Figure S1. Linkage disequilibrium pattern for common SNPs (MAF ≥ 1% in controls) in African Americans (A) and European Americans (B). The heatmap colors and values display the $D'$ values.

Figure S2. Genetic map of the targeted APOL1 region in HGDP populations. The different functional domains composing the APOL1 protein are coded as follows: hatching for the pore-forming (p.M60-W235), dot for the membrane-addressing (p.A238-P304), and tartan for the SRA-interacting (p.A339-L398) domains. When no rs number is available in dbSNP (build 137), the chromosome position is indicated based on the GRCh37 human genome version. The amino-acid positions refer to isoform a (NP_003652, 398aa). The G1, G2 and G3 variants are labeled. For the sake of clarity, we truncated the last exon and did not represent the full 3’UTR.
Figure S3. Global distribution of the G3 rs136176 variant. Each pie chart represents a population (for details, see Tables S1 and S2). The G (p.R255) and A (p.K255) alleles are represented in black and white, respectively. AA, African American; EA, European American.
Table S1. Global population demographics.

| Continent          | Country                      | Population | n     |
|--------------------|------------------------------|------------|-------|
| North Africa       | Algeria                      | Mozabite (Mzab) | 29    |
| Sub-Saharan Africa | Central African Republic     | Biaka Pygmy | 26    |
|                    | Democratic Republic of Congo| Mbuti Pygmy | 13    |
|                    | Kenya                        | Bantu      | 11    |
|                    | Kenya                        | Luhya¹     | 92    |
|                    | Namibia                      | San        | 6     |
|                    | Nigeria                      | Yoruba²    | 81    |
|                    | Senegal                      | Mandenka   | 22    |
|                    | South Africa                 | Bantu      | 7     |
| America            | Brazil                       | Karitiana  | 14    |
|                    | Brazil                       | Surui      | 8     |
|                    | Colombia                     | Piapoco and Curripaco | 7 |
|                    | Mexico                       | Maya       | 21    |
|                    | Mexico                       | Pima       | 14    |
|                    | USA                          | African American³ | 946 |
|                    | USA                          | European American³ | 491 |
| East Asia          | Cambodia                     | Cambodian  | 10    |
|                    | China                        | Dai        | 10    |
|                    | China                        | Daur       | 10    |
|                    | China                        | Han        | 45    |
|                    | China                        | Hezhen     | 10    |
|                    | China                        | Lahu       | 8     |
|                    | China                        | Miaozu     | 10    |
|                    | China                        | Mongola    | 10    |
|                    | China                        | Naxi       | 7     |
|                    | China                        | Oroqen     | 9     |
|                    | China                        | She        | 10    |
|                    | China                        | Tu         | 10    |
|                    | China                        | Tujuia     | 10    |
|                    | China                        | Xibo       | 9     |
| Region                  | Country          | Population | Count |
|------------------------|------------------|------------|-------|
| China                  | Yizu             |            | 10    |
| Japan                  | Japanese         |            | 30    |
| Siberia                | Yakut            |            | 25    |
| Central-South Asia     | China            | Uygur      | 10    |
|                        | Pakistan         | Balochi     | 24    |
|                        | Pakistan         | Brahui      | 25    |
|                        | Pakistan         | Burusho     | 25    |
|                        | Pakistan         | Hazara      | 23    |
|                        | Pakistan         | Kalash      | 23    |
|                        | Pakistan         | Makrani     | 25    |
|                        | Pakistan         | Pathan      | 25    |
|                        | Pakistan         | Sindhi      | 24    |
| Middle East            | Israel           | Druze (Carmel) | 42 |
|                        | Israel           | Palestinian (Central) | 46 |
|                        | Israel           | Bedouin (Negev) | 47 |
| Europe                 | France           | Basque      | 23    |
|                        | France           | French      | 28    |
|                        | Italy            | Sardinian   | 28    |
|                        | Italy            | Tuscan      | 8     |
|                        | Italy            | Bergamo (North) | 14  |
|                        | Orkney Islands   | Orcadian    | 15    |
|                        | Russia           | Adygei (Caucasus) | 17 |
|                        | Russia           | Russian     | 25    |
| Oceania                | Bougainville     | NAN Melanesian | 14  |
|                        | New Guinea       | Papuan      | 17    |
| **TOTAL**              |                  |            | **2,549** |

All populations are from the Human Genome Diversity Project (HGDP) except populations 1, 2, and 3.

