0.1835103833	0.0034306462	53.4914916	26673	550	Negrito	
Group6	Pahari	Yoruba	0.1833584915	0.0030067106	60.98308533	26732	550	IndoEuropean	
Group6	Spiti	Yoruba	0.1821883875	0.0029854861	61.02469744	26736	550	Trans-Himalayan	
Group6	Melanesians	Yoruba	0.179645278	0.0040592176	44.25613345	26587	550	Papuan	
Group6	Bougainville	Yoruba	0.1785996244	0.0037675520	47.40468761	26598	550	Papuan	
Group6	Onge_sgdpC	Yoruba	0.1706457482	0.0037525030	45.47517927	26582	550	p	
Group6	Uyghur	Yoruba	0.1691320794	0.0028695985	58.93928263	26737	550	Turkic	
Group6	Tamil_Singapore	Yoruba	0.1611208597	0.0027670526	58.2283324	26733	550	Dravidian	
Group6	Bhili_Rajasthan	Yoruba	0.1573734868	0.0029222117	53.85423907	26715	550	IndoEuropean	
Group6	Bengali	Yoruba	0.1563090646	0.0029292034	53.36231073	26690	550	IndoEuropean	
Group6	Group1	Yoruba	0.1556659805	0.0062664578	24.84114415	14928	546	ancient	
Group6	Hindi_Haryana	Yoruba	0.1549569865	0.0028837308	53.73489978	26716	550	IndoEuropean	
Group6	Marathi	Yoruba	0.1547101596	0.0029391688	52.63738509	26707	550	IndoEuropean	
Group6	Dravidian	Yoruba	0.154634099	0.0028546585	54.16903645	26718	550	Dravidian	
Group6	Hindi_UttarPrade	Yoruba	0.1537091024	0.0029616812	51.89927303	26703	550	IndoEuropean	
Group6	Hindi_Rajasthan	Yoruba	0.1506163821	0.0028769977	52.35193065	26697	550	IndoEuropean	
Group6	North_European	Yoruba	0.1424447281	0.0029778897	47.83411887	26678	550	IndoEuropean	

Table S12. D(Japanese,Jomon;X,Mbuti).

H1pop	H2pop	H3pop	H4pop	D	SE	Z	nSNPs	nBlocks
Japanese	Jomon	Ma911	Mbuti	-0.02633740157	0.009026460469	-2.917799469	32323	555
Japanese	Jomon	La368	Mbuti	-0.01766420056	0.006483937672	-2.724301413	129042	557
Japanese	Jomon	Ma525	Mbuti	-0.0141535757	0.02757391632	-0.5132958095	2285	523
Japanese	Jomon	French	Mbuti	-0.0107556843	0.004979237697	-2.160106619	303417	560
Japanese	Jomon	Kurumba	Mbuti	-0.007653030655	0.005715544418	-1.338985422	277217	560
Japanese	Jomon	Madiga	Mbuti	-0.007554722094	0.004742296745	-1.593051321	306510	560
Japanese	Jomon	Mala	Mbuti	-0.006841694317	0.004307375524	-1.588367273	316973	560
Japanese	Jomon	Irula	Mbuti	-0.005921939344	0.00470323191	-1.259121272	305866	560
Japanese	Jomon	Relli	Mbuti	-0.005844879034	0.004578594766	-1.276566137	306551	560
Japanese	Jomon	Brahmin	Mbuti	-0.005595965598	0.004561727375	-1.226720744	306226	560
Japanese	Jomon	Kashmiri_Pandit	Mbuti	-0.00471988902	0.005688282086	-0.8297564973	277096	560
Japanese	Jomon	Jarawa	Mbuti	-0.004456180841	0.004693990458	-0.9493374307	308375	560
Japanese	Jomon	Australian	Mbuti	-0.004046298925	0.005058535743	-0.7998952918	299779	560
Japanese	Jomon	Mbuti2	Mbuti	-0.003986232773	0.002773846075	-1.437077857	263265	559
Japanese	Jomon	Bengali	Mbuti	-0.002673070506	0.004674498801	-0.5718410935	307339	560
Japanese	Jomon	Vt778	Mbuti	-0.002625396904	0.008168401225	-0.3214089064	40783	556
Japanese	Jomon	Papuan	Mbuti	-0.001921370608	0.004758465553	-0.403779451	320956	560
Japanese	Jomon	Kapu	Mbuti	0.000817259555	0.004399838078	-0.1857476436	307415	560
Japanese	Jomon	Yadava	Mbuti	0.000570075748	0.004722775594	-0.1207077782	305247	560
Japanese	Jomon	Onge	Mbuti	0.00017439968	0.005007919672	0.03482477643	300517	560
Japanese	Jomon	Khonda_Dora	Mbuti	0.001931742301	0.005705571518	0.3385712185	280470	560
Japanese	Jomon	Vt880	Mbuti	0.005693748183	0.009320954733	0.6108546116	30876	554
Japanese	Jomon	Bougainville	Mbuti	0.005890081737	0.005088506267	1.157526674	300118	560
Japanese	Jomon	Vt833	Mbuti	0.005929425047	0.008689602605	0.6823585976	35158	558
Japanese	Jomon	In662	Mbuti	0.006121635251	0.00926544827	0.6606949899	27516	557
Japanese	Jomon	Vt781	Mbuti	0.006551031324	0.008508862521	0.7699068246	34459	556
Japanese	Jomon	Vt808	Mbuti	0.008476751764	0.009748997259	0.8694998613	28719	556
Japanese	Jomon	In661	Mbuti	0.009779784736	0.01189969662	0.8218516022	15242	554
Japanese	Jomon	Kharia	Mbuti	0.01079435733	0.005458332179	1.9775926	279747	560
Japanese	Jomon	La727	Mbuti	0.01089816852	0.006908991846	1.577389113	92993	556
Japanese	Jomon	Nivkh	Mbuti	0.01196890629	0.00542511078	2.206204956	297127	559
Japanese	Jomon	Jehai	Mbuti	0.01557691067	0.004996571742	3.117519667	285798	559
Japanese	Jomon	Vt779	Mbuti	0.0155784588	0.008682785066	1.794177638	34894	555
Japanese	Jomon	Vt777	Mbuti	0.01572597005	0.008822179734	1.782549271	37884	557
Japanese	Jomon	Ma912	Mbuti	0.01590216399	0.005843013969	2.72156871	226746	559
Japanese	Jomon	Th703	Mbuti	0.01636658843	0.009150774688	1.788546761	30002	556
Japanese	Jomon	Maori	Mbuti	0.01858446275	0.005209409525	3.567479704	265946	560
Japanese	Jomon	Th519	Mbuti	0.01903191784	0.008305540706	2.291472466	43923	557
Japanese	Jomon	La364	Mbuti	0.02073353013	0.005516798038	3.758254332	215738	560
Japanese	Jomon	Kusunda	Mbuti	0.02311438138	0.004941385522	4.677712614	305465	560
Japanese	Jomon	Th530	Mbuti	0.02328471107	0.01136418265	2.048956073	16475	517
Japanese	Jomon	Uygur	Mbuti	0.02349950512	0.004457980087	5.2713347	308408	559
Japanese	Jomon	La898	Mbuti	0.02510390052	0.01029028479	2.43957296	24595	558
Japanese	Jomon	Th521	Mbuti	0.02546563679	0.006385232758	3.988208065	101792	558
Japanese	Jomon	Phl534	Mbuti	0.02602159241	0.0184812268	1.408001357	5438	547
Japanese	Jomon	Ma554	Mbuti	0.02645651189	0.008030298761	3.294586252	49505	557
Japanese	Jomon	Cambodian	Mbuti	0.02870390572	0.004511992513	6.361691788	308929	560
Japanese	Jomon	Vt719	Mbuti	0.02878837846	0.007166350313	4.017160367	66683	557
Japanese	Jomon	Surui	Mbuti	0.02993667932	0.005395256827	5.548703293	297552	560
Japanese	Jomon	Ma555	Mbuti	0.03079617538	0.006466978941	4.762065202	124204	558
Japanese	Jomon	Mixe2	Mbuti	0.03105868818	0.004806227656	6.462175828	310264	559
Japanese	Jomon	Vt796	Mbuti	0.03132691951	0.009408299621	3.329711081	28383	557
Japanese	Jomon	Karitiana	Mbuti	0.03226583922	0.00514630704	6.269707379	305360	559
Japanese	Jomon	Mixe	Mbuti	0.0330507502	0.004799634172	6.886097776	310434	559
Japanese	Jomon	Atayal	Mbuti	0.03349850804	0.005634382959	5.945372951	278934	560

Japanese	Jomon	Burmese	Mbuti	0.03662930717	0.004734021392	7.73746127	309641	560
Japanese	Jomon	Hawaiian	Mbuti	0.03689468061	0.005546913885	6.65138875	271933	559
Japanese	Jomon	Th531	Mbuti	0.0395787425	0.01122202562	3.526880427	15198	557
Japanese	Jomon	Thai	Mbuti	0.03990740367	0.00443708692	8.994054971	309383	560
Japanese	Jomon	Dusun	Mbuti	0.03991864106	0.004457182053	8.956026607	307345	560
Japanese	Jomon	Tibetan	Mbuti	0.03995361878	0.004603210621	8.679511337	309033	560
Japanese	Jomon	Igorot	Mbuti	0.04023789424	0.004787281671	8.405165395	306074	560
Japanese	Jomon	Ami	Mbuti	0.04159890629	0.004581749306	9.079262856	307607	560
Japanese	Jomon	Lahu	Mbuti	0.04347648653	0.004781418214	9.092801463	308557	559
Japanese	Jomon	Dai	Mbuti	0.04560973326	0.004267924728	10.68663019	318801	560
Japanese	Jomon	Tu	Mbuti	0.04709789877	0.004473274182	10.5287306	310046	560
Japanese	Jomon	Naxi	Mbuti	0.04722745383	0.004315266192	10.94427359	319268	560
Japanese	Jomon	Oroqen	Mbuti	0.04738874425	0.004842700223	9.785603501	308792	559
Japanese	Jomon	Yi	Mbuti	0.04801044866	0.004576180613	10.49137976	306454	560
Japanese	Jomon	Kinh	Mbuti	0.0482287161	0.004471319121	10.78623887	309626	560
Japanese	Jomon	Daur	Mbuti	0.04932920238	0.005690659202	8.66845134	280941	559
Japanese	Jomon	Xibo	Mbuti	0.04984261041	0.004521380868	11.02375842	308449	559
Japanese	Jomon	Sherpa	Mbuti	0.05008482679	0.004718284091	10.61505111	307950	560
Japanese	Jomon	Han	Mbuti	0.05144107661	0.004374815955	11.75845501	309883	560
Japanese	Jomon	Mongola	Mbuti	0.05169940185	0.004639351187	11.14367069	309405	560
Japanese	Jomon	She	Mbuti	0.05196762023	0.004442315892	11.69831716	307253	560
Japanese	Jomon	Tujia	Mbuti	0.0519893314	0.004359100933	11.92661794	307842	560
Japanese	Jomon	Korean	Mbuti	0.05334901199	0.004619578601	11.54845855	309628	559
Japanese	Jomon	Hezhen	Mbuti	0.05413592785	0.004558419574	11.87603005	309914	560
Japanese	Jomon	Miao	Mbuti	0.05437406294	0.004778678551	11.3784726	308232	560

Table S13. D(Japanese,X;Jomon,Mbuti).								
H1pop	**H2pop**	**H3pop**	**H4pop**	**D**	**SE**	**Z**	**nSNPs**	**nBlocks**
Japanese	Ma525	Jomon	Mbuti	-0.01168714305	0.02893068046	-0.4039705554	2290	523
Japanese	Nivkh	Jomon	Mbuti	-0.008132660926	0.00525277706	-1.548259298	292248	559
Japanese	Phl534	Jomon	Mbuti	0.006660355963	0.01834611151	0.3630391082	5428	548
Japanese	Vt808	Jomon	Mbuti	0.008495568311	0.009840990086	0.863283901	28710	556
Japanese	Vt778	Jomon	Mbuti	0.01720117042	0.008012615041	2.146761118	41223	556
Japanese	Vt781	Jomon	Mbuti	0.02099838255	0.009131874065	2.299460374	34641	555
Japanese	Vt777	Jomon	Mbuti	0.02560205812	0.008611946826	2.972853716	38015	556
Japanese	Vt779	Jomon	Mbuti	0.02701700374	0.008595323224	3.143221382	35126	555
Japanese	Atayal	Jomon	Mbuti	0.0281088375	0.005985734503	4.695971311	275982	559
Japanese	Vt719	Jomon	Mbuti	0.03008440065	0.007281077921	4.131860829	66804	556
Japanese	Ami	Jomon	Mbuti	0.03112214685	0.004564711206	6.817988138	303375	559
Japanese	Th519	Jomon	Mbuti	0.03214108175	0.008167173778	3.935398294	44323	558
Japanese	Th530	Jomon	Mbuti	0.0321758978	0.01175676369	2.736798889	16605	516
Japanese	Vt833	Jomon	Mbuti	0.03222557702	0.008893230051	3.623607714	35520	555
Japanese	Igorot	Jomon	Mbuti	0.03369530404	0.004782919391	7.04492409	302312	559
Japanese	Korean	Jomon	Mbuti	0.03560807463	0.004699014621	7.577774811	304579	559
Japanese	Ma554	Jomon	Mbuti	0.03602666711	0.007914252411	4.552125108	49827	556
Japanese	La727	Jomon	Mbuti	0.03611898183	0.007251554229	4.980860749	93930	556
Japanese	She	Jomon	Mbuti	0.03617530594	0.004585232299	7.889525237	302743	559
Japanese	Tujia	Jomon	Mbuti	0.03659854236	0.004544936307	8.052597415	303813	559
Japanese	Vt796	Jomon	Mbuti	0.03734203706	0.009897245019	3.772972881	28480	553
Japanese	Han	Jomon	Mbuti	0.03751325646	0.004490990262	8.353003297	305811	559
Japanese	Ma912	Jomon	Mbuti	0.0386538933	0.006387553608	6.051439357	229180	559
Japanese	Ma555	Jomon	Mbuti	0.03883911392	0.006778557318	5.729702074	124593	558
Japanese	In662	Jomon	Mbuti	0.03970997182	0.009201904536	4.315407931	27831	557
Japanese	Dai	Jomon	Mbuti	0.04117869463	0.004108535337	10.02271886	319846	559
Japanese	Th703	Jomon	Mbuti	0.04168725234	0.009405286771	4.432321242	30371	556
Japanese	Naxi	Jomon	Mbuti	0.04335803312	0.003920284889	11.05991895	320270	559
Japanese	Yi	Jomon	Mbuti	0.04370939722	0.004427594322	9.872042025	303861	559
Japanese	Dusun	Jomon	Mbuti	0.04430424237	0.004685405463	9.455796881	305961	559
Japanese	La364	Jomon	Mbuti	0.04439157943	0.005861651524	7.573220491	217808	559
Japanese	Lahu	Jomon	Mbuti	0.04478096921	0.004702859177	9.522073175	307203	559
Japanese	Oroqen	Jomon	Mbuti	0.04479435062	0.004809625702	9.313479551	306012	559
Japanese	Miao	Jomon	Mbuti	0.04520610156	0.004652279777	9.716978282	304361	559
Japanese	In661	Jomon	Mbuti	0.04545566098	0.01179069573	3.855214485	15406	554
Japanese	Xibo	Jomon	Mbuti	0.04559954935	0.004494168104	10.14638266	305604	559
Japanese	Hezhen	Jomon	Mbuti	0.04567801589	0.004497280587	10.1568081	306406	559
Japanese	Kinh	Jomon	Mbuti	0.04581043749	0.004462689742	10.26520779	307530	559
Japanese	Th521	Jomon	Mbuti	0.04610955272	0.006604973759	6.98103496	102609	557
Japanese	Daur	Jomon	Mbuti	0.0474676424	0.005783263754	8.207760258	277961	559
Japanese	Mongola	Jomon	Mbuti	0.04819646131	0.004603065292	10.47051438	307681	559
Japanese	Th531	Jomon	Mbuti	0.05083891751	0.01189581857	4.273679631	15288	556
Japanese	La898	Jomon	Mbuti	0.05137609444	0.01006948332	5.102157957	24708	557
Japanese	Tu	Jomon	Mbuti	0.05214647185	0.004468216336	11.67053426	309733	559
Japanese	Vt880	Jomon	Mbuti	0.05251546015	0.009216352705	5.698074047	31391	554
Japanese	Cambodian	Jomon	Mbuti	0.05343435377	0.004712194084	11.33959103	312602	559
Japanese	Thai	Jomon	Mbuti	0.05399220299	0.004543012299	11.88467022	310599	559
Japanese	Tibetan	Jomon	Mbuti	0.05418752847	0.004897370613	11.06461666	309935	559
Japanese	Burmese	Jomon	Mbuti	0.05519088478	0.004612257277	11.96613317	311921	559
Japanese	Hawaiian	Jomon	Mbuti	0.05739593229	0.006033871487	9.512289484	272170	559
Japanese	Sherpa	Jomon	Mbuti	0.06026538375	0.004770093866	12.63400374	307218	559
Japanese	Karitiana	Jomon	Mbuti	0.06586774893	0.005421700923	12.14890859	309153	559
Japanese	Surui	Jomon	Mbuti	0.06619581574	0.00567927214	11.65568652	301349	559
Japanese	Mixe	Jomon	Mbuti	0.07144795546	0.005032961821	14.19600585	317317	559
Japanese	Kusunda	Jomon	Mbuti	0.07537805956	0.005064194896	14.88451	312567	559

