



**FIG. S1.** Distribution of sampled anonymous loci and candidate anonymous loci across the human genome. Horizontal axis shows human Chromosomes arrayed from 1-22, X, and Y. **(A)** Vertical bars indicate the numbers of sampled 1 kb long anonymous loci per chromosome and the downward trending line above the bars reflects the linear lengths of each chromosome in bp. Although numbers of anonymous loci correlates with chromosome sizes ( $r = 0.82$ ), several chromosomes strongly deviate from this relationship (e.g., 1, 6, 13, 18). **(B)** Vertical bars show the numbers of candidate anonymous loci, which are obtained at the conclusion of step 1 in our pipeline (Fig. 1A). The distribution of candidate

anonymous loci per chromosome is strongly correlated with the content of repetitive DNA found within anonymous regions. When repetitive DNA is excluded from neutral anonymous regions, the amount of remaining non-repetitive DNA (horizontal trending line) is proportional to the number of candidate anonymous loci found (source data are in table S2).