1. Luhyas from the International HapMap project; 2. 21 Yorubas from HGDP + 60 unrelated Yorubas from the International HapMap project (unrelated parents from 30 trios); 3. African and European Americans from the NIH FSGS cohort.
Table S2. Variant allelic frequency (%) in global populations.

| Population               | rs136168 | chr22:3666148 C>T | rs136169 | rs2480494 | rs147234620 | rs141998256 | rs146078613 | rs2239785 | rs148296684 | rs11636671 | chr22:36661531 A>G | rs134174 | rs134175 (G3) | rs134176 (G3) |
|--------------------------|----------|-------------------|----------|-----------|-------------|-------------|-------------|-----------|-------------|-------------|-------------------|-----------|----------------|----------------|
| Allele 1                 | A        | T                 | A        | G         | T           | C           | T           | A         | T           | G           | A                  | A         | A              | A             |
| Allele 2                 | G        | C                 | G        | A         | C           | T           | C           | G         | C           | A           | G                  | A         | A              | A             |
| All                      | 57.80    | 0.27              | 11.43    | 11.36     | 0.12        | 0.15        | 0.03        | 55.26     | 0.06        | 1.87        | 0.02               | 0.02      | 12.08          | 12.07         | 11.67       |
| African American         | 47.13    | 0.85              | 4.16     | 4.10      | 0.00        | 0.11        | 0.00        | 28.15     | 0.11        | 4.04        | 0.00               | 0.06      | 4.56            | 4.56          | 4.03        |
| European American        | 77.92    | 0.00              | 21.18    | 21.18     | 0.00        | 0.25        | 0.00        | 78.51     | 0.00        | 0.10        | 0.10               | 0.00      | 21.22          | 21.17         | 21.18       |
| Moabiste (Mzab)          | n/a      | 0.00              | 16.67    | 16.67     | 0.00        | 0.00        | 0.00        | 68.52     | 0.00        | 0.00        | 0.00               | 0.00      | 17.86          | 17.86         | 17.86       |
| Biaka Pygmy              | n/a      | 0.00              | 1.92     | 1.92      | 5.77        | 0.00        | 0.00        | 15.38     | 0.00        | 0.00        | 0.00               | 0.00      | 26.92          | 26.92         | 7.69        |
| Mbuti Pygmy              | n/a      | 5.00              | 30.00    | 30.00     | 5.00        | 0.00        | 0.00        | 40.00     | 0.00        | 0.00        | 0.00               | 0.00      | 34.62          | 34.62         | 30.77       |
| Bantu                    | n/a      | 0.00              | 40.00    | 35.00     | 0.00        | 0.00        | 0.00        | 30.00     | 0.00        | 0.00        | 0.00               | 0.00      | 5.56           | 5.56          | 0.00        |
| Luhya                    | n/a      | 0.00              | 4.38     | 4.38      | 0.00        | 1.25        | 0.00        | 43.75     | 0.63        | 4.35        | 0.00               | 0.00      | 6.74           | 6.74          | 4.49        |
| San                      | n/a      | 0.00              | 41.67    | 41.67     | 0.00        | 0.00        | 0.00        | 33.33     | 0.00        | 0.00        | 0.00               | 0.00      | 10.00          | 10.00         | 10.00       |