Japanese	Jehai	Jomon	Mbuti	0.07679026522	0.005444064717	14.10531822	291844	559
Japanese	Khonda_Dora	Jomon	Mbuti	0.08143550253	0.005686075799	14.32191645	289001	559
Japanese	Ma911	Jomon	Mbuti	0.08299520857	0.008736791729	9.499506357	33733	556
Japanese	Onge2	Jomon	Mbuti	0.08305244447	0.005209197022	15.94342547	330759	559
Japanese	Jarawa	Jomon	Mbuti	0.08703602456	0.005147888428	16.9071311	324543	559
Japanese	Onge	Jomon	Mbuti	0.09230227776	0.005679790977	16.25099905	312658	559
Japanese	La368	Jomon	Mbuti	0.09288483782	0.006985372347	13.29704892	134019	557
Japanese	Kharia	Jomon	Mbuti	0.09787071695	0.005523054783	17.72039583	289606	559
Japanese	Kurumba	Jomon	Mbuti	0.09888121294	0.005814319044	17.00649933	290397	559
Japanese	Bougainville	Jomon	Mbuti	0.09894440752	0.005709973607	17.32834761	312923	559
Japanese	Uygur	Jomon	Mbuti	0.1003972468	0.004699166576	21.36490486	321852	559
Japanese	Australian	Jomon	Mbuti	0.1064887101	0.005847574495	18.21074877	317019	559
Japanese	Mala	Jomon	Mbuti	0.1067067584	0.004611084896	23.14135628	343795	559
Japanese	Relli	Jomon	Mbuti	0.1072613931	0.00464278197	23.10282795	326800	559
Japanese	Madiga	Jomon	Mbuti	0.1081868935	0.005015888968	21.56883739	327864	559
Japanese	Kapu	Jomon	Mbuti	0.108960041	0.004599933392	23.68730842	328376	559
Japanese	Bengali	Jomon	Mbuti	0.1090789461	0.005038708885	21.64819373	327720	559
Japanese	Papuan2	Jomon	Mbuti	0.1095976306	0.005911646711	18.53927272	316440	559
Japanese	Papuan	Jomon	Mbuti	0.1102589362	0.005395148503	20.43668236	351262	559
Japanese	Yadava	Jomon	Mbuti	0.1132015317	0.004835837077	23.40888038	326718	559
Japanese	Maori	Jomon	Mbuti	0.1162324356	0.005900139426	19.69994728	277389	559
Japanese	Irula	Jomon	Mbuti	0.1164404676	0.005228348741	22.27098333	327103	559
Japanese	Brahmin	Jomon	Mbuti	0.1219245487	0.004821698641	25.28663812	329822	559
Japanese	Kashmiri_Pandit	Jomon	Mbuti	0.1236612465	0.005988094546	20.6511847	293845	559
Japanese	French	Jomon	Mbuti	0.1382493364	0.005245133512	26.35763915	331282	559

Table S14. D(X,Jomon;Japanese,Mbuti).								
H1pop	**H2pop**	**H3pop**	**H4pop**	**D**	**SE**	**Z**	**nSNPs**	**nBlocks**
French	Jomon	Japanese	Mbuti	-0.1487837842	0.00492939697	-30.18295851	300383	560
Kashmiri_Pandit	Jomon	Japanese	Mbuti	-0.1283062473	0.00549924685	-23.33160355	224559	560
Brahmin	Jomon	Japanese	Mbuti	-0.1274335682	0.004713311067	-27.03695266	306907	560
Irula	Jomon	Japanese	Mbuti	-0.1222780897	0.005111551845	-23.92191128	303096	560
Madiga	Jomon	Japanese	Mbuti	-0.1156470947	0.004874834951	-23.72328414	304413	560
Yadava	Jomon	Japanese	Mbuti	-0.1137642658	0.004919105926	-23.12702096	301645	560
Mala	Jomon	Japanese	Mbuti	-0.1134656166	0.004659714796	-24.35033506	343715	560
Relli	Jomon	Japanese	Mbuti	-0.1130354068	0.004995753422	-22.62629823	304187	560
Papuan	Jomon	Japanese	Mbuti	-0.1121565467	0.005379760664	-20.8478692	361986	560
Bengali	Jomon	Japanese	Mbuti	-0.1117194419	0.005094297009	-21.93029611	305227	560
Australian	Jomon	Japanese	Mbuti	-0.1104874016	0.005629256809	-19.62735142	273981	560
La368	Jomon	Japanese	Mbuti	-0.1103679537	0.006230472246	-17.71421961	70595	556
Kapu	Jomon	Japanese	Mbuti	-0.1097675259	0.004929613106	-22.26696569	306679	559
Ma911	Jomon	Japanese	Mbuti	-0.1090941436	0.007894953623	-13.81821209	17539	553
Kurumba	Jomon	Japanese	Mbuti	-0.1064536857	0.005503873957	-19.34159222	217429	559
Maori	Jomon	Japanese	Mbuti	-0.0978593606	0.005593825197	-17.49417566	218506	560
Bougainville	Jomon	Japanese	Mbuti	-0.0931085886	0.005722867235	-16.26956992	269122	560
Onge	Jomon	Japanese	Mbuti	-0.09212936113	0.005473771204	-16.8310581	268428	560
Jarawa	Jomon	Japanese	Mbuti	-0.09145673407	0.005229596502	-17.48829647	301435	560
Onge2	Jomon	Japanese	Mbuti	-0.08965839443	0.005149529858	-17.41098642	320504	560
Kharia	Jomon	Japanese	Mbuti	-0.08716844886	0.005444268522	-16.01104878	222314	560
Khonda_Dora	Jomon	Japanese	Mbuti	-0.07951626912	0.00555191	-14.32232675	218747	560
Uygur	Jomon	Japanese	Mbuti	-0.07707959449	0.005001029983	-15.41274392	303893	559
Jehai	Jomon	Japanese	Mbuti	-0.0612866629	0.005366514126	-11.42019968	187682	559
Kusunda	Jomon	Japanese	Mbuti	-0.05235489701	0.00543915539	-9.625556406	281342	559
Vt880	Jomon	Japanese	Mbuti	-0.04683571631	0.008296454942	-5.645268568	16272	553
Mixe	Jomon	Japanese	Mbuti	-0.03848809137	0.005150793338	-7.472264726	295351	558
Surui	Jomon	Japanese	Mbuti	-0.0363311332	0.005509032114	-6.594830534	243674	559
Surui2	Jomon	Japanese	Mbuti	-0.03607957269	0.005503902196	-6.555271406	245519	559
In661	Jomon	Japanese	Mbuti	-0.03569174288	0.01038703877	-3.436180772	7967	552
Karitiana	Jomon	Japanese	Mbuti	-0.03367347521	0.005232482067	-6.435468823	271773	559
In662	Jomon	Japanese	Mbuti	-0.03359650354	0.008588604691	-3.911753392	14659	557
La898	Jomon	Japanese	Mbuti	-0.02630612199	0.008700193566	-3.02362491	13102	556
Vt833	Jomon	Japanese	Mbuti	-0.02630117758	0.008225224341	-3.197624343	18103	556
Th703	Jomon	Japanese	Mbuti	-0.02533795145	0.008108870517	-3.124720193	15711	555
La727	Jomon	Japanese	Mbuti	-0.02523074491	0.006443247836	-3.915842686	49095	556
Cambodian	Jomon	Japanese	Mbuti	-0.02476843726	0.004826544721	-5.131711958	290727	560
La364	Jomon	Japanese	Mbuti	-0.02367984409	0.005664126237	-4.180670257	115042	559
Ma912	Jomon	Japanese	Mbuti	-0.02276572296	0.005676189428	-4.010740524	119988	558
Th521	Jomon	Japanese	Mbuti	-0.02066818471	0.00604663587	-3.418129544	53527	558
Hawaiian	Jomon	Japanese	Mbuti	-0.02054475735	0.005865267344	-3.502782763	206881	559
Vt778	Jomon	Japanese	Mbuti	-0.019825672	0.007343838322	-2.699633507	21012	553
Burmese	Jomon	Japanese	Mbuti	-0.01859917778	0.00473000462	-3.932169051	294608	559
Vt781	Jomon	Japanese	Mbuti	-0.01444933889	0.008093694394	-1.785258769	17187	554
Tibetan	Jomon	Japanese	Mbuti	-0.0142647928	0.00492466208	-2.896603374	289167	560
Thai	Jomon	Japanese	Mbuti	-0.01411521321	0.004682695497	-3.01433506	291479	560
Th519	Jomon	Japanese	Mbuti	-0.01311718778	0.007212237695	-1.81874036	22849	555
Vt779	Jomon	Japanese	Mbuti	-0.01144336126	0.007692503372	-1.487599121	17729	554
Th531	Jomon	Japanese	Mbuti	-0.01128287775	0.01066620842	-1.057815234	8098	555
Sherpa	Jomon	Japanese	Mbuti	-0.0102113788	0.004756216943	-2.14695396	281984	560
Vt777	Jomon	Japanese	Mbuti	-0.009880065949	0.007935753598	-1.245006643	19312	555
Ma554	Jomon	Japanese	Mbuti	-0.00957928562	0.007113614151	-1.346613046	26243	556
Th530	Jomon	Japanese	Mbuti	-0.008897853059	0.009882137481	-0.900397619	8815	470
Ma555	Jomon	Japanese	Mbuti	-0.008052570193	0.005953425956	-1.35259433	65399	559
Vt796	Jomon	Japanese	Mbuti	-0.006022162341	0.008520888914	-0.7067528285	14637	555

Tu	Jomon	Japanese	Mbuti	-0.0050610028470.004900362301		-1.032781361	291961	560
Dusun	Jomon	Japanese	Mbuti	-0.00439337127	0.004924619465	-0.892124011	277744	559
Ma525	Jomon	Japanese	Mbuti	-0.002466840695	0.02397565524	-0.1028893964	1134	453
Lahu	Jomon	Japanese	Mbuti	-0.0013070273610.004853203685		-0.2693122823	282514	559
Vt719	Jomon	Japanese	Mbuti	-0.0012971456280.006683321521		-0.1940869707	35132	557
Vt808	Jomon	Japanese	Mbuti	-0.0000188179030.008692039078		-0.002164958377	14497	555
Daur	Jomon	Japanese	Mbuti	0.00186592913	0.005675595834	0.3287635668	212230	559
Kinh	Jomon	Japanese	Mbuti	0.002423633328	0.004826776631	0.5021225371	287090	560
Oroqen	Jomon	Japanese	Mbuti	0.002599912595	0.005129446395	0.5068602719	283135	558
Mongola	Jomon	Japanese	Mbuti	0.003511690722	0.004700951639	0.7470169853	289122	560
Naxi	Jomon	Japanese	Mbuti	0.00387736034	0.004580370693	0.8465167123	325224	560
Xibo	Jomon	Japanese	Mbuti	0.004252726666	0.004684394532	0.9078498057	284264	559
Yi	Jomon	Japanese	Mbuti	0.004310096206	0.004752281944	0.9069529664	280349	560
Dai	Jomon	Japanese	Mbuti	0.004439376436	0.004545408309	0.9766727508	321699	560
Atayal	Jomon	Japanese	Mbuti	0.005394750258	0.005351302529	1.008119094	202340	559
Igorot	Jomon	Japanese	Mbuti	0.006551472869	0.00480258702	1.364154953	271347	560
Hezhen	Jomon	Japanese	Mbuti	0.008478878719	0.004684519622	1.80997827	287021	560
Miao	Jomon	Japanese	Mbuti	0.009190552123	0.004798516851	1.915290163	282335	560
Ami	Jomon	Japanese	Mbuti	0.01049034073	0.00462604524	2.26766929	276203	560
Han	Jomon	Japanese	Mbuti	0.01395474893	0.004802876464	2.905498203	285703	560
Tujia	Jomon	Japanese	Mbuti	0.01542012945	0.004803150688	3.21041967	280968	560
She	Jomon	Japanese	Mbuti	0.01582205888	0.004689817697	3.37370446	278037	560
Korean	Jomon	Japanese	Mbuti	0.01777470317	0.004708105467	3.775340909	285278	559
Phl534	Jomon	Japanese	Mbuti	0.01936459258	0.01706167295	1.134976192	2778	533
Nivkh	Jomon	Japanese	Mbuti	0.02009961074	0.005137850951	3.912065751	248579	559

Table S15. D(Papuan,Tianyuan;X,Mbuti).

