



**Figure S4.** The properties of single nucleotide polymorphisms (SNPs). Dogs were genotyped with customized and Illumina arrays. A: Cumulative distribution of minor allele frequencies B: The density of the filtered SNPs; C: Distribution of heterozygosity; D: Linkage disequilibrium (LD) decay ( $R^2$ ) over physical distance. The LD was calculated with all breeds and all Labrador Retrievers (LR) respectively.