| Yoruba                   | n/a      | 0.00              | 0.00     | 0.00      | 0.00        | 0.00        | 0.00        | 24.68     | 0.00        | 3.09        | 0.00               | 0.00      | 0.00           | 0.00          | 0.00        |
| Mandenka                 | n/a      | 0.00              | 2.38     | 0.00      | 0.00        | 0.00        | 0.00        | 35.71     | 0.00        | 2.27        | 0.00               | 0.00      | 2.27           | 2.27          | 2.27        |
| Bantu South Africa       | n/a      | 0.00              | 0.00     | 0.00      | 0.00        | 0.00        | 0.00        | 7.14      | 0.00        | 21.43       | 0.00               | 0.00      | 7.14           | 7.14          | 0.00        |
| Karitiana                | n/a      | 0.00              | 0.00     | 0.00      | 0.00        | 0.00        | 0.00        | 100.00    | 0.00        | 0.00        | 0.00               | 0.00      | 0.00           | 0.00          | 0.00        |
| Surui                    | n/a      | 0.00              | 0.00     | 0.00      | 0.00        | 0.00        | 0.00        | 100.00    | 0.00        | 0.00        | 0.00               | 0.00      | 0.00           | 0.00          | 0.00        |
| Piapoco and Curripaco    | n/a      | 0.00              | 0.00     | 0.00      | 0.00        | 0.00        | 0.00        | 100.00    | 0.00        | 0.00        | 0.00               | 0.00      | 0.00           | 0.00          | 0.00        |
| Maya                     | n/a      | 0.00              | 2.38     | 2.38      | 0.00        | 0.00        | 0.00        | 95.24     | 0.00        | 2.38        | 0.00               | 0.00      | 2.38           | 2.38          | 2.38        |
| Pima                     | n/a      | 0.00              | 8.33     | 8.33      | 0.00        | 0.00        | 0.00        | 87.50     | 0.00        | 0.00        | 0.00               | 0.00      | 14.29          | 14.29         | 14.29       |
| Language          | Kidney international | Limou et al. | Supplementary Material |
|-------------------|----------------------|--------------|------------------------|
| Cambodian         | n/a 0.00 15.00 15.00 | 0.00         | 85.00 0.00 0.00 0.00 0.00 15.00 15.00 15.00 |
| Dai               | n/a 0.00 22.22 22.22 | 0.00         | 77.78 0.00 0.00 0.00 0.00 20.00 20.00 20.00 |
| Daur              | n/a 0.00 10.00 10.00 | 0.00         | 85.00 0.00 0.00 0.00 0.00 10.00 10.00 10.00 |
| Han               | n/a 0.00 11.90 11.90 | 0.00         | 88.10 0.00 0.00 0.00 0.00 16.28 16.28 16.28 |
| Hezhen            | n/a 0.00 5.00 5.00   | 0.00         | 95.00 0.00 0.00 0.00 0.00 5.56 5.56 5.56  |
| Lahu              | n/a 0.00 12.50 12.50 | 0.00         | 87.50 0.00 0.00 0.00 0.00 14.29 14.29 14.29 |
| Miao              | n/a 0.00 5.00 5.00   | 0.00         | 95.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00   |
| Mongola           | n/a 0.00 25.00 25.00 | 0.00         | 70.00 0.00 0.00 0.00 0.00 30.00 30.00 30.00 |
| Naxi              | n/a 0.00 14.29 14.29 | 0.00         | 85.71 0.00 0.00 0.00 0.00 14.29 14.29 14.29 |
| Oroqen            | n/a 0.00 5.56 5.56   | 0.00         | 94.44 0.00 0.00 0.00 0.00 5.56 5.56 6.25  |
| She               | n/a 0.00 25.00 25.00 | 0.00         | 75.00 0.00 0.00 0.00 0.00 22.22 22.22 22.22 |
| Tu                | n/a 0.00 25.00 25.00 | 0.00         | 70.00 0.00 0.00 0.00 0.00 30.00 30.00 30.00 |