H1pop	H2pop	H3pop	H4pop	D	SE	Z	nSNPs	nBlocks
Papuan	Tianyuan	Th530	Mbuti	-0.0373692208	0.01292367775	-2.891531463	16720	526
Papuan	Tianyuan	Th531	Mbuti	-0.0340706824	0.01254401039	-2.71609169	14353	557
Papuan	Tianyuan	Th703	Mbuti	-0.0305740007	0.00960617564	-3.18274429	28986	556
Papuan	Tianyuan	Ma525	Mbuti	-0.0286778171	0.03130547669	-0.9160639023	1927	517
Papuan	Tianyuan	Nivkh	Mbuti	-0.0254457356	0.005656337846	-4.498623723	286219	559
Papuan	Tianyuan	Vt719	Mbuti	-0.0242895355	0.007556823064	-3.214252249	62709	557
Papuan	Tianyuan	Th521	Mbuti	-0.0236895440	0.0073099073	-3.240744791	95766	558
Papuan	Tianyuan	In661	Mbuti	-0.0232620100	0.01337505337	-1.739208765	13978	556
Papuan	Tianyuan	La898	Mbuti	-0.0217506468	0.01024085518	-2.123909231	25075	557
Papuan	Tianyuan	Hezhen	Mbuti	-0.0214415498	0.005334529052	-4.019389446	291673	559
Papuan	Tianyuan	Xibo	Mbuti	-0.0205339988	0.005147513577	-3.989110179	290593	559
Papuan	Tianyuan	Vt777	Mbuti	-0.0194162533	0.009460971139	-2.052247388	34820	558
Papuan	Tianyuan	Tibetan	Mbuti	-0.0193276472	0.005183867702	-3.728422158	291212	559
Papuan	Tianyuan	La727	Mbuti	-0.0191257324	0.007292803455	-2.622548723	81938	557
Papuan	Tianyuan	Vt779	Mbuti	-0.0188297054	0.009481032145	-1.986039614	31671	556
Papuan	Tianyuan	Vt778	Mbuti	-0.0187631376	0.009184319896	-2.042953402	39747	557
Papuan	Tianyuan	Oroqen	Mbuti	-0.0186559960	0.005378268225	-3.468773825	290983	559
Papuan	Tianyuan	Yi	Mbuti	-0.0184069390	0.005240033231	-3.512752338	288241	559
Papuan	Tianyuan	Sherpa	Mbuti	-0.0183988477	0.005460589149	-3.369388767	290628	559
Papuan	Tianyuan	Vt833	Mbuti	-0.0178463715	0.009497744741	-1.87901149	32075	556
Papuan	Tianyuan	Vt796	Mbuti	-0.0176821842	0.01009441909	-1.751679222	26091	556
Papuan	Tianyuan	Burmese	Mbuti	-0.0172120269	0.005154029398	-3.339528278	291999	559
Papuan	Tianyuan	Th519	Mbuti	-0.0169334582	0.008626413819	-1.962977726	42324	557
Papuan	Tianyuan	Han	Mbuti	-0.0165276401	0.005174523899	-3.194040725	291978	559
Papuan	Tianyuan	Japanese	Mbuti	-0.0164698649	0.005141219594	-3.203493769	300636	559
Papuan	Tianyuan	Naxi	Mbuti	-0.0158934002	0.005034928976	-3.156628478	300879	559
Papuan	Tianyuan	Vt781	Mbuti	-0.0158337255	0.009895372565	-1.600114137	30892	556
Papuan	Tianyuan	Ami	Mbuti	-0.0156205853	0.005465754787	-2.857900855	289544	559
Papuan	Tianyuan	Dai	Mbuti	-0.0156086775	0.005049518952	-3.091121681	300518	559
Papuan	Tianyuan	Lahu	Mbuti	-0.0154877284	0.005275702467	-2.935671316	291437	559
Papuan	Tianyuan	La364	Mbuti	-0.0154188433	0.006425283285	-2.399714162	204041	559
Papuan	Tianyuan	Korean	Mbuti	-0.0152466208	0.005379433514	-2.834242825	290645	559
Papuan	Tianyuan	Mongola	Mbuti	-0.0151438054	0.005410987975	-2.798713552	291275	559
Papuan	Tianyuan	Surui	Mbuti	-0.0150454054	0.005946734561	-2.530028071	282266	559
Papuan	Tianyuan	Atayal	Mbuti	-0.0148960456	0.005999189236	-2.483009796	261359	559
Papuan	Tianyuan	Tujia	Mbuti	-0.0143633727	0.00534174031	-2.688893862	289553	559
Papuan	Tianyuan	Miao	Mbuti	-0.0139156677	0.005518556046	-2.52161392	290057	559
Papuan	Tianyuan	Daur	Mbuti	-0.0138252822	0.006108018847	-2.263464236	263451	559
Papuan	Tianyuan	Igorot	Mbuti	-0.0136544732	0.005576645148	-2.448510324	288680	559
Papuan	Tianyuan	Kinh	Mbuti	-0.0135023391	0.005327733555	-2.534349539	291815	559
Papuan	Tianyuan	Ma912	Mbuti	-0.0126189167	0.006865733327	-1.837956143	217089	559
Papuan	Tianyuan	She	Mbuti	-0.0114226429	0.005615206497	-2.034233814	288649	559
Papuan	Tianyuan	Thai	Mbuti	-0.0113521011	0.00507869022	-2.23524188	291907	559
Papuan	Tianyuan	Tu	Mbuti	-0.0111000084	0.005112860359	-2.170997764	292065	559
Papuan	Tianyuan	Karitiana	Mbuti	-0.0109659771	0.005630313875	-1.947667103	289686	559
Papuan	Tianyuan	Mixe	Mbuti	-0.0107992199	0.005464351062	-1.976304188	294586	559
Papuan	Tianyuan	Kusunda	Mbuti	-0.0101332740	0.005215710025	-1.942836911	289576	559
Papuan	Tianyuan	Cambodian	Mbuti	-0.0098626745	0.005381499705	-1.832700004	292763	559
Papuan	Tianyuan	Uygur	Mbuti	-0.0088345337	0.004861923451	-1.817086127	292399	559
Papuan	Tianyuan	Phl534	Mbuti	-0.0088222386	0.0205904913	-0.4284617814	4891	549
Papuan	Tianyuan	Jomon	Mbuti	-0.0088060119	0.006949851961	-1.267079068	211820	558
Papuan	Tianyuan	Kharia	Mbuti	-0.0085480071	0.005776610182	-1.479761798	265753	559
Papuan	Tianyuan	Dusun	Mbuti	-0.0073703788	0.005211654634	-1.414210907	290354	559
Papuan	Tianyuan	Ma555	Mbuti	-0.0072760533	0.007316410949	-0.994483958	114520	558
Papuan	Tianyuan	Kurumba	Mbuti	-0.0072158783	0.005937556817	-1.215294191	264035	559

Papuan	Tianyuan	Bengali	Mbuti	-0.0053662273	0.004802538868	-1.117373009	293341	559
Papuan	Tianyuan	French	Mbuti	-0.0039816372	0.005158818153	-0.7718118898	290426	559
Papuan	Tianyuan	In662	Mbuti	-0.0039306071	0.01039455984	-0.3781407949	25185	556
Papuan	Tianyuan	Vt880	Mbuti	-0.0038672295	0.01059693181	-0.3649386014	27075	555
Papuan	Tianyuan	Kashmiri_Pandit	Mbuti	-0.0038192808	0.005551623415	-0.6879574703	263670	559
Papuan	Tianyuan	Brahmin	Mbuti	-0.0037227159	0.004704051783	-0.7913849725	292111	559
Papuan	Tianyuan	Jehai	Mbuti	-0.0034508021	0.005842576579	-0.5906301953	273305	559
Papuan	Tianyuan	La368	Mbuti	-0.0024472526	0.006866846471	-0.3563866811	115589	557
Papuan	Tianyuan	Madiga	Mbuti	-0.0016637255	0.004778420449	-0.3481747732	292412	559
Papuan	Tianyuan	Kapu	Mbuti	-0.0014261494	0.004647232401	-0.3068814382	293507	559
Papuan	Tianyuan	Ma554	Mbuti	-0.0013656350	0.00894702165	-0.1526357107	43470	557
Papuan	Tianyuan	Mala	Mbuti	-0.0011911015	0.004703261077	-0.2532501343	303296	559
Papuan	Tianyuan	Irula	Mbuti	-0.0004909979	0.004735224924	-0.1036905032	291750	559
Papuan	Tianyuan	Ma911	Mbuti	-0.0000810486	0.01056804051	-0.007669220146	28459	556
Papuan	Tianyuan	Khonda_Dora	Mbuti	-0.0000243654	0.006069812066	-0.004014188746	264229	559
Papuan	Tianyuan	Vt808	Mbuti	0.0036816069	0.01081315959	0.3404746696	25462	556
Papuan	Tianyuan	Yadava	Mbuti	0.0041318490	0.004681895348	0.8825162988	290903	559
Papuan	Tianyuan	Mbuti2	Mbuti	0.0041832515	0.002654094308	1.576150274	254047	558
Papuan	Tianyuan	Relli	Mbuti	0.0052046473	0.004947729938	1.051926314	292478	559
Papuan	Tianyuan	Onge	Mbuti	0.0067704724	0.005426644918	1.247635043	287764	559
Papuan	Tianyuan	Hawaiian	Mbuti	0.0078811565	0.006225598998	1.26592742	254028	559
Papuan	Tianyuan	Jarawa	Mbuti	0.0116613144	0.00541755766	2.152503967	295301	559
Papuan	Tianyuan	Maori	Mbuti	0.0170316425	0.005962312744	2.856549664	250227	559
Papuan	Tianyuan	Bougainville	Mbuti	0.1634818952	0.005800923169	28.182048	291513	559
Papuan	Tianyuan	Australian	Mbuti	0.1815953306	0.005792351114	31.35088447	293523	559

Table S16. D(X,Tianyuan;Papuan,Mbuti).

H1pop	H2pop	H3pop	H4pop	D	SE	Z	nSNPs	nBlocks
Kashmiri_Pandit	Tianyuan	Papuan	Mbuti	-0.03706567899	0.005441906132	-6.811157358	192904	558
Uygur	Tianyuan	Papuan	Mbuti	-0.02330613985	0.004868325516	-4.787301049	258340	559
Irula	Tianyuan	Papuan	Mbuti	-0.02030132248	0.005153444793	-3.939369354	257457	559
Bengali	Tianyuan	Papuan	Mbuti	-0.01977639368	0.005034478923	-3.928190779	259877	559
Relli	Tianyuan	Papuan	Mbuti	-0.01923072577	0.004989959035	-3.853884498	259864	559
Th530	Tianyuan	Papuan	Mbuti	-0.01640404908	0.0110625974	-1.482838838	8299	490
Madiga	Tianyuan	Papuan	Mbuti	-0.01537067706	0.005060578691	-3.037335847	258828	559
Kapu	Tianyuan	Papuan	Mbuti	-0.01451068026	0.004893492237	-2.965301579	260981	557
Mala	Tianyuan	Papuan	Mbuti	-0.01269762513	0.004840325987	-2.623299581	292424	559
Yadava	Tianyuan	Papuan	Mbuti	-0.01258902053	0.005106885536	-2.465107243	256573	559
Maori	Tianyuan	Papuan	Mbuti	-0.008469895654	0.005695730452	-1.487060479	185883	558
Mixe	Tianyuan	Papuan	Mbuti	-0.007409411403	0.005219546254	-1.419550866	253529	558
Kharia	Tianyuan	Papuan	Mbuti	-0.00603314041	0.005534601285	-1.090076791	189842	559
Kurumba	Tianyuan	Papuan	Mbuti	-0.005591924832	0.005692861854	-0.9822695465	186188	558
Kusunda	Tianyuan	Papuan	Mbuti	0.000252652259	0.005294096853	-0.04772339199	239488	558
Khonda_Dora	Tianyuan	Papuan	Mbuti	0.001076468959	0.00549609953	0.1958605285	187648	558
Th531	Tianyuan	Papuan	Mbuti	0.002684175605	0.01170905278	0.2292393463	7044	552
Surui	Tianyuan	Papuan	Mbuti	0.003026714024	0.005659384325	0.534813303	209189	558
Xibo	Tianyuan	Papuan	Mbuti	0.004018261568	0.005073210406	0.7920549803	242395	559
Tibetan	Tianyuan	Papuan	Mbuti	0.005281483178	0.004882810394	1.081648221	244583	559
Th703	Tianyuan	Papuan	Mbuti	0.005343534198	0.009276378672	0.5760366612	13979	555
Burmese	Tianyuan	Papuan	Mbuti	0.005690495887	0.004946816874	1.150334858	250127	558
Oroqen	Tianyuan	Papuan	Mbuti	0.006220014857	0.005140401783	1.210025037	241086	558
La368	Tianyuan	Papuan	Mbuti	0.006574138559	0.006556852501	1.002636335	57396	557
Hezhen	Tianyuan	Papuan	Mbuti	0.007043927939	0.005072760399	1.388578877	243713	559
Th521	Tianyuan	Papuan	Mbuti	0.007454174851	0.006554340199	1.137288365	46522	557
Sherpa	Tianyuan	Papuan	Mbuti	0.007893762505	0.005066589161	1.558003275	239447	559
Daur	Tianyuan	Papuan	Mbuti	0.00789553526	0.005562706723	1.41936932	182470	559
Ma525	Tianyuan	Papuan	Mbuti	0.008422782919	0.02910515538	0.2893914431	950	431
Ma911	Tianyuan	Papuan	Mbuti	0.008607649779	0.009142570722	0.9414911888	14030	553
Mongola	Tianyuan	Papuan	Mbuti	0.008851467887	0.005107783857	1.73293705	245506	559
Cambodian	Tianyuan	Papuan	Mbuti	0.00898886208	0.005119326109	1.755868231	248916	559
Vt777	Tianyuan	Papuan	Mbuti	0.009090007267	0.008603351438	1.056565843	16688	555
Korean	Tianyuan	Papuan	Mbuti	0.009784666737	0.005143194841	1.902449166	242956	559
Kinh	Tianyuan	Papuan	Mbuti	0.0102673922	0.005281023978	1.944204806	244737	559
Thai	Tianyuan	Papuan	Mbuti	0.01052789796	0.004843706126	2.173521201	247772	559
Jomon	Tianyuan	Papuan	Mbuti	0.01123018843	0.006270491243	1.790958314	105344	557
Naxi	Tianyuan	Papuan	Mbuti	0.01146976755	0.004756287698	2.411495746	275594	559
Atayal	Tianyuan	Papuan	Mbuti	0.0114942086	0.005733906308	2.004603491	175891	557
Japanese	Tianyuan	Papuan	Mbuti	0.01151043618	0.00507324692	2.268849981	274231	559
Dai	Tianyuan	Papuan	Mbuti	0.01183790623	0.004899581616	2.416105529	273501	559
Yi	Tianyuan	Papuan	Mbuti	0.01187536587	0.005052740067	2.350282364	237973	559
Nivkh	Tianyuan	Papuan	Mbuti	0.0118777541	0.005192652025	2.287415764	225431	559
La364	Tianyuan	Papuan	Mbuti	0.01280370905	0.005861432575	2.184399273	101118	557
Vt833	Tianyuan	Papuan	Mbuti	0.0128393695	0.008108014345	1.583540551	15566	554
La727	Tianyuan	Papuan	Mbuti	0.01286085955	0.006597588587	1.9493273	40393	558
Ami	Tianyuan	Papuan	Mbuti	0.01294881441	0.005256430375	2.463423556	236717	559
Igorot	Tianyuan	Papuan	Mbuti	0.01307833354	0.00534269387	2.447891243	232858	558
Jehai	Tianyuan	Papuan	Mbuti	0.01325327929	0.005232029216	2.533104985	162906	559
Han	Tianyuan	Papuan	Mbuti	0.01327800364	0.005093366818	2.606920749	244042	559
Miao	Tianyuan	Papuan	Mbuti	0.01349964654	0.005085650275	2.65445829	240449	559
Lahu	Tianyuan	Papuan	Mbuti	0.01350719711	0.005090197878	2.653570142	241604	559
Tujia	Tianyuan	Papuan	Mbuti	0.01370988423	0.005063518798	2.707580396	239558	559
Dusun	Tianyuan	Papuan	Mbuti	0.01583981769	0.00524389196	3.020622433	237971	557
She	Tianyuan	Papuan	Mbuti	0.01657830103	0.005083741886	3.261043027	236668	559

