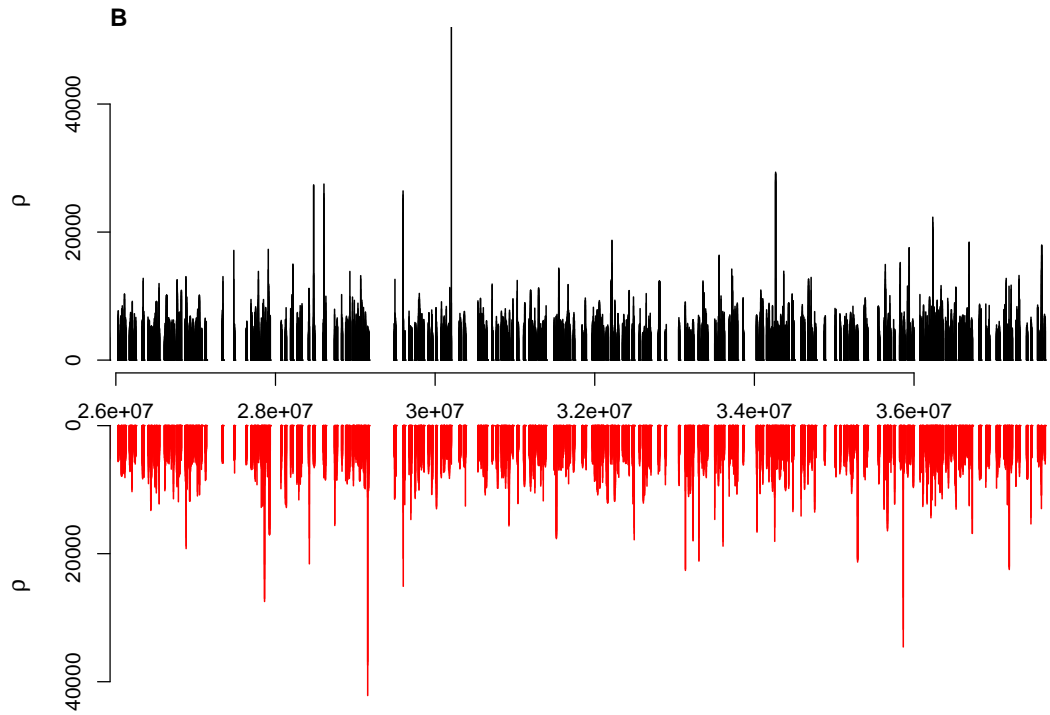
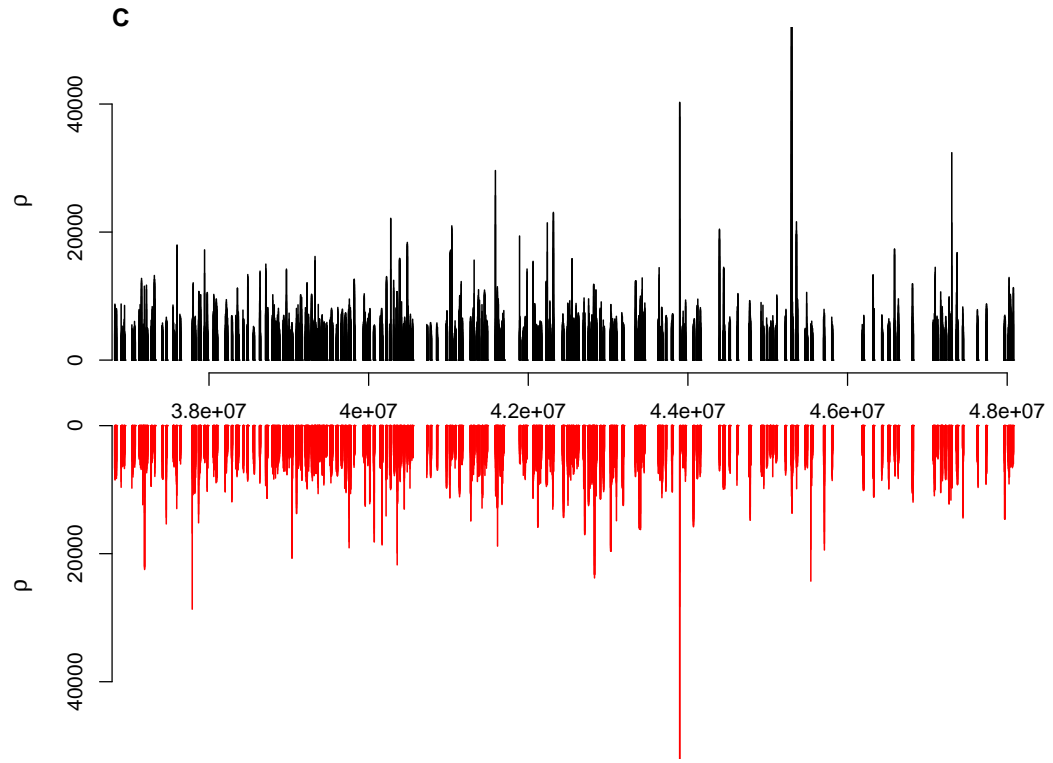


**Figure S5A.** The estimated recombination rates ( $\rho$ ) from 15504000 to 26362000 bp on chromosome 21 for YRI (black lines) and chimpanzee (red lines).



**Figure S5B.** The estimated recombination rates ( $\rho$ ) from 26362000 to 37220000 bp on chromosome 21 for YRI (black lines) and chimpanzee (red lines).



**Figure S5C.** The estimated recombination rates ( $\rho$ ) from 37220000 to 48078000 bp on chromosome 21 for YRI (black lines) and chimpanzee (red lines).