| Tuja              | n/a 0.00 25.00 25.00 | 0.00         | 75.00 0.00 0.00 0.00 0.00 27.78 27.78 27.78 |
| Xibo              | n/a 0.00 16.67 16.67 | 0.00         | 83.33 0.00 0.00 0.00 0.00 16.67 16.67 16.67 |
| Yizu              | n/a 0.00 0.00 0.00   | 0.00         | 94.44 0.00 0.00 0.00 0.00 0.00 0.00 0.00   |
| Japanese          | n/a 0.00 18.97 18.97 | 0.00         | 81.03 0.00 0.00 0.00 0.00 18.33 18.33 18.33 |
| Yakut             | n/a 0.00 15.91 15.91 | 0.00         | 84.09 0.00 0.00 0.00 0.00 18.00 18.00 20.00 |
| Uygur             | n/a 0.00 18.75 18.75 | 0.00         | 81.25 0.00 0.00 0.00 0.00 20.00 20.00 20.00 |
| Balochi           | n/a 0.00 31.25 31.25 | 0.00         | 65.63 0.00 0.00 0.00 0.00 26.09 26.09 26.09 |
| Brahui            | n/a 0.00 6.25 6.25   | 0.00         | 90.63 0.00 0.00 0.00 0.00 12.00 12.00 12.00 |
| Burusho           | n/a 0.00 6.25 6.25   | 0.00         | 93.75 0.00 0.00 0.00 0.00 6.52 6.52 6.82  |
| Hazara            | n/a 0.00 26.47 26.47 | 0.00         | 73.53 0.00 0.00 0.00 0.00 21.74 21.74 21.74 |
| Kalash            | n/a 0.00 38.89 38.89 | 0.00         | 61.11 0.00 0.00 0.00 0.00 43.18 43.18 43.18 |
| Makrani           | n/a 0.00 10.53 10.53 | 0.00         | 86.84 0.00 0.00 0.00 0.00 16.67 16.67 16.67 |
| Pathan            | n/a 0.00 21.43 21.43 | 0.00         | 75.00 0.00 0.00 0.00 0.00 14.58 14.58 15.22 |
| Sindhi            | n/a 0.00 19.23 19.23 | 0.00         | 80.77 0.00 0.00 0.00 0.00 16.67 16.67 20.83 |
| Druze (Carmel)    | n/a 0.00 17.07 17.07 | 0.00         | 81.71 0.00 0.00 0.00 0.00 17.86 17.86 17.86 |
| Palestinian (Central) | n/a 0.00 21.95 21.95 | 0.00         | 75.61 0.00 1.09 0.00 0.00 23.91 23.91 23.91 |
| Region                     | n/a | 0.00 | 16.67 | 16.67 | 0.00 | 0.00 | 0.00 | 72.62 | 0.00 | 0.00 | 0.00 | 0.00 | 15.96 | 15.96 | 15.96 |
|----------------------------|-----|------|-------|-------|------|------|------|-------|------|------|------|------|-------|-------|-------|
| Bedouin (Negev)            | n/a | 0.00 | 14.29 | 14.29 | 0.00 | 0.00 | 0.00 | 83.33 | 0.00 | 0.00 | 0.00 | 0.00 | 16.00 | 16.00 | 16.00 |
| Basque                     | n/a | 0.00 | 25.93 | 25.93 | 0.00 | 0.00 | 0.00 | 72.22 | 0.00 | 0.00 | 0.00 | 0.00 | 25.93 | 25.93 | 25.93 |
| French                     | n/a | 0.00 | 37.50 | 37.50 | 0.00 | 0.00 | 0.00 | 62.50 | 0.00 | 0.00 | 0.00 | 0.00 | 37.50 | 37.50 | 37.50 |
| Sardinian                  | n/a | 0.00 | 15.38 | 15.38 | 0.00 | 0.00 | 0.00 | 84.62 | 0.00 | 0.00 | 0.00 | 0.00 | 14.29 | 14.29 | 14.29 |
| Tuscan                     | n/a | 0.00 | 17.86 | 17.86 | 0.00 | 0.00 | 0.00 | 82.14 | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | 20.00 | 20.00 |
| Bergamo (North)            | n/a | 0.00 | 14.29 | 14.29 | 0.00 | 0.00 | 0.00 | 85.71 | 0.00 | 0.00 | 0.00 | 0.00 | 11.76 | 11.76 | 11.76 |
| Orcadian                   | n/a | 0.00 | 13.64 | 13.64 | 0.00 | 2.27 | 0.00 | 84.09 | 0.00 | 0.00 | 0.00 | 0.00 | 16.00 | 16.00 | 16.00 |
| Adygei (Caucasus)          | n/a | 0.00 | 10.71 | 10.71 | 0.00 | 0.00 | 0.00 | 85.71 | 0.00 | 0.00 | 0.00 | 0.00 | 11.54 | 11.54 | 11.54 |
| Russian                    | n/a | 0.00 | 2.94  | 2.94  | 0.00 | 0.00 | 0.00 | 97.06 | 0.00 | 0.00 | 0.00 | 0.00 | 2.94  | 2.94  | 2.94  |

The reported allelic frequencies are reported for allele 1. n/a, not available.