Ma912	Tianyuan	Papuan	Mbuti	0.01714753351	0.005856116287	2.928140882	106901	557
Ma554	Tianyuan	Papuan	Mbuti	0.01736742969	0.008044850954	2.158825538	21577	556
Onge	Tianyuan	Papuan	Mbuti	0.01755971845	0.005309902627	3.306975605	229934	558
In662	Tianyuan	Papuan	Mbuti	0.01760687904	0.009303062037	1.892589662	12493	555
Vt779	Tianyuan	Papuan	Mbuti	0.01797116984	0.008551588144	2.10150086	14967	552
Vt781	Tianyuan	Papuan	Mbuti	0.01853561159	0.009037228839	2.051028243	14743	553
Vt778	Tianyuan	Papuan	Mbuti	0.01966006264	0.008493619613	2.314686027	19312	554
La898	Tianyuan	Papuan	Mbuti	0.02028851561	0.009052186139	2.24128352	12232	556
Th519	Tianyuan	Papuan	Mbuti	0.02114231275	0.007981817211	2.648809437	20569	557
Jarawa	Tianyuan	Papuan	Mbuti	0.02228960096	0.00519291037	4.292313822	258349	558
Vt796	Tianyuan	Papuan	Mbuti	0.02346610802	0.008991032402	2.609945886	12471	553
Vt808	Tianyuan	Papuan	Mbuti	0.02364477975	0.00962546301	2.456482325	12306	554
Vt880	Tianyuan	Papuan	Mbuti	0.0237964431	0.009591086836	2.481099745	13260	555
Ma555	Tianyuan	Papuan	Mbuti	0.0252449626	0.006426816972	3.928066213	56366	558
Phl534	Tianyuan	Papuan	Mbuti	0.03587085596	0.01874180423	1.913948919	2335	527
Bougainville	Tianyuan	Papuan	Mbuti	0.1623488825	0.005497020251	29.53397933	235383	559
Australian	Tianyuan	Papuan	Mbuti	0.1823764223	0.005194518003	35.10940229	240354	559

Table S17. D(Papuan,X;Tianyuan,Papuan).								
H1pop	**H2pop**	**H3pop**	**H4pop**	**D**	**SE**	**Z**	**nSNPs**	**nBlocks**
Papuan	Phl534	Tianyuan	Mbuti	-0.04467895538	0.02109399182	-2.118089158	4864	550
Papuan	La898	Tianyuan	Mbuti	-0.04202061924	0.01049286797	-4.004683882	25173	557
Papuan	Vt796	Tianyuan	Mbuti	-0.04113122553	0.009801160272	-4.196566976	26142	555
Papuan	Vt778	Tianyuan	Mbuti	-0.03840903172	0.009183189367	-4.182537263	39701	557
Papuan	Th519	Tianyuan	Mbuti	-0.03806214421	0.008765637933	-4.342198994	42326	557
Papuan	Nivkh	Tianyuan	Mbuti	-0.03731221254	0.005556115259	-6.715521691	279009	559
Papuan	Ma525	Tianyuan	Mbuti	-0.03709164068	0.03246475977	-1.142520103	1942	520
Papuan	Vt779	Tianyuan	Mbuti	-0.03678842636	0.009567815504	-3.845018369	31715	555
Papuan	Th531	Tianyuan	Mbuti	-0.03675149701	0.01324513054	-2.774717614	14427	555
Papuan	Th703	Tianyuan	Mbuti	-0.03591166786	0.01015112446	-3.537703435	29070	556
Papuan	Vt719	Tianyuan	Mbuti	-0.03576047314	0.007476749498	-4.782890365	62845	558
Papuan	Vt781	Tianyuan	Mbuti	-0.0343592531	0.01004854416	-3.419326477	30986	556
Papuan	Ma555	Tianyuan	Mbuti	-0.03251504344	0.007379410156	-4.406184607	114440	559
Papuan	La727	Tianyuan	Mbuti	-0.03197872602	0.007292619087	-4.385081085	82050	558
Papuan	Dai2	Tianyuan	Mbuti	-0.03156571437	0.005957869343	-5.298154852	260750	559
Papuan	Th521	Tianyuan	Mbuti	-0.03113822028	0.007359001569	-4.231310456	96158	558
Papuan	Vt833	Tianyuan	Mbuti	-0.0306787114	0.009989182797	-3.071193312	32148	555
Papuan	Yi	Tianyuan	Mbuti	-0.03027568692	0.005475517007	-5.529283697	279454	559
Papuan	Han	Tianyuan	Mbuti	-0.02979910417	0.00535002896	-5.569895863	283037	559
Papuan	Ma912	Tianyuan	Mbuti	-0.02976001069	0.006756076188	-4.404925264	217135	559
Papuan	Lahu	Tianyuan	Mbuti	-0.02898886116	0.00543472798	-5.33400407	282649	559
Papuan	Ami	Tianyuan	Mbuti	-0.02856362218	0.005542869606	-5.153219219	280749	559
Papuan	Vt777	Tianyuan	Mbuti	-0.02850123029	0.009158203628	-3.112098337	34971	557
Papuan	Hezhen	Tianyuan	Mbuti	-0.02848117612	0.005367789104	-5.305941714	284143	559
Papuan	La364	Tianyuan	Mbuti	-0.0282169818	0.006417839117	-4.396648355	204075	559
Papuan	Tujia	Tianyuan	Mbuti	-0.02806772986	0.005417321952	-5.181107955	281588	559
Papuan	She	Tianyuan	Mbuti	-0.02799564248	0.005625551131	-4.976515514	280411	559
Papuan	Japanese	Tianyuan	Mbuti	-0.02797499775	0.005146741913	-5.435477088	291334	559
Papuan	Vt880	Tianyuan	Mbuti	-0.02766112703	0.01030750344	-2.683591345	27090	554
Papuan	Dai	Tianyuan	Mbuti	-0.02744151326	0.005079788028	-5.402098102	291039	559
Papuan	Miao	Tianyuan	Mbuti	-0.0274101651	0.005512596425	-4.972278575	281667	559
Papuan	Naxi	Tianyuan	Mbuti	-0.02735818052	0.005202345912	-5.258816117	291622	559
Papuan	Igorot	Tianyuan	Mbuti	-0.02672803372	0.005734587544	-4.66084675	280461	559
Papuan	In661	Tianyuan	Mbuti	-0.02645549459	0.01335837068	-1.980443215	14014	555
Papuan	Atayal	Tianyuan	Mbuti	-0.02638573652	0.006257653419	-4.216554474	256350	559
Papuan	Sherpa	Tianyuan	Mbuti	-0.02628879216	0.00537991494	-4.886469852	282054	559
Papuan	Korean	Tianyuan	Mbuti	-0.02502755389	0.005464139789	-4.580328259	282308	559
Papuan	Oroqen	Tianyuan	Mbuti	-0.02487312461	0.005561141921	-4.472664961	283138	559
Papuan	Tibetan	Tianyuan	Mbuti	-0.02460661857	0.005359090036	-4.591566554	283135	559
Papuan	Xibo	Tianyuan	Mbuti	-0.02455023471	0.00541008288	-4.537866657	282364	559
Papuan	Mongola	Tianyuan	Mbuti	-0.02399205725	0.005509452123	-4.354708365	283726	559
Papuan	Kinh	Tianyuan	Mbuti	-0.02376643645	0.005436832481	-4.371375526	283375	559
Papuan	Dusun	Tianyuan	Mbuti	-0.02320748715	0.005495826692	-4.222747268	281073	559
Papuan	Burmese	Tianyuan	Mbuti	-0.02290027984	0.005197618115	-4.405918121	284143	559
Papuan	Thai	Tianyuan	Mbuti	-0.02187738438	0.005207813665	-4.20087695	283356	559
Papuan	Daur	Tianyuan	Mbuti	-0.02171844673	0.005883728867	-3.691272528	258846	559
Papuan	In662	Tianyuan	Mbuti	-0.02153599574	0.01063246504	-2.025494151	25138	556
Papuan	Th530	Tianyuan	Mbuti	-0.02097803143	0.01232977261	-1.701412678	16853	525
Papuan	Jomon	Tianyuan	Mbuti	-0.02003421913	0.006762354289	-2.962610102	211857	559
Papuan	Vt808	Tianyuan	Mbuti	-0.01996491077	0.01098328213	-1.817754523	25405	556
Papuan	Cambodian	Tianyuan	Mbuti	-0.01884986549	0.005275650547	-3.572993571	284097	559
Papuan	Ma554	Tianyuan	Mbuti	-0.01873262041	0.009009591517	-2.079186428	43417	557
Papuan	Surui	Tianyuan	Mbuti	-0.01807129646	0.006006038075	-3.008854795	277403	559
Papuan	Jehai	Tianyuan	Mbuti	-0.01670331752	0.005854833553	-2.852910739	270145	559
Papuan	Tu	Tianyuan	Mbuti	-0.01669304205	0.005365609844	-3.111117383	284128	559

Papuan	Hawaiian	Tianyuan	Mbuti	-0.0108336463	0.006347975114	-1.706630242	248895	559
Papuan	Onge	Tianyuan	Mbuti	-0.01079052895	0.005526929619	-1.952355049	278307	559
Papuan	Jarawa	Tianyuan	Mbuti	-0.01063104989	0.005301110573	-2.005438246	285514	559
Papuan	Karitiana	Tianyuan	Mbuti	-0.01051635499	0.005806238547	-1.811216488	283512	559
Papuan	Kusunda	Tianyuan	Mbuti	-0.00988064699	0.005396087349	-1.831076176	282926	559
Papuan	La368	Tianyuan	Mbuti	-0.009021246043	0.007096431459	-1.271236972	115893	557
Papuan	Ma911	Tianyuan	Mbuti	-0.008688692346	0.01115596303	-0.7788383954	28483	556
Papuan	Mixe2	Tianyuan	Mbuti	-0.003887645217	0.00557067961	-0.6978762897	288066	559
Papuan	Mixe	Tianyuan	Mbuti	-0.003390079744	0.005542438669	-0.6116585038	288238	559
Papuan	Kharia	Tianyuan	Mbuti	-0.002514996363	0.006253127033	-0.4021981882	262101	558
Papuan	Kurumba	Tianyuan	Mbuti	-0.001624019004	0.006062964963	-0.2678588799	260216	559
Papuan	Khonda_Dora	Tianyuan	Mbuti	-0.001100834301	0.005816859813	-0.1892488966	259720	559
Papuan	Australian	Tianyuan	Mbuti	0.000807846473	0.00432096916	-0.1869595555	263340	559
Papuan	Bougainville	Tianyuan	Mbuti	0.001163904008	0.004826095898	0.2411688522	266499	559
Papuan	Mala	Tianyuan	Mbuti	0.01150669766	0.004967904007	2.31620773	298162	559
Papuan	Kapu	Tianyuan	Mbuti	0.01308480168	0.005133961764	2.548675327	288814	559
Papuan	Madiga	Tianyuan	Mbuti	0.01370730214	0.005053910338	2.71221712	287707	559
Papuan	Bengali	Tianyuan	Mbuti	0.01441169581	0.005183459867	2.780323603	289061	559
Papuan	Uygur	Tianyuan	Mbuti	0.0144745865	0.005106949101	2.834292297	288573	559
Papuan	Yadava	Tianyuan	Mbuti	0.01671999977	0.005141033368	3.252264394	286587	559
Papuan	Irula	Tianyuan	Mbuti	0.0198105221	0.005224286627	3.792005208	286805	559
Papuan	Relli	Tianyuan	Mbuti	0.02443292762	0.005302996237	4.607381662	288338	559
Papuan	Brahmin	Tianyuan	Mbuti	0.02509296376	0.004964996165	5.053974449	289570	559
Papuan	Maori	Tianyuan	Mbuti	0.0254978599	0.0060217346	4.234304829	247654	559
Papuan	Kashmiri_Pandit	Tianyuan	Mbuti	0.03325110536	0.005953849	5.584808307	263729	559
Papuan	French	Tianyuan	Mbuti	0.04562526865	0.005522969985	8.261002463	292035	559

Table S18. D(Onge,Tianyuan;X,Mbuti).

H1pop	H2pop	H3pop	H4pop	D	SE	Z	nSNPs	nBlocks
Onge	Tianyuan	Th703	Mbuti	-0.01758974621	0.01026493868	-1.71357538	21550	556
Onge	Tianyuan	Vt719	Mbuti	-0.01234986209	0.008029925432	-1.537979673	46788	557
Onge	Tianyuan	In661	Mbuti	-0.01234313355	0.01356101637	-0.9101923641	10345	553
Onge	Tianyuan	Vt779	Mbuti	-0.004831941149	0.01023573737	-0.4720657608	23456	555
Onge	Tianyuan	Th519	Mbuti	-0.003257169275	0.008907780256	-0.3656544258	31500	557
Onge	Tianyuan	Ma525	Mbuti	-0.002883630715	0.03344237494	-0.08622685203	1428	488
Onge	Tianyuan	Hezhen	Mbuti	-0.001869168073	0.005329249608	-0.3507375729	218162	558
Onge	Tianyuan	Nivkh	Mbuti	-0.001678901431	0.005993427362	-0.2801237639	213961	558
Onge	Tianyuan	Th531	Mbuti	-0.001257474053	0.01343823817	-0.09357432405	10724	553
Onge	Tianyuan	Yi	Mbuti	0.000989253820	0.005509108527	-0.1795669509	215530	558
Onge	Tianyuan	Surui	Mbuti	0.000265067703	0.005981765664	-0.04431261904	210886	558
Onge	Tianyuan	Mongola	Mbuti	0.000245207248	0.005630999407	-0.04354595528	217921	558
Onge	Tianyuan	Tibetan	Mbuti	0.000169227745	0.00544166588	-0.03109851814	217871	558
Onge	Tianyuan	Sherpa	Mbuti	0.001476302755	0.005628754076	0.2622787804	217332	558
Onge	Tianyuan	Vt833	Mbuti	0.002868383399	0.009837777653	0.2915682281	23600	555
Onge	Tianyuan	Vt777	Mbuti	0.00291743355	0.009778785574	0.2983431356	25811	557
Onge	Tianyuan	Oroqen	Mbuti	0.003135515082	0.00531071234	0.5904132781	217924	558
Onge	Tianyuan	Xibo	Mbuti	0.003188623484	0.005289151384	0.602861074	217442	558
Onge	Tianyuan	Ma555	Mbuti	0.003665700469	0.00773354332	0.4740001209	85129	557
Onge	Tianyuan	Japanese	Mbuti	0.003676234034	0.005282451831	0.695933281	224715	558
Onge	Tianyuan	Daur	Mbuti	0.003800579999	0.006236446015	0.6094143988	197089	558
Onge	Tianyuan	Tujia	Mbuti	0.003991507432	0.005408241167	0.7380416866	216528	558
Onge	Tianyuan	Vt778	Mbuti	0.004839007881	0.009334193413	0.5184173572	29661	557
Onge	Tianyuan	Naxi	Mbuti	0.00488649199	0.005254665981	0.9299338925	225001	558
Onge	Tianyuan	Han	Mbuti	0.005001444269	0.005383962037	0.9289523654	218377	558
Onge	Tianyuan	La898	Mbuti	0.005491390424	0.01032262242	0.5319762946	18609	557
Onge	Tianyuan	Dai	Mbuti	0.005675715475	0.005083459568	1.116506466	224689	558
Onge	Tianyuan	Ma554	Mbuti	0.00573265083	0.009253597404	0.6195051049	32308	556
Onge	Tianyuan	Vt796	Mbuti	0.005802389565	0.01085312975	0.5346282317	19427	556
Onge	Tianyuan	Th521	Mbuti	0.005948815948	0.007647663628	0.7778605647	71056	557
Onge	Tianyuan	Miao	Mbuti	0.006128321472	0.005494939017	1.115266512	216870	558
Onge	Tianyuan	Th530	Mbuti	0.006473139897	0.01335258298	0.484785596	12492	513
Onge	Tianyuan	Burmese	Mbuti	0.006518162828	0.005225921921	1.247275203	218441	558
Onge	Tianyuan	Atayal	Mbuti	0.006726388716	0.00646444095	1.040521333	195256	558
Onge	Tianyuan	Igorot	Mbuti	0.007600556528	0.00583986515	1.301495212	215869	558
Onge	Tianyuan	Lahu	Mbuti	0.007912469063	0.005477832986	1.444452411	218247	558
Onge	Tianyuan	Maori	Mbuti	0.00795813422	0.00578224591	1.376305045	186251	558
Onge	Tianyuan	French	Mbuti	0.008103539495	0.005212883112	1.554521619	216429	558
Onge	Tianyuan	Mixe	Mbuti	0.008260859384	0.005406213901	1.528030436	220266	558
Onge	Tianyuan	La364	Mbuti	0.008339177764	0.006353937605	1.312442501	152071	558
Onge	Tianyuan	Dai2	Mbuti	0.008473804786	0.006344901485	1.335529764	199728	558
Onge	Tianyuan	Ami	Mbuti	0.008725324346	0.00557145776	1.566075652	216522	558
Onge	Tianyuan	Korean	Mbuti	0.008729872988	0.005612952607	1.555308516	217419	558
Onge	Tianyuan	She	Mbuti	0.008834156681	0.005554863723	1.590346248	216011	558
Onge	Tianyuan	La727	Mbuti	0.00895645501	0.007765993393	1.153291608	61055	557
Onge	Tianyuan	Karitiana	Mbuti	0.00901828973	0.005615872105	1.605857392	216592	558
Onge	Tianyuan	Ma912	Mbuti	0.009170463285	0.006709053614	1.36687882	161343	558
Onge	Tianyuan	Jomon	Mbuti	0.009351412232	0.006982355922	1.339291829	157746	558
Onge	Tianyuan	Kusunda	Mbuti	0.01169370845	0.005281596009	2.21404826	216709	558
Onge	Tianyuan	Hawaiian	Mbuti	0.01180609731	0.006423087301	1.838072061	189549	558
Onge	Tianyuan	Kinh	Mbuti	0.0121430449	0.005403715792	2.247165723	218440	558
Onge	Tianyuan	Tu	Mbuti	0.01236047735	0.005211569097	2.37173817	218400	558
Onge	Tianyuan	In662	Mbuti	0.01239909578	0.01126103578	1.101061752	18823	555
Onge	Tianyuan	Thai	Mbuti	0.01319114228	0.005283731487	2.496558031	218486	558
Onge	Tianyuan	Kharia	Mbuti	0.01371220977	0.005963022451	2.299540189	199382	558

Onge	Tianyuan	Brahmin	Mbuti	0.01403774501	0.00454854825	3.086203385	218096	558
Onge	Tianyuan	Uygur	Mbuti	0.01416720148	0.005034357532	2.814103169	218388	558
Onge	Tianyuan	Dusun	Mbuti	0.01439381058	0.005645179064	2.549752703	217099	558
Onge	Tianyuan	Kashmiri_Pandit	Mbuti	0.01473229079	0.005868528435	2.510389265	197328	558
Onge	Tianyuan	Cambodian	Mbuti	0.01570425915	0.00540817256	2.903801419	219030	558
Onge	Tianyuan	Vt781	Mbuti	0.01634657988	0.01013286431	1.613223998	22809	555
Onge	Tianyuan	Australian	Mbuti	0.01725784131	0.005823727843	2.963366726	214700	558
Onge	Tianyuan	Bougainville	Mbuti	0.01742034939	0.005656118863	3.079912181	214022	558
Onge	Tianyuan	Madiga	Mbuti	0.01747945139	0.004913838132	3.55718909	218360	558
Onge	Tianyuan	Papuan	Mbuti	0.01755971845	0.005309902627	3.306975605	229934	558
Onge	Tianyuan	Bengali	Mbuti	0.01778801927	0.004702370835	3.782776794	219184	558
Onge	Tianyuan	Kurumba	Mbuti	0.01796402852	0.005907897185	3.040680628	197822	558
Onge	Tianyuan	Irula	Mbuti	0.01851684791	0.004867156553	3.8044488	217757	558
Onge	Tianyuan	Mala	Mbuti	0.01916662021	0.004569950107	4.194054588	226386	558
Onge	Tianyuan	Vt880	Mbuti	0.01971660471	0.01088376836	1.811560486	20136	554
Onge	Tianyuan	Yadava	Mbuti	0.01975565651	0.004754321142	4.155305442	217221	558
Onge	Tianyuan	Kapu	Mbuti	0.01991846383	0.004635553385	4.296890181	219318	558
Onge	Tianyuan	Khonda_Dora	Mbuti	0.02051604303	0.00614973829	3.336083921	197580	558
Onge	Tianyuan	Phl534	Mbuti	0.02090796435	0.02168934154	0.9639741395	3639	541
Onge	Tianyuan	Relli	Mbuti	0.02465913963	0.004830700289	5.104671818	218371	558
Onge	Tianyuan	Vt808	Mbuti	0.02635327639	0.01147063089	2.297456577	18844	556
Onge	Tianyuan	Ma911	Mbuti	0.0308140648	0.01079197429	2.855275964	21208	555
Onge	Tianyuan	Jehai	Mbuti	0.03092384129	0.005814500559	5.318400261	204020	558
Onge	Tianyuan	La368	Mbuti	0.03708183206	0.006986984887	5.307272401	85856	557
Onge	Tianyuan	Jarawa	Mbuti	0.2099670572	0.005483807557	38.28855316	226159	558

Table S19. D(X,Tianyuan;Onge,Mbuti).								
H1pop	**H2pop**	**H3pop**	**H4pop**	**D**	**SE**	**Z**	**nSNPs**	**nBlocks**
French	Tianyuan	Onge	Mbuti	-0.0483995574	0.005448163447	-8.883646365	240432	559
Kashmiri_Pandit	Tianyuan	Onge	Mbuti	-0.02979610481	0.006095674163	-4.888073741	181313	558
Maori	Tianyuan	Onge	Mbuti	-0.02722549666	0.005838455095	-4.663133691	173748	558
Brahmin	Tianyuan	Onge	Mbuti	-0.02160432089	0.005185378395	-4.166392352	244252	559
Irula	Tianyuan	Onge	Mbuti	-0.01175542554	0.005327947456	-2.206370396	240955	559
Uygur	Tianyuan	Onge	Mbuti	-0.01116340282	0.005230989923	-2.134089911	241889	559
Relli	Tianyuan	Onge	Mbuti	-0.01035504804	0.005372071557	-1.927570757	243209	559
Bengali	Tianyuan	Onge	Mbuti	-0.0074024777280	0.005228238669	-1.415864538	243403	559
Yadava	Tianyuan	Onge	Mbuti	-0.0072577260690	0.005545923615	-1.30865958	240232	559
Madiga	Tianyuan	Onge	Mbuti	-0.0070657709990	0.005218683017	-1.353937569	242294	559
Kapu	Tianyuan	Onge	Mbuti	-0.0041415781340	0.005350196565	-0.7740983127	244371	557
Mala	Tianyuan	Onge	Mbuti	-0.0029795915950	0.005103413867	-0.5838428301	273341	559
Mixe	Tianyuan	Onge	Mbuti	0.00093348372690	0.005547995251	0.1682560429	237392	558
Kharia	Tianyuan	Onge	Mbuti	0.005662622563	0.005848450699	0.9682260917	178478	558
Bougainville	Tianyuan	Onge	Mbuti	0.005748877011	0.005707621541	1.007228137	215739	559
Papuan	Tianyuan	Onge	Mbuti	0.006770472367	0.005426644918	1.247635043	287764	559
Australian	Tianyuan	Onge	Mbuti	0.006943049962	0.005683765975	1.221558029	219397	559
Surui	Tianyuan	Onge	Mbuti	0.006989809474	0.005983622742	1.16815678	195860	558
Kurumba	Tianyuan	Onge	Mbuti	0.008113007583	0.005878912179	1.380018503	174978	558
Karitiana	Tianyuan	Onge	Mbuti	0.00909806276	0.0056323195	1.615331438	218687	558
Kusunda	Tianyuan	Onge	Mbuti	0.01136484765	0.005663377887	2.006725999	224461	558
Vt719	Tianyuan	Onge	Mbuti	0.01137640016	0.008022504092	1.418060998	28859	556
Khonda_Dora	Tianyuan	Onge	Mbuti	0.01137956107	0.006045878895	1.882201292	175913	558
In661	Tianyuan	Onge	Mbuti	0.01169665708	0.01282853794	0.9117685218	6400	548
Hawaiian	Tianyuan	Onge	Mbuti	0.01197887302	0.006088129385	1.967578588	166084	559
Mongola	Tianyuan	Onge	Mbuti	0.01358142886	0.005480715785	2.478039254	229883	559
Tibetan	Tianyuan	Onge	Mbuti	0.01385833716	0.005487698357	2.525346012	229095	559
Daur	Tianyuan	Onge	Mbuti	0.0147134712	0.005739381611	2.563598694	171156	559
Th703	Tianyuan	Onge	Mbuti	0.01499476188	0.01011903963	1.481836462	13066	554
Hezhen	Tianyuan	Onge	Mbuti	0.01616491651	0.00546569482	2.957522702	228119	559
Ma554	Tianyuan	Onge	Mbuti	0.01699116035	0.008651386183	1.963981262	20152	555
Sherpa	Tianyuan	Onge	Mbuti	0.0175241535	0.005490533489	3.191703234	224010	559
Xibo	Tianyuan	Onge	Mbuti	0.01754457803	0.005498205886	3.190964179	226948	559
Oroqen	Tianyuan	Onge	Mbuti	0.01757488984	0.00549331127	3.19932532	225920	558
Tu	Tianyuan	Onge	Mbuti	0.01871732048	0.005613522361	3.334327233	232984	559
Yi	Tianyuan	Onge	Mbuti	0.01909795167	0.005512490479	3.464487013	222646	559
Burmese	Tianyuan	Onge	Mbuti	0.01910234046	0.005352056012	3.569159295	234244	558
Jomon	Tianyuan	Onge	Mbuti	0.0195984666	0.006469992577	3.02913278	98531	557
Vt833	Tianyuan	Onge	Mbuti	0.01989118106	0.009444114888	2.106198548	14523	554
Tujia	Tianyuan	Onge	Mbuti	0.02156586157	0.005425542977	3.974876185	224339	559
Japanese	Tianyuan	Onge	Mbuti	0.02157399352	0.005293570664	4.075508742	256356	559
Naxi	Tianyuan	Onge	Mbuti	0.02194867193	0.005257182623	4.174987537	257737	559
Th530	Tianyuan	Onge	Mbuti	0.02217452646	0.01254592296	1.767468726	7778	481
Dai	Tianyuan	Onge	Mbuti	0.02263164261	0.00524100157	4.318190389	255697	559
Miao	Tianyuan	Onge	Mbuti	0.02303351479	0.005541294299	4.156703027	225020	559
Vt777	Tianyuan	Onge	Mbuti	0.02304952163	0.009193532766	2.507145209	15655	555
Atayal	Tianyuan	Onge	Mbuti	0.02327662157	0.006533214333	3.562813094	164592	557
Vt779	Tianyuan	Onge	Mbuti	0.02354188612	0.009386617944	2.508026454	13976	552
Ma555	Tianyuan	Onge	Mbuti	0.02371350891	0.007020901377	3.377559039	52738	558
Cambodian	Tianyuan	Onge	Mbuti	0.02411098639	0.005434087822	4.436988724	233013	559
Korean	Tianyuan	Onge	Mbuti	0.02412565975	0.005533744296	4.359735192	227515	559
Igorot	Tianyuan	Onge	Mbuti	0.0242040298	0.005639607303	4.29179347	217941	558
Han	Tianyuan	Onge	Mbuti	0.02424553298	0.005508296153	4.401639328	228395	559
Th521	Tianyuan	Onge	Mbuti	0.02448770855	0.007061960633	3.467550986	43533	557
Thai	Tianyuan	Onge	Mbuti	0.02467515231	0.005489901799	4.49464366	232161	559