| Population          | rs73885316 | rs142955744 | rs73403889 | chr22:36661738 C>G | rs369288414 | rs141788376 | rs15088135 | rs136177 | rs16996616 | rs73885319 (G1) | rs2236661915 C>G | rs151114491 | rs60910145 (G1) | rs71785313 (G2) | rs18540686 |
|---------------------|------------|-------------|------------|-------------------|-------------|-------------|------------|----------|------------|----------------|----------------|-------------|----------------|----------------|-------------|
| Allele 1            | A          | G           | A          | G                 | A           | T           | A          | G        | G          | A              | G             | A           | G              | A              | n/a         |
| Allele 2            | C          | T           | G          | C                 | G           | C           | G          | A        | C          | G              | T             | TTATAA      | G              | n/a             | n/a         |
| All                 | 1.03       | 0.14        | 0.34       | 0.05              | 0.03        | 0.05        | 0.08       | 12.72    | 4.16       | 13.39          | 0.03           | 0.05        | 13.15          | 7.30            | 0.04        |
| African American    | 1.76       | 0.16        | 0.16       | 0.08              | 0.16        | 0.24        | 5.95       | 6.94     | 31.83      | 0.08           | 0.00           | 31.16       | 16.97          | 0.00            | n/a         |
| European American   | 0.00       | 0.00        | 0.00       | 0.00              | 0.00        | 0.00        | 21.37      | 0.10     | 0.00       | 0.00           | 0.00           | 0.00        | 0.00           | n/a             | n/a         |
| Mozabite (Mzab)     | 1.92       | 0.00        | 5.77       | 0.00              | 0.00        | 0.00        | 15.91      | 6.90     | 1.72       | 0.00           | 0.00           | 1.79        | 0.00           | 1.79            | n/a         |
| Biaka Pygmy         | 0.00       | 0.00        | 3.85       | 0.00              | 0.00        | 0.00        | 30.00      | 13.46    | 4.00       | 0.00           | 0.00           | 4.00        | 10.00          | 0.00            | n/a         |
| Mbuti Pygmy         | 0.00       | 0.00        | 3.85       | 0.00              | 0.00        | 0.00        | 37.50      | 7.69     | 0.00       | 0.00           | 0.00           | 3.85        | 0.00           | n/a             | n/a         |
| Bantu               | 16.67      | 0.00        | 0.00       | 0.00              | 0.00        | 0.00        | 10.00      | 4.55     | 4.55       | 0.00           | 4.55           | 0.00        | 0.00           | 0.00             | 0.00         |
| Luhyia              | 1.69       | 0.00        | 0.00       | n/a               | n/a          | n/a         | 10.00      | 13.07    | 5.06       | 0.00           | n/a            | 5.43        | 7.07           | 0.00             | n/a         |
| San                 | 30.00      | 8.33        | 0.00       | 0.00              | 0.00        | 0.00        | 8.33       | 0.00     | 0.00       | 0.00           | 0.00           | 0.00        | 0.00           | 0.00             | n/a         |
| Yoruba              | 3.16       | 0.00        | 1.27       | 0.00              | 0.00        | 0.00        | 0.89       | 9.26     | 38.89      | 0.00           | 0.00           | 38.89       | 9.88           | 0.00             | n/a         |
| Mandenka            | 9.52       | 0.00        | 11.90      | 0.00              | 0.00        | 0.00        | 3.57       | 18.18    | 5.00       | 0.00           | 0.00           | 2.38        | 21.43          | 0.00             | n/a         |
| Bantu South Africa  | 0.00       | 0.00        | 0.00       | 0.00              | 0.00        | 0.00        | 8.33       | 28.57    | 7.14       | 0.00           | 0.00           | 21.43       | 0.00           | 0.00             | n/a         |
| Karitiana           | 0.00       | 0.00        | 0.00       | 0.00              | 0.00        | 0.00        | 0.00       | 0.00     | 0.00       | 0.00           | 0.00           | 0.00        | 0.00           | 0.00             | n/a         |
| Surui               | 0.00       | 0.00        | 0.00       | 0.00              | 0.00        | 0.00        | 0.00       | 0.00     | 0.00       | 0.00           | 0.00           | 0.00        | 0.00           | 0.00             | n/a         |
| Piapoco and Curripaco| 0.00      | 0.00        | 2.38       | 0.00              | 0.00        | 0.00        | 2.38       | 2.38     | 0.00       | 0.00           | 0.00           | 0.00        | 0.00           | 0.00             | n/a         |
| Maya                | 0.00       | 0.00        | 2.38       | 0.00              | 0.00        | 0.00        | 14.29      | 0.00     | 0.00       | 0.00           | 0.00           | 0.00        | 0.00           | 0.00             | n/a         |
| Pima                | 0.00       | 0.00        | 0.00       | 0.00              | 0.00        | 0.00        | 0.00       | 0.00     | 0.00       | 0.00           | 0.00           | 0.00        | 0.00           | 0.00             | n/a         |
| Language          | Limou et al. | Supplementary Material |
|-------------------|--------------|------------------------|
| Cambodian         | 0.00         | 0.00                   |
| Dai               | 0.00         | 0.00                   |
| Daur              | 0.00         | 0.00                   |
| Han               | 0.00         | 0.00                   |
| Hezhen            | 0.00         | 0.00                   |
| Lahu              | 0.00         | 0.00                   |
| Miao              | 0.00         | 0.00                   |
| Mongola           | 0.00         | 0.00                   |
| Naxi              | 0.00         | 0.00                   |
| Oroqen            | 0.00         | 0.00                   |
| She               | 0.00         | 0.00                   |
| Tu                | 0.00         | 0.00                   |
| Tuji              | 0.00         | 0.00                   |
| Xibo              | 0.00         | 0.00                   |
| Yizu              | 0.00         | 0.00                   |
| Japanese          | 0.00         | 0.00                   |
| Yakut             | 0.00         | 0.00                   |
| Uygur             | 0.00         | 0.00                   |
| Balochi           | 0.00         | 0.00                   |
| Brahui            | 0.00 4.00    | 0.00 2.08              |
| Burusho           | 0.00 8.00    | 0.00 4.00              |
| Hazara            | 0.00         | 0.00                   |
| Kalash            | 0.00         | 0.00                   |
| Makrani           | 0.00 18.00   | 0.00 2.00              |
| Pathan            | 0.00 15.22   | 0.00 2.08              |
| Sindhi            | 0.00 16.67   | 0.00 0.00              |
| Druze (Carmel)    | 0.00 17.86   | 0.00 0.00              |
| Palestinian (Central) | 0.00 6.25 1.09 | 0.00 0.00          |
|                  | Bedouin (Negev) | Basque | French | Sardinian | Tuscan | Bergamo (North) | Orcadian | Adygei (Caucasus) | Russian | NAN Melanesian | Papuan |
|------------------|----------------|--------|--------|-----------|--------|-----------------|----------|-------------------|---------|----------------|--------|
|                  | 0.00 0.00 0.00 0.00 0.00 0.00 0.00 11.76 10.64 0.00 0.00 0.00 0.00 0.00 | 0.00 0.00 0.00 0.00 0.00 0.00 0.00 11.36 0.00 0.00 0.00 0.00 0.00 | 0.00 0.00 0.00 0.00 0.00 0.00 0.00 17.86 0.00 0.00 0.00 0.00 0.00 | 0.00 0.00 0.00 0.00 0.00 0.00 0.00 26.92 1.79 0.00 0.00 0.00 0.00 | 0.00 0.00 0.00 0.00 0.00 0.00 0.00 37.50 0.00 0.00 0.00 0.00 0.00 | 0.00 0.00 0.00 0.00 0.00 0.00 0.00 15.38 0.00 0.00 0.00 0.00 0.00 | 0.00 0.00 0.00 0.00 0.00 0.00 0.00 20.00 0.00 0.00 0.00 0.00 0.00 | 0.00 0.00 0.00 0.00 0.00 0.00 0.00 11.76 0.00 0.00 0.00 0.00 0.00 | 0.00 2.00 0.00 2.00 0.00 0.00 0.00 16.00 0.00 0.00 0.00 0.00 0.00 | 0.00 0.00 0.00 0.00 0.00 0.00 0.00 10.71 0.00 0.00 0.00 0.00 0.00 | 0.00 0.00 0.00 0.00 0.00 0.00 0.00 2.94 0.00 0.00 0.00 0.00 0.00 |
Table S3. *APOL1* haplotypes description and frequency in the HGDP populations.