Nivkh	Tianyuan	Onge	Mbuti	0.02523735739	0.005947003132	4.243710123	210991	559
Th531	Tianyuan	Onge	Mbuti	0.02551277757	0.01271574901	2.006392038	6609	550
La364	Tianyuan	Onge	Mbuti	0.02555212585	0.006429208761	3.97438111	94590	557
Kinh	Tianyuan	Onge	Mbuti	0.0256313852	0.005576282826	4.596500214	229286	559
She	Tianyuan	Onge	Mbuti	0.02609150588	0.005593290745	4.664786272	221745	559
La898	Tianyuan	Onge	Mbuti	0.02630108261	0.01014740461	2.591902424	11472	556
Lahu	Tianyuan	Onge	Mbuti	0.02651490341	0.005355135847	4.951303603	226402	559
In662	Tianyuan	Onge	Mbuti	0.02655332085	0.01059887895	2.505295227	11687	553
Ma912	Tianyuan	Onge	Mbuti	0.02703902932	0.006153805232	4.393871483	100026	557
Ami	Tianyuan	Onge	Mbuti	0.0273349733	0.005625311401	4.859281797	221527	559
Dusun	Tianyuan	Onge	Mbuti	0.02740112449	0.00566788938	4.834449414	222634	557
La727	Tianyuan	Onge	Mbuti	0.02881438718	0.007239024128	3.980424249	37850	558
Vt796	Tianyuan	Onge	Mbuti	0.03054884607	0.009966564099	3.065133156	11713	553
La368	Tianyuan	Onge	Mbuti	0.03144414112	0.006682364645	4.705541045	53720	557
Vt880	Tianyuan	Onge	Mbuti	0.03158605652	0.009850104193	3.206672325	12419	554
Th519	Tianyuan	Onge	Mbuti	0.0324618808	0.008672871066	3.742922102	19214	557
Vt778	Tianyuan	Onge	Mbuti	0.03292312881	0.008623294257	3.817929416	18019	554
Vt781	Tianyuan	Onge	Mbuti	0.03456157943	0.008892200958	3.88672946	13779	553
Ma911	Tianyuan	Onge	Mbuti	0.03687656861	0.009782017844	3.769832482	13103	553
Jehai	Tianyuan	Onge	Mbuti	0.03696221711	0.005674627703	6.513593321	152561	559
Vt808	Tianyuan	Onge	Mbuti	0.03797663324	0.01069308703	3.551512591	11549	554
Ma525	Tianyuan	Onge	Mbuti	0.05197514643	0.03242348517	1.603009244	892	422
Phl534	Tianyuan	Onge	Mbuti	0.06441282105	0.02091576231	3.079630572	2185	523
Jarawa	Tianyuan	Onge	Mbuti	0.2089134897	0.005275259497	39.60250483	247244	558

Table S20. D(Once,X;Tianyuan,Onge).								
H1pop	**H2pop**	**H3pop**	**H4pop**	**D**	**SE**	**Z**	**nSNPs**	**nBlocks**
Onge	Ma525	Tianyuan	Mbuti	-0.05485055631	0.03405123529	-1.610824272	1402	482
Onge	Phl534	Tianyuan	Mbuti	-0.04356352549	0.02297499572	-1.896127687	3507	545
Onge	Th519	Tianyuan	Mbuti	-0.03571527376	0.008726301465	-4.092830612	30929	557
Onge	Th703	Tianyuan	Mbuti	-0.03257591606	0.01030793788	-3.160274775	21313	555
Onge	Vt779	Tianyuan	Mbuti	-0.02837060003	0.009776794949	-2.901830322	22992	555
Onge	Vt778	Tianyuan	Mbuti	-0.02808859587	0.009305798309	-3.018397233	29089	555
Onge	Nivkh	Tianyuan	Mbuti	-0.0269151184	0.005683529319	-4.735634654	234175	559
Onge	Th531	Tianyuan	Mbuti	-0.02676939281	0.01388197223	-1.928356603	10630	551
Onge	Vt796	Tianyuan	Mbuti	-0.02475084375	0.01094899893	-2.260557692	19005	555
Onge	In661	Tianyuan	Mbuti	-0.02403632042	0.01375581914	-1.747356532	10254	552
Onge	Vt719	Tianyuan	Mbuti	-0.02372292925	0.008024512241	-2.95630794	46392	558
Onge	La898	Tianyuan	Mbuti	-0.02081269815	0.01057934035	-1.967296396	18347	557
Onge	Vt777	Tianyuan	Mbuti	-0.02013344196	0.009522671239	-2.114264102	25442	556
Onge	Yi	Tianyuan	Mbuti	-0.020086826	0.005314487812	-3.77963535	238965	559
Onge	Ma555	Tianyuan	Mbuti	-0.02004955128	0.007414763161	-2.704004274	84129	558
Onge	Dai2	Tianyuan	Mbuti	-0.02003992455	0.005927900649	-3.380610732	209132	559
Onge	La727	Tianyuan	Mbuti	-0.01986305832	0.007550982653	-2.630526281	60182	558
Onge	Han	Tianyuan	Mbuti	-0.01924642258	0.005261582964	-3.657914873	242946	559
Onge	Ami	Tianyuan	Mbuti	-0.01861408853	0.005309855797	-3.505573266	238473	559
Onge	Lahu	Tianyuan	Mbuti	-0.01860633793	0.005463106514	-3.40581643	241158	559
Onge	Th521	Tianyuan	Mbuti	-0.01854159361	0.007047013227	-2.631127971	69948	557
Onge	Vt781	Tianyuan	Mbuti	-0.01822529618	0.01038633031	-1.754738743	22202	555
Onge	Hezhen	Tianyuan	Mbuti	-0.0180335397	0.00532177641	-3.388631598	243362	559
Onge	Japanese	Tianyuan	Mbuti	-0.01789917909	0.005127843156	-3.490586303	258633	559
Onge	Ma912	Tianyuan	Mbuti	-0.01787299783	0.006554471521	-2.726840413	158988	558
Onge	Tujia	Tianyuan	Mbuti	-0.01757586707	0.005302877168	-3.314402072	240299	559
Onge	She	Tianyuan	Mbuti	-0.01726132788	0.005512944684	-3.131054067	238424	559
Onge	La364	Tianyuan	Mbuti	-0.01721661667	0.006548980707	-2.628900197	150119	558
Onge	Naxi	Tianyuan	Mbuti	-0.01706401009	0.005198972624	-3.282188871	259215	559
Onge	Vt833	Tianyuan	Mbuti	-0.01702376897	0.01051431239	-1.619104353	23264	554
Onge	Dai	Tianyuan	Mbuti	-0.01695810542	0.004854643346	-3.493172249	258172	559
Onge	Miao	Tianyuan	Mbuti	-0.01690757993	0.005371882218	-3.147421936	240677	559
Onge	Igorot	Tianyuan	Mbuti	-0.01660652827	0.005407829332	-3.070830689	237094	558
Onge	Atayal	Tianyuan	Mbuti	-0.01655282449	0.006497562538	-2.547543698	203751	558
Onge	Sherpa	Tianyuan	Mbuti	-0.01604826593	0.005164641238	-3.107334118	241079	559
Onge	Th530	Tianyuan	Mbuti	-0.01570364065	0.01315544659	-1.193698788	12340	510
Onge	Korean	Tianyuan	Mbuti	-0.01539903001	0.005476281328	-2.811950133	241923	559
Onge	Oroqen	Tianyuan	Mbuti	-0.0144401705	0.00556714865	-2.593818022	241943	559
Onge	Xibo	Tianyuan	Mbuti	-0.01435675771	0.005223429881	-2.748530761	241800	559
Onge	Han2	Tianyuan	Mbuti	-0.01429527629	0.005956439191	-2.399970155	209951	559
Onge	In662	Tianyuan	Mbuti	-0.0141588867	0.01142312315	-1.239493482	18523	556
Onge	Tibetan	Tianyuan	Mbuti	-0.01402753201	0.005380168988	-2.607266062	243863	559
Onge	Mongola	Tianyuan	Mbuti	-0.01382659006	0.005554047178	-2.489462119	244205	559
Onge	Kinh	Tianyuan	Mbuti	-0.01349253976	0.005302470207	-2.544576251	242850	559
Onge	Dusun	Tianyuan	Mbuti	-0.01301244611	0.005396553073	-2.411251392	239234	558
Onge	Burmese	Tianyuan	Mbuti	-0.01258574471	0.005069363292	-2.482707193	245403	559
Onge	Vt880	Tianyuan	Mbuti	-0.01187684835	0.01045452994	-1.13604805	19801	554
Onge	Vt808	Tianyuan	Mbuti	-0.01163500127	0.01139501625	-1.021060524	18343	555
Onge	Thai	Tianyuan	Mbuti	-0.01148774922	0.005309046855	-2.163806336	243553	559
Onge	Ma554	Tianyuan	Mbuti	-0.01125960625	0.009384727965	-1.199779716	31955	557
Onge	Daur	Tianyuan	Mbuti	-0.01091350148	0.005997635558	-1.819633984	208192	559
Onge	Jomon	Tianyuan	Mbuti	-0.01024893272	0.006775200842	-1.512712754	155869	559
Onge	Cambodian	Tianyuan	Mbuti	-0.008409911613	0.004979009111	-1.689073353	244504	559
Onge	Surui	Tianyuan	Mbuti	-0.007254863736	0.006161144473	-1.177518847	227818	559
Onge	Tu	Tianyuan	Mbuti	-0.006358314158	0.005091798645	-1.24873637	244670	559

Onge	Ma911	Tianyuan	Mbuti	-0.006069400571	0.01103567023	-0.5499802409	20802	556
Onge	Jehai	Tianyuan	Mbuti	-0.00604528566	0.00574403859	-1.052445168	206335	559
Onge	Hawaiian	Tianyuan	Mbuti	0.0001728001446	0.00625829354	-0.02761138376	201080	559
Onge	Karitiana	Tianyuan	Mbuti	0.0000797795755	0.005713224138	-0.0139640199	239167	558
Onge	Kusunda	Tianyuan	Mbuti	0.00032890451520	0.005458325002	0.06025740775	240768	559
Onge	Jarawa	Tianyuan	Mbuti	0.001101902381	0.004584516935	0.240352996	226550	558
Onge	La368	Tianyuan	Mbuti	0.005644272198	0.006615724655	0.8531600833	83905	557
Onge	Mixe	Tianyuan	Mbuti	0.007327432162	0.005642652318	1.298579418	249548	559
Onge	Kharia	Tianyuan	Mbuti	0.008050212288	0.00605928012	1.328575694	212573	558
Onge	Khonda_Dora	Tianyuan	Mbuti	0.009138615491	0.005800462365	1.575497765	209760	558
Onge	Kurumba	Tianyuan	Mbuti	0.009852456861	0.005886288572	1.6737978	210101	559
Onge	Australian	Tianyuan	Mbuti	0.01031602744	0.006009368808	1.7166574	238132	559
Onge	Papuan	Tianyuan	Mbuti	0.01079052895	0.005526929619	1.952355049	278307	559
Onge	Bougainville	Tianyuan	Mbuti	0.01167264136	0.006017966234	1.939632246	236493	559
Onge	Mala	Tianyuan	Mbuti	0.02214494714	0.004828573265	4.586229912	269689	559
Onge	Kapu	Tianyuan	Mbuti	0.02405805732	0.004961281695	4.849161729	252419	558
Onge	Madiga	Tianyuan	Mbuti	0.02454219129	0.005146687345	4.768541324	251113	559
Onge	Bengali	Tianyuan	Mbuti	0.02518718047	0.004760532772	5.290832281	252026	559
Onge	Uygur	Tianyuan	Mbuti	0.0253265988	0.005074281932	4.991169023	251326	559
Onge	Yadava	Tianyuan	Mbuti	0.02700950993	0.004952053315	5.454204188	249827	559
Onge	Irula	Tianyuan	Mbuti	0.03026568541	0.005227875923	5.789289159	250356	559
Onge	Relli	Tianyuan	Mbuti	0.0350052492	0.005065529579	6.910481649	251735	559
Onge	Maori	Tianyuan	Mbuti	0.03517600949	0.006060564325	5.804081536	204107	558
Onge	Brahmin	Tianyuan	Mbuti	0.03563125979	0.004984004809	7.149122274	253512	559
Onge	Kashmiri_Pandit	Tianyuan	Mbuti	0.04450885777	0.00575537487	7.733442005	215618	558
Onge	French	Tianyuan	Mbuti	0.05648094463	0.005261098242	10.73558068	254662	559

Table S21. D(Statistic (Tianyuan,Jomon;Archaic/Great Ape,Mbuti)								
H1pop	**H2pop**	**H3pop**	**H4pop**	**D**	**SE**	**Z**	**nSNPs**	**nBlocks**
Tianyuan	Jomon	Denisova	Mbuti	0.02321686425	0.006255533438	3.711412381	85104	556
Tianyuan	Jomon	AltaiNea	Mbuti	0.02599343147	0.006794228674	3.82581051	86313	556
Tianyuan	Jomon	macaca_mulatta	Mbuti	0.02851489877	0.005531126719	5.155350839	71908	555
Tianyuan	Jomon	gorilla_gorilla	Mbuti	0.02922918145	0.005298454305	5.516548746	78791	556
Tianyuan	Jomon	pan_troglodytes	Mbuti	0.03062667403	0.005255199934	5.827879892	83906	556
Tianyuan	Jomon	pongo_abelii	Mbuti	0.03187301778	0.005511814126	5.782672829	75977	555

Table S22. D(Tianyuan,Jomon;X,Mbuti)								
H1pop	**H2pop**	**H3pop**	**H4pop**	**D**	**SE**	**Z**	**nSNPs**	**nBlocks**
Tianyuan	Jomon	Vt779	Mbuti	-0.09479478806	0.01278572544	-7.414111035	11108	553
Tianyuan	Jomon	Japanese	Mbuti	-0.09406295434	0.006073395645	-15.48770405	104067	557
Tianyuan	Jomon	Vt781	Mbuti	-0.09335869984	0.0123782805	-7.54213801	10836	552
Tianyuan	Jomon	Vt778	Mbuti	-0.09304001855	0.01199865486	-7.754204087	13755	554
Tianyuan	Jomon	Nivkh	Mbuti	-0.0924074592	0.006907327682	-13.37817799	99453	557
Tianyuan	Jomon	Phl534	Mbuti	-0.0903422268	0.02850150567	-3.169735236	1757	514
Tianyuan	Jomon	Vt808	Mbuti	-0.08576027296	0.01322453411	-6.484937182	8994	552
Tianyuan	Jomon	Vt777	Mbuti	-0.07988852461	0.01195317986	-6.683453739	12105	557
Tianyuan	Jomon	Vt833	Mbuti	-0.07478888627	0.01278381755	-5.850277976	11191	555
Tianyuan	Jomon	Ma554	Mbuti	-0.07462410688	0.01108513082	-6.731910347	14993	553
Tianyuan	Jomon	Atayal	Mbuti	-0.07339590068	0.007208527035	-10.18181666	90125	557
Tianyuan	Jomon	La727	Mbuti	-0.07133696154	0.009321190686	-7.65320268	28397	556
Tianyuan	Jomon	Vt796	Mbuti	-0.0708805517	0.01359708296	-5.212923384	9287	553
Tianyuan	Jomon	Ami	Mbuti	-0.06683332398	0.006527130435	-10.23931185	100172	557
Tianyuan	Jomon	Igorot	Mbuti	-0.06680554801	0.006570366893	-10.16770435	99731	557
Tianyuan	Jomon	Ma555	Mbuti	-0.06502684647	0.008748000815	-7.433337952	39609	557
Tianyuan	Jomon	Korean	Mbuti	-0.0641145473	0.006134070437	-10.45220265	100557	557
Tianyuan	Jomon	She	Mbuti	-0.06395005394	0.006303155209	-10.14572096	99755	556
Tianyuan	Jomon	Vt880	Mbuti	-0.0638932041	0.01315006658	-4.858774191	9669	553
Tianyuan	Jomon	Th521	Mbuti	-0.06376452425	0.00885416383	-7.201642693	33271	557
Tianyuan	Jomon	Tujia	Mbuti	-0.06310900752	0.006037127954	-10.45348186	99984	557
Tianyuan	Jomon	Ma912	Mbuti	-0.06133970599	0.008036151121	-7.632970692	75051	557
Tianyuan	Jomon	Th519	Mbuti	-0.06116894332	0.01129932291	-5.413505201	14794	554
Tianyuan	Jomon	Hawaiian	Mbuti	-0.0608233037	0.007446393159	-8.168156369	87549	557
Tianyuan	Jomon	Dusun	Mbuti	-0.05987483858	0.006234118504	-9.60437928	100020	557
Tianyuan	Jomon	Dai	Mbuti	-0.05766902916	0.005881949323	-9.804407688	103685	557
Tianyuan	Jomon	Han	Mbuti	-0.05766148981	0.00599356361	-9.620568591	100798	557
Tianyuan	Jomon	Mongola	Mbuti	-0.05762794285	0.006324682468	-9.111594636	100672	557
Tianyuan	Jomon	Xibo	Mbuti	-0.05762139605	0.006037343281	-9.544164274	100457	556
Tianyuan	Jomon	Kinh	Mbuti	-0.05745930478	0.005903750441	-9.732678465	100742	557
Tianyuan	Jomon	La364	Mbuti	-0.05738982171	0.007352659007	-7.805315282	70397	557
Tianyuan	Jomon	Oroqen	Mbuti	-0.05712600315	0.006499172785	-8.789734485	100608	557
Tianyuan	Jomon	Daur	Mbuti	-0.056927486	0.007235631004	-7.867660189	91057	557
Tianyuan	Jomon	In661	Mbuti	-0.05680091282	0.01786757353	-3.178994211	4781	541
Tianyuan	Jomon	Tu	Mbuti	-0.05671567716	0.005945626918	-9.53905752	100830	556
Tianyuan	Jomon	Miao	Mbuti	-0.05585929733	0.006343514683	-8.805733119	100134	557
Tianyuan	Jomon	Naxi	Mbuti	-0.05566418313	0.005787996259	-9.617176763	103784	557
Tianyuan	Jomon	In662	Mbuti	-0.05425076044	0.01385476201	-3.915676098	8785	552
Tianyuan	Jomon	Cambodian	Mbuti	-0.05409195637	0.006081372579	-8.894695345	100957	557
Tianyuan	Jomon	Hezhen	Mbuti	-0.05368529458	0.006384523759	-8.408660788	100733	556
Tianyuan	Jomon	Thai	Mbuti	-0.05298618172	0.006022106068	-8.798613163	100624	556
Tianyuan	Jomon	Mixe	Mbuti	-0.05233603616	0.006509180446	-8.040341882	101491	557
Tianyuan	Jomon	Yi	Mbuti	-0.05178983956	0.006118293423	-8.464752501	99614	557
Tianyuan	Jomon	Vt719	Mbuti	-0.05164281801	0.009603553231	-5.377469856	21691	556
Tianyuan	Jomon	Lahu	Mbuti	-0.05065388533	0.006199606605	-8.170499929	100709	557
Tianyuan	Jomon	Karitiana	Mbuti	-0.05062360244	0.006904782898	-7.331671855	99806	557
Tianyuan	Jomon	Tibetan	Mbuti	-0.05017694073	0.006258941187	-8.016841703	100510	557
Tianyuan	Jomon	Th530	Mbuti	-0.04973727948	0.01635754256	-3.040632741	5898	461
Tianyuan	Jomon	Burmese	Mbuti	-0.04915339184	0.006245565091	-7.870127223	100770	557
Tianyuan	Jomon	Ma525	Mbuti	-0.04630128119	0.04433137977	-1.044435825	690	392
Tianyuan	Jomon	Surui	Mbuti	-0.04430768921	0.0070565915	-6.278908055	97210	557
Tianyuan	Jomon	Uygur	Mbuti	-0.04147891584	0.005889576069	-7.042767655	100501	557
Tianyuan	Jomon	Khonda_Dora	Mbuti	-0.04129837771	0.007136670868	-5.786784689	90831	557
Tianyuan	Jomon	Sherpa	Mbuti	-0.04082370604	0.006559329855	-6.223761717	100364	557
Tianyuan	Jomon	Kusunda	Mbuti	-0.04063481688	0.005971178806	-6.805158278	99775	557

Tianyuan	Jomon	Relli	Mbuti	-0.03988257036	0.005987074621	-6.661445344	100234	557
Tianyuan	Jomon	Th531	Mbuti	-0.03921177059	0.01656156562	-2.367636702	5017	549
Tianyuan	Jomon	La898	Mbuti	-0.0389617111	0.01400974564	-2.781043432	8655	553
Tianyuan	Jomon	La368	Mbuti	-0.03371903115	0.008298174134	-4.063427762	40481	556
Tianyuan	Jomon	Jehai	Mbuti	-0.03360750521	0.006846151953	-4.908962792	93935	556
Tianyuan	Jomon	Ma911	Mbuti	-0.03346767191	0.01291447638	-2.591485006	10071	552
Tianyuan	Jomon	Maori	Mbuti	-0.03322066897	0.006638368513	-5.004342393	85872	557
Tianyuan	Jomon	Kashmiri_Pandit	Mbuti	-0.03199375439	0.006962074641	-4.595433982	90384	557
Tianyuan	Jomon	Kapu	Mbuti	-0.02856668464	0.005792437385	-4.931720922	100733	557
Tianyuan	Jomon	French	Mbuti	-0.02823021351	0.006042236135	-4.672146683	99653	557
Tianyuan	Jomon	Madiga	Mbuti	-0.02807195385	0.005969650293	-4.702445282	100383	557
Tianyuan	Jomon	Yadava	Mbuti	-0.02678766846	0.005671466647	-4.72323477	99743	557
Tianyuan	Jomon	Bengali	Mbuti	-0.02677620419	0.005927025044	-4.517646541	100652	557
Tianyuan	Jomon	Kharia	Mbuti	-0.02633603489	0.006321400512	-4.166170904	91349	556
Tianyuan	Jomon	Mala	Mbuti	-0.02621106838	0.005443866545	-4.814788931	103913	557
Tianyuan	Jomon	Irula	Mbuti	-0.02563287919	0.005970447866	-4.293292525	100062	557
Tianyuan	Jomon	Jarawa	Mbuti	-0.02553904524	0.006056516691	-4.216787724	101272	557
Tianyuan	Jomon	Bougainville	Mbuti	-0.02516990878	0.006692830408	-3.760727113	98430	557
Tianyuan	Jomon	Th703	Mbuti	-0.0248929553	0.01317171428	-1.88987969	10085	555
Tianyuan	Jomon	Brahmin	Mbuti	-0.02378166314	0.005900404504	-4.030514031	100122	557
Tianyuan	Jomon	Kurumba	Mbuti	-0.02214684747	0.006625736924	-3.342548568	90623	557
Tianyuan	Jomon	Onge	Mbuti	-0.0195984666	0.006469992577	-3.02913278	98531	557
Tianyuan	Jomon	Australian	Mbuti	-0.01448458842	0.006824209436	-2.122529877	98400	557
Tianyuan	Jomon	Papuan	Mbuti	-0.01123018843	0.006270491243	-1.790958314	105344	557

Table S23. D(Tianyuan,X;Jomon,Mbuti)								
H1pop	**H2pop**	**H3pop**	**H4pop**	**D**	**SE**	**Z**	**nSNPs**	**nBlocks**
Tianyuan	Phl534	Jomon	Mbuti	-0.1595526764	0.02897370602	-5.506809392	1641	499
Tianyuan	Nivkh	Jomon	Mbuti	-0.1115759308	0.007089031559	-15.7392346	156213	558
Tianyuan	Japanese	Jomon	Mbuti	-0.1026707377	0.006466167079	-15.87814487	189242	558
Tianyuan	Ma525	Jomon	Mbuti	-0.09839497755	0.04500383841	-2.186368564	686	375
Tianyuan	Vt778	Jomon	Mbuti	-0.09730171418	0.01091113819	-8.917650252	13657	554
Tianyuan	Vt779	Jomon	Mbuti	-0.09719757951	0.01239391123	-7.842365311	10803	551
Tianyuan	Vt781	Jomon	Mbuti	-0.093151904	0.0119370652	-7.80358509	10617	550
Tianyuan	Vt796	Jomon	Mbuti	-0.09032745592	0.01424505509	-6.340969226	8988	551
Tianyuan	Vt808	Jomon	Mbuti	-0.09024065103	0.01397063566	-6.459308885	8825	554
Tianyuan	Vt777	Jomon	Mbuti	-0.08403979876	0.01183102526	-7.103340321	11839	554
Tianyuan	Th519	Jomon	Mbuti	-0.08397171716	0.01096980778	-7.654802968	14478	555
Tianyuan	Vt833	Jomon	Mbuti	-0.07930467561	0.01293147753	-6.132684792	11068	553
Tianyuan	Atayal	Jomon	Mbuti	-0.07898649688	0.007563583781	-10.44299887	121605	556
Tianyuan	Th530	Jomon	Mbuti	-0.07890715678	0.01641337455	-4.807491387	5764	462
Tianyuan	Vt880	Jomon	Mbuti	-0.0783722655	0.01338462818	-5.855393548	9506	554
Tianyuan	Ma555	Jomon	Mbuti	-0.07680177186	0.008573151149	-8.95840637	39194	557
Tianyuan	Ami	Jomon	Mbuti	-0.07535067675	0.006730782695	-11.19493529	163614	558
Tianyuan	Th521	Jomon	Mbuti	-0.0740636864	0.008865129278	-8.354495922	32613	557
Tianyuan	Igorot	Jomon	Mbuti	-0.07378576271	0.006719236836	-10.98127131	160677	558
Tianyuan	La727	Jomon	Mbuti	-0.07374980831	0.009241860727	-7.979974	28347	556
Tianyuan	Vt719	Jomon	Mbuti	-0.07158414961	0.00961854119	-7.442308371	21467	554
Tianyuan	Ma912	Jomon	Mbuti	-0.07130535838	0.007910491628	-9.014023621	74365	556
Tianyuan	She	Jomon	Mbuti	-0.07123024059	0.006585290451	-10.81656779	163597	558
Tianyuan	Tujia	Jomon	Mbuti	-0.07098765403	0.006491071893	-10.93619901	165494	558
Tianyuan	Korean	Jomon	Mbuti	-0.07008892186	0.006631274658	-10.56944939	168095	558
Tianyuan	Han	Jomon	Mbuti	-0.06871561538	0.006502791431	-10.56709509	168282	558
Tianyuan	Ma554	Jomon	Mbuti	-0.06847754654	0.01121252249	-6.10723828	15050	552
Tianyuan	Dai	Jomon	Mbuti	-0.06590827914	0.006236993725	-10.56731529	188446	558
Tianyuan	Th531	Jomon	Mbuti	-0.06561544083	0.01742108061	-3.766439194	4969	547
Tianyuan	Naxi	Jomon	Mbuti	-0.06449759305	0.006212635282	-10.38168026	189718	557
Tianyuan	La364	Jomon	Mbuti	-0.06408926572	0.007429463103	-8.626365706	70130	557
Tianyuan	Yi	Jomon	Mbuti	-0.06328431905	0.006456323995	-9.801911908	164210	558
Tianyuan	Hezhen	Jomon	Mbuti	-0.06319072066	0.006748004414	-9.364356747	168241	558
Tianyuan	Oroqen	Jomon	Mbuti	-0.06308657597	0.006658357599	-9.474795404	166465	557
Tianyuan	Miao	Jomon	Mbuti	-0.06281671403	0.006626617169	-9.479454211	165994	558
Tianyuan	Xibo	Jomon	Mbuti	-0.06263955588	0.006441912046	-9.723752115	167398	558
Tianyuan	In662	Jomon	Mbuti	-0.06262308604	0.01355292649	-4.620632015	8727	553
Tianyuan	La898	Jomon	Mbuti	-0.06216976655	0.01364684868	-4.555613388	8466	556
Tianyuan	Dusun	Jomon	Mbuti	-0.06215678069	0.006777749914	-9.170710262	163985	557
Tianyuan	In661	Jomon	Mbuti	-0.06077364547	0.01795300493	-3.385151717	4743	544
Tianyuan	Kinh	Jomon	Mbuti	-0.06075556764	0.006501596781	-9.344714797	168893	558
Tianyuan	Mongola	Jomon	Mbuti	-0.06034016222	0.00640586673	-9.419515697	169709	558
Tianyuan	Daur	Jomon	Mbuti	-0.06031994415	0.007188383689	-8.391308361	126148	558
Tianyuan	Lahu	Jomon	Mbuti	-0.05930015082	0.006641291593	-8.929008761	166846	558
Tianyuan	Tu	Jomon	Mbuti	-0.05427411608	0.006418689239	-8.455638535	171874	558
Tianyuan	Thai	Jomon	Mbuti	-0.0540847527	0.006363534197	-8.499169018	171057	558
Tianyuan	Tibetan	Jomon	Mbuti	-0.05372449291	0.006666887661	-8.058406808	168973	558
Tianyuan	Burmese	Jomon	Mbuti	-0.05255206895	0.006550010801	-8.023203403	172700	557
Tianyuan	Cambodian	Jomon	Mbuti	-0.05189665944	0.006680204463	-7.768723207	171618	558
Tianyuan	Hawaiian	Jomon	Mbuti	-0.05108486475	0.007717376368	-6.619460075	122887	558
Tianyuan	Th703	Jomon	Mbuti	-0.05065399612	0.01387471476	-3.65081351	9824	554
Tianyuan	Sherpa	Jomon	Mbuti	-0.04854238291	0.006693135042	-7.252562903	165167	558
Tianyuan	Surui	Jomon	Mbuti	-0.04201474123	0.007053379936	-5.956681989	144543	556
Tianyuan	Karitiana	Jomon	Mbuti	-0.04070756821	0.007118488776	-5.718568855	161176	558
Tianyuan	Mixe	Jomon	Mbuti	-0.03581644967	0.006794185873	-5.271632295	174799	557