| Haplotype | Africa | | Middle East | | Europe | | Central-South Asia | | East Asia | | America | | Oceania | | WORLD |
|-----------|--------|--------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|-------------|--------|--------|
| Chr. Count (n=204) | Chr. Count (n=326) | Freq. | Freq. | Chr. Count (n=216) | Freq. | Chr. Count (n=400) | Freq. | Chr. Count (n=458) | Freq. | Chr. Count (n=128) | Freq. | Chr. Count (n=56) | Freq. | Chr. Count (n=1,888) | Freq. |
| G0 | ACTGAGATIG | 45 | 22.1 | 10.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10.5 | 0.5 |
| G3 | ACTGAGATIG | 10 | 4.9 | 10.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10.5 | 0.5 |
| G1<sup>1<sup>st</sup> | ACTGAGATIG | 14 | 6.9 | 11.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 1.3 |
| G2 | ACTGAGATIG | 22 | 10.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 1.2 |

The G1, G2 and G3 tagging alleles are highlighted in red. The dashed line separates the common (Freq.>1%) and the rare haplotypes. Chr., chromosome; Freq., frequency; D, deletion; I, insertion.
Table S4. Pairwise $F_{ST}$ scores for HGDP continental populations.

|        | North Africa | Sub-Saharan Africa | America | East Asia | Central-South Asia | Middle East | Europe | Oceania |
|--------|--------------|--------------------|---------|-----------|--------------------|-------------|--------|---------|
| G1, rs73885319 |              |                    |         |           |                    |             |        |         |
| North Africa | 0.0929       |                    |         |           |                    |             |        |         |
| Sub-Saharan Africa | 0.0070   | 0.1223             |         |           |                    |             |        |         |
| America   | 0.0157       | 0.2240 (27.9%)     | 10-8    |           |                    |             |        |         |
| East Asia | 0.0064       | 0.2000 (21.2%)     | 10-8    | 10-8      |                    |             |        |         |
| Central-South Asia | 0.0578   | 0.1664 (22.6%)     | 0       | 0.0007    | 10-8               |             |        |         |
| Middle East | 0.0786     | 0.1859 (24.8%)     | 0       | 10-8      | 10-8               | 0           |        | 0       |
| Europe    | 0.0251       | 0.0555             | 0       | 0.0555    | 0.0932             | 0.0632      | 0.0642 |         |
| Oceania   | 10-8         | 0.1255             | 0       | 10-8      | 10-8               | 0           | 0      | 0       |

|        | North Africa | Sub-Saharan Africa | America | East Asia | Central-South Asia | Middle East | Europe | Oceania |
|--------|--------------|--------------------|---------|-----------|--------------------|-------------|--------|---------|
| G2, rs71785313 |              |                    |         |           |                    |             |        |         |
| North Africa | 0.0509       |                    |         |           |                    |             |        |         |
| Sub-Saharan Africa | 0.0387   | 0.1089             |         |           |                    |             |        |         |
| America   | 10-8         | 0.1415             | 0.0065  |           |                    |             |        |         |
| East Asia | 10-8         | 0.1293             | 0.0055  | 10-8      |                    |             |        |         |
| Central-South Asia | 0.0287   | 0.1259             | 10-8    | 0.0001    | 10-8               |             |        |         |
| Middle East | 10-8        | 0.1047             | 0.0055  | 10-8      | 10-8               | 10-8        |        |         |
| Europe    | 10-8         | 0.1110             | 0       | 0.0054    | 0.0230             | 10-8        | 0.0011 |         |
| Oceania   | 10-8         | 0.1110             | 0       | 0.0054    | 0.0230             | 10-8        | 0.0011 |         |

|        | North Africa | Sub-Saharan Africa | America | East Asia | Central-South Asia | Middle East | Europe | Oceania |
|--------|--------------|--------------------|---------|-----------|--------------------|-------------|--------|---------|
| G3, rs136175 |              |                    |         |           |                    |             |        |         |
| North Africa | 10-8         |                    |         |           |                    |             |        |         |
| Sub-Saharan Africa | 0.1306   | 0.0391             |         |           |                    |             |        |         |
| America   | 10-8         | 0.0774             | 0.0085  | 0.1072    | 10-8               |             |        |         |
| East Asia | 10-8         | 0.0043             | 0.0917  | 10-8      | 10-8               |             |        |         |
| Central-South Asia | 10-8    | 0.0023             | 0.0887  | 10-8      | 10-8               | 10-8        |        |         |
| Middle East | 10-8        | 0.0031             | 0.0555  | 0.0932    | 0.0632             | 0.0642      |        |         |
| Europe    | 10-8         |                    | 10-8    | 0.0555    | 0.0932             | 0.0632      | 0.0642 |         |
| Oceania   | 10-8         | 0.1255             | 0       | 10-8      | 10-8               | 0           | 0      | 0       |

For the top signals, we reported the corresponding top x% of the $F_{ST}$ genome-wide distribution in parenthesis.
### Table S5. PCR primers sequence and experiment conditions.

| Primer          | Sequence               | Fragment # | Orientation | Fragment size (bp) | Annealing temperature (°C) | MgSO4 concentration (mM) |
|-----------------|------------------------|------------|-------------|-------------------|----------------------------|--------------------------|
| apol1_ex1_s2    | 5'CACTGCAATTCAGTCTTGGTG-3' | 1          | Forward     | 592               | 60                         | 1.5                      |
| apol1_ex1_a2    | 5'GATGGAGGACAGTGCAACTGT-3' | 1          | Reverse     |                   |                            |                          |
| apol1_ex2_s     | 5'ACCCCTGAGTGCTGACACCAA-3' | 2          | Forward     | 486               | 60                         | 1.5                      |
| apol1_ex2_a     | 5'GGAGGAGGTCAGTTCCCCAGAG-3' |            | Reverse     |                   |                            |                          |
| apol1_ex3_sp_s  | 5'CCTGGGTGATAGAGCGGACGAA-3' | 3          | Forward     | 501               | 60                         | 1.5                      |
| apol1_ex3_sp_a  | 5'GCAGAGGAGCGGAGGGTAGG-3'  | 3          | Reverse     |                   |                            |                          |
| apol1_ex45_s    | 5'CCCTGGTCACTGTCAAGACC-3'  | 4          | Forward     | 530               | 60                         | 1.5                      |
| apol1_ex45_a    | 5'GTCTTTCTGAGGCTCACTCA-3'  | 4          | Reverse     |                   |                            |                          |
| apol1_ex6_sp_s  | 5'CAGGAAAAATAACATGATGCTCCTCTTTA-3' | 5          | Forward     | 302               | 60                         | 1.5                      |
| apol1_ex6_sp_a  | 5'TGTGCTGTCAGGAAAACACT-3'  | 5          | Reverse     |                   |                            |                          |
| APOL1_ex71_F    | 5'TCCCAATGCTGAGGTTACTAC-3'  | 6a         | Forward     | 372               | 60                         | 1.25                     |
| APOL1_ex71_R    | 5'TGCTGAAGGGTCCAGACA-3'     |            | Reverse     |                   |                            |                          |
| APOL1_ex72_F    | 5'ATGAGGCTAGGAGGTCAC-3'     | 6b         | Forward     | 392               | 64                         | 0.75                     |
| APOL1_ex72_R    | 5'ATGCATGCTTGCCCTGTC-3'     |            | Reverse     |                   |                            |                          |
| APOL1_ex73_F    | 5'ACCAACTCTACACAGGAGCATT-3' | 6c         | Forward     | 421               | 60                         | 0.75                     |
| APOL1_ex73_R    | 5'CTGCCAGGCTATCTCCTC-3'      |            | Reverse     |                   |                            |                          |