Tianyuan	Ma911	Jomon	Mbuti	-0.03376826456	0.01327957666	-2.542872067	9977	553
Tianyuan	Jehai	Jomon	Mbuti	-0.03038077757	0.007036812506	-4.317406148	112331	558
Tianyuan	Kusunda	Jomon	Mbuti	-0.03019728128	0.006642664765	-4.545958941	165277	557
Tianyuan	Khonda_Dora	Jomon	Mbuti	-0.02154196424	0.006823541552	-3.157006384	129469	558
Tianyuan	La368	Jomon	Mbuti	-0.01760602244	0.008572316157	-2.053823275	40662	556
Tianyuan	Jarawa	Jomon	Mbuti	-0.01568383351	0.006607775997	-2.373541948	177805	558
Tianyuan	Onge	Jomon	Mbuti	-0.009351412232	0.006982355922	-1.339291829	157746	558
Tianyuan	Kharia	Jomon	Mbuti	-0.008492008813	0.007100345492	-1.195999381	131139	558
Tianyuan	Uygur	Jomon	Mbuti	-0.005158363982	0.006562371095	-0.7860518564	178592	558
Tianyuan	Bougainville	Jomon	Mbuti	-0.004060475809	0.007070623245	-0.5742741012	158877	557
Tianyuan	Kurumba	Jomon	Mbuti	-0.003972805489	0.007118320446	-0.5581099529	128268	556
Tianyuan	Australian	Jomon	Mbuti	0.004076970829	0.006969877781	0.5849415094	161105	558
Tianyuan	Mala	Jomon	Mbuti	0.004562574876	0.00637553729	0.7156377053	201263	558
Tianyuan	Relli	Jomon	Mbuti	0.004576830585	0.006369778855	0.7185226817	179201	558
Tianyuan	Kapu	Jomon	Mbuti	0.005739068028	0.006538477403	0.8777376864	180131	557
Tianyuan	Madiga	Jomon	Mbuti	0.005764723869	0.006499510542	0.8869473834	178653	558
Tianyuan	Bengali	Jomon	Mbuti	0.00833645653	0.006648410568	1.253902184	179473	558
Tianyuan	Papuan	Jomon	Mbuti	0.008806011948	0.006949851961	1.267079068	211820	558
Tianyuan	Yadava	Jomon	Mbuti	0.009342829501	0.006506686375	1.435881332	176974	558
Tianyuan	Maori	Jomon	Mbuti	0.01279639744	0.006970774505	1.835721042	128435	558
Tianyuan	Irula	Jomon	Mbuti	0.01490450544	0.006750698661	2.207846356	177824	558
Tianyuan	Brahmin	Jomon	Mbuti	0.02180910657	0.006571680021	3.318650101	180164	558
Tianyuan	Kashmiri_Pandit	Jomon	Mbuti	0.02251563223	0.00713250933	3.156761694	133542	558
Tianyuan	French	Jomon	Mbuti	0.03853898746	0.006578649024	5.858191753	177954	558

Table S24. D(Jomon,X;Tianyuan,Mbuti)								
H1pop	**H2pop**	**H3pop**	**H4pop**	**D**	**SE**	**Z**	**nSNPs**	**nBlocks**
Jomon	Phl534	Tianyuan	Mbuti	-0.07022266326	0.03016009738	-2.328330123	1494	482
Jomon	Ma525	Tianyuan	Mbuti	-0.05233211171	0.04337534274	-1.206494483	646	373
Jomon	Th530	Tianyuan	Mbuti	-0.02928480926	0.01708199281	-1.714367263	5470	450
Jomon	Th531	Tianyuan	Mbuti	-0.02647177941	0.01871693	-1.414322724	4680	543
Jomon	Th703	Tianyuan	Mbuti	-0.02579356463	0.01291137311	-1.997739854	9389	555
Jomon	La898	Tianyuan	Mbuti	-0.02326440744	0.01436079509	-1.619994387	8087	555
Jomon	Th519	Tianyuan	Mbuti	-0.02292050412	0.01120624076	-2.045333899	13524	553
Jomon	Vt719	Tianyuan	Mbuti	-0.0200153244	0.009676011218	-2.068551178	20132	556
Jomon	Vt796	Tianyuan	Mbuti	-0.01957221454	0.0137734259	-1.421012802	8309	550
Jomon	Nivkh	Tianyuan	Mbuti	-0.01936816604	0.006518151041	-2.971420258	148651	559
Jomon	Vt880	Tianyuan	Mbuti	-0.01455192954	0.01365107823	-1.06599122	8861	552
Jomon	Dai2	Tianyuan	Mbuti	-0.01189345833	0.006861764553	-1.733294438	121461	557
Jomon	Ma555	Tianyuan	Mbuti	-0.01183402662	0.008542169323	-1.385365493	36507	558
Jomon	Yi	Tianyuan	Mbuti	-0.01153227636	0.00633352872	-1.820829567	160094	559
Jomon	Han	Tianyuan	Mbuti	-0.01109809895	0.006126268771	-1.811559265	163754	559
Jomon	Th521	Tianyuan	Mbuti	-0.01034803214	0.008910307911	-1.161355168	30500	558
Jomon	Ma912	Tianyuan	Mbuti	-0.01000943215	0.00761528268	-1.314387472	69520	557
Jomon	Hezhen	Tianyuan	Mbuti	-0.009537782173	0.006431447186	-1.482991603	164002	558
Jomon	Naxi	Tianyuan	Mbuti	-0.008865237951	0.005981091967	-1.482210606	186289	558
Jomon	Japanese	Tianyuan	Mbuti	-0.008691723751	0.006018941424	-1.44406186	183238	559
Jomon	Lahu	Tianyuan	Mbuti	-0.008672315244	0.006232790905	-1.391401601	162593	559
Jomon	Ami	Tianyuan	Mbuti	-0.008560462715	0.0064990091	-1.317195065	158068	559
Jomon	In662	Tianyuan	Mbuti	-0.008400866282	0.01343546631	-0.6252753785	8228	553
Jomon	Dai	Tianyuan	Mbuti	-0.00827068575	0.006075583503	-1.361299001	184685	559
Jomon	Tujia	Tianyuan	Mbuti	-0.007914101367	0.006185180951	-1.279526247	160733	559
Jomon	Sherpa	Tianyuan	Mbuti	-0.007734003188	0.006442581906	-1.200450891	161735	559
Jomon	She	Tianyuan	Mbuti	-0.007313500947	0.006382001317	-1.145957292	158710	558
Jomon	Igorot	Tianyuan	Mbuti	-0.007014792703	0.006806495991	-1.030602635	155182	559
Jomon	Miao	Tianyuan	Mbuti	-0.006981915523	0.006469962043	-1.079127741	161405	559
Jomon	La364	Tianyuan	Mbuti	-0.00672417601	0.007567073262	-0.8886098729	65867	558
Jomon	Korean	Tianyuan	Mbuti	-0.006001342911	0.006379945824	-0.9406573466	163082	559
Jomon	Oroqen	Tianyuan	Mbuti	-0.005982131731	0.006399907666	-0.9347215683	162229	558
Jomon	Han2	Tianyuan	Mbuti	-0.005678728189	0.007086180432	-0.8013806935	121219	558
Jomon	Atayal	Tianyuan	Mbuti	-0.005623195466	0.007336625784	-0.7664552659	115027	557
Jomon	Xibo	Tianyuan	Mbuti	-0.005036337881	0.006132529897	-0.8212496256	163019	558
Jomon	Vt833	Tianyuan	Mbuti	-0.004542732778	0.01287866988	-0.3527330712	10181	553
Jomon	Vt808	Tianyuan	Mbuti	-0.004515322434	0.01430833589	-0.3155728568	7973	553
Jomon	Vt778	Tianyuan	Mbuti	-0.004300629023	0.01163014444	-0.3697829416	12406	553
Jomon	Vt777	Tianyuan	Mbuti	-0.004179333432	0.01244907302	-0.3357144283	10928	554
Jomon	In661	Tianyuan	Mbuti	-0.003986494017	0.01869410882	-0.2132486793	4406	544
Jomon	Tibetan	Tianyuan	Mbuti	-0.00355714128	0.006261611358	-0.5680872025	165325	559
Jomon	Burmese	Tianyuan	Mbuti	-0.003407479009	0.006097881551	-0.558797179	168905	558
Jomon	Daur	Tianyuan	Mbuti	-0.003404147529	0.006901862049	-0.4932216124	120903	559
Jomon	Kinh	Tianyuan	Mbuti	-0.003307810337	0.006268250911	-0.5277086677	164448	559
Jomon	Mongola	Tianyuan	Mbuti	-0.00272168342	0.006155284069	-0.4421702378	165339	559
Jomon	La727	Tianyuan	Mbuti	-0.002425608112	0.009431500474	-0.2571815713	26332	556
Jomon	Vt779	Tianyuan	Mbuti	-0.002425136227	0.01369548736	-0.1770755697	9805	551
Jomon	Dusun	Tianyuan	Mbuti	-0.002290466373	0.006613127469	-0.3463514628	158965	558
Jomon	Thai	Tianyuan	Mbuti	-0.001101728252	0.006065736239	-0.1816314143	166936	558
Jomon	Ma911	Tianyuan	Mbuti	-0.000300932747	0.01307484698	-0.02301615823	9604	553
Jomon	Vt781	Tianyuan	Mbuti	0.0002086100252	0.0129517585	0.01610669511	9527	552
Jomon	Cambodian	Tianyuan	Mbuti	0.002201476896	0.006119854828	0.35972698	167511	559
Jomon	Surui	Tianyuan	Mbuti	0.002297224443	0.00716441905	0.320643506	140228	557
Jomon	Tu	Tianyuan	Mbuti	0.002449099886	0.006145792524	0.3985002547	167320	558
Jomon	Jehai	Tianyuan	Mbuti	0.003230025561	0.006902555144	0.4679463609	108613	558

Jomon	Ma554	Tianyuan	Mbuti	0.006178131053	0.01169016962	0.5284894278	13879	554
Jomon	Hawaiian	Tianyuan	Mbuti	0.009768792059	0.007112266508	1.373513218	117465	559
Jomon	Jarawa	Tianyuan	Mbuti	0.009859160812	0.006303868246	1.563985862	175528	559
Jomon	Karitiana	Tianyuan	Mbuti	0.009936511028	0.006934157007	1.432980392	156835	559
Jomon	Onge	Tianyuan	Mbuti	0.01024893272	0.006775200842	1.512712754	155869	559
Jomon	Kusunda	Tianyuan	Mbuti	0.01045035883	0.00643649324	1.623610628	161916	558
Jomon	La368	Tianyuan	Mbuti	0.01612258	0.008097180301	1.991135112	39107	556
Jomon	Mixe	Tianyuan	Mbuti	0.01655061046	0.006769124694	2.44501486	170621	558
Jomon	Kharia	Tianyuan	Mbuti	0.01784801771	0.006658752465	2.680384622	128475	558
Jomon	Kurumba	Tianyuan	Mbuti	0.01817564116	0.006624771656	2.743587569	126003	557
Jomon	Australian	Tianyuan	Mbuti	0.01856046319	0.007091027974	2.617457336	159649	559
Jomon	Khonda_Dora	Tianyuan	Mbuti	0.01977400537	0.00662427346	2.985082891	125588	559
Jomon	Papuan	Tianyuan	Mbuti	0.02003421913	0.006762354289	2.962610102	211857	559
Jomon	Bougainville	Tianyuan	Mbuti	0.02111159061	0.007011596195	3.010953572	156226	558
Jomon	Mala	Tianyuan	Mbuti	0.03076996348	0.005801723552	5.30359008	199713	559
Jomon	Madiga	Tianyuan	Mbuti	0.03383120292	0.006038636569	5.602457199	176422	559
Jomon	Kapu	Tianyuan	Mbuti	0.0343001293	0.006330037511	5.418629706	177948	558
Jomon	Bengali	Tianyuan	Mbuti	0.03510482467	0.006137498291	5.719728626	177368	559
Jomon	Yadava	Tianyuan	Mbuti	0.03612145775	0.006122180598	5.900096735	174711	559
Jomon	Uygur	Tianyuan	Mbuti	0.03632832479	0.006119874629	5.936122387	175228	559
Jomon	Irula	Tianyuan	Mbuti	0.04052190343	0.00638754104	6.343897154	175856	559
Jomon	Relli	Tianyuan	Mbuti	0.044451287	0.006095162896	7.292879248	176440	559
Jomon	Brahmin	Tianyuan	Mbuti	0.045567136	0.005985186071	7.613319864	178123	559
Jomon	Maori	Tianyuan	Mbuti	0.04599751264	0.007005551221	6.565866295	125358	559
Jomon	Kashmiri_Pandit	Tianyuan	Mbuti	0.05447014853	0.006907395399	7.885772478	130277	559
Jomon	French	Tianyuan	Mbuti	0.06669663744	0.006129396632	10.88143604	175730	559

Table S25. D(Mixe,Surui;X,Mbuti). We only show population combinations in which |Z| > 2								
H1pop	**H2pop**	**H3pop**	**H4pop**	**D**	**SE**	**Z**	**nSNPs**	**nBlocks**
Mixe	Surui	Tianyuan	Mbuti	-0.01864084744	0.005278519398	-3.531453809	295628	559
Mixe	Surui	Papuan	Mbuti	-0.0168062753	0.005557334967	-3.024160933	471703	560
Mixe	Surui	Khonda_Dora	Mbuti	-0.01524947604	0.00501019557	-3.043688779	496097	560
Mixe	Surui	Ma911	Mbuti	-0.01428890377	0.006548460004	-2.182025051	47816	557
Mixe	Surui	La368	Mbuti	-0.01420410684	0.005718953595	-2.483689823	191797	557
Mixe	Surui	Australian	Mbuti	-0.01355468788	0.005465654127	-2.479975418	478399	559
Mixe	Surui	Kennewick	Mbuti	-0.01348776087	0.005905004463	-2.284123739	259953	559
Mixe	Surui	Th519	Mbuti	-0.0127397692	0.006083184761	-2.094259784	67256	558
Mixe	Surui	Onge	Mbuti	-0.009256356214	0.004627671989	-2.000218736	563708	559
Mixe	Surui	Irula	Mbuti	-0.008900878212	0.004176437746	-2.131212951	598619	560

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