**Table S1. SNPs classified by their positions on the human genome.**

|  |  |  |
| --- | --- | --- |
| Function | Number of SNPs | |
| PC3 | H1 |
| exonic | 2895 | 8395 |
| exonic; splicing | 25 | 119 |
| intronic | 68844 | 439822 |
| ncRNA\_exonic | 722 | 3301 |
| ncRNA\_intronic | 5203 | 30840 |
| ncRNA\_splicing | 3 | 51 |
| ncRNA\_UTR3 | 29 | 185 |
| ncRNA\_UTR5 | 18 | 33 |
| UTR3 | 1364 | 9375 |
| UTR5 | 1369 | 1945 |
| UTR5; UTR3 | 1 | 4 |
| splicing | 28 | 5506 |
| upstream | 3176 | 8005 |
| downstream | 1219 | 7627 |
| upstream; downstream | 85 | 266 |
| intergenic | 113664 | 696851 |

**Table S2. Datasets used for detecting SNPs in H1 cell line: these data were downloaded from NCBI.**

|  |  |  |
| --- | --- | --- |
| # GEO Accession | Sample Name | Experiment |
| GSM605332 | H1 cell line | H4K91ac |
| GSM605330 | H1 cell line | H4K5ac |
| GSM605329 | H1 cell line | H4K20me1 |
| GSM428291 | H1 cell line | H3K9me3 |
| GSM433174 | H1 cell line | H3K9me3 |
| GSM450266 | H1 cell line | H3K9me3 |
| GSM605325 | H1 cell line | H3K9me3 |
| GSM605327 | H1 cell line | H3K9me3 |
| GSM605328 | H1 cell line | H3K9me3 |
| GSM410807 | H1 cell line | H3K9ac |
| GSM433171 | H1 cell line | H3K9ac |
| GSM434785 | H1 cell line | H3K9ac |
| GSM605323 | H1 cell line | H3K9ac |
| GSM605321 | H1 cell line | H3K79me2 |
| GSM605322 | H1 cell line | H3K79me2 |
| GSM605318 | H1 cell line | H3K79me1 |
| GSM605319 | H1 cell line | H3K79me1 |
| GSM605320 | H1 cell line | H3K79me1 |
| GSM605317 | H1 cell line | H3K56ac |
| GSM667627 | H1 cell line | H3K56ac |
| GSM409308 | H1 cell line | H3K4me3 |
| GSM410808 | H1 cell line | H3K4me3 |
| GSM432392 | H1 cell line | H3K4me3 |
| GSM433170 | H1 cell line | H3K4me3 |
| GSM469971 | H1 cell line | H3K4me3 |
| GSM605315 | H1 cell line | H3K4me3 |
| GSM602260 | H1 cell line | H3K4me2 |
| GSM602261 | H1 cell line | H3K4me2 |
| GSM409307 | H1 cell line | H3K4me1 |
| GSM433177 | H1 cell line | H3K4me1 |
| GSM434762 | H1 cell line | H3K4me1 |
| GSM466739 | H1 cell line | H3K4me1 |
| GSM605312 | H1 cell line | H3K4me1 |
| GSM605311 | H1 cell line | H3K4ac |
| GSM667624 | H1 cell line | H3K4ac |
| GSM409312 | H1 cell line | H3K36me3 |
| GSM428296 | H1 cell line | H3K36me3 |
| GSM433176 | H1 cell line | H3K36me3 |
| GSM450268 | H1 cell line | H3K36me3 |
| GSM466737 | H1 cell line | H3K36me3 |
| GSM605309 | H1 cell line | H3K36me3 |
| GSM428295 | H1 cell line | H3K27me3 |
| GSM433167 | H1 cell line | H3K27me3 |
| GSM434776 | H1 cell line | H3K27me3 |
| GSM466734 | H1 cell line | H3K27me3 |
| GSM605308 | H1 cell line | H3K27me3 |
| GSM466732 | H1 cell line | H3K27ac |
| GSM663427 | H1 cell line | H3K27ac |
| GSM605305 | H1 cell line | H3K23me2 |
| GSM605306 | H1 cell line | H3K23me2 |
| GSM667617 | H1 cell line | H3K23ac |
| GSM667618 | H1 cell line | H3K23ac |
| GSM602259 | H1 cell line | H3K18ac |
| GSM605304 | H1 cell line | H3K18ac |
| GSM667614 | H1 cell line | H3K14ac |
| GSM667615 | H1 cell line | H3K14ac |
| GSM605302 | H1 cell line | H2BK5ac |
| GSM605303 | H1 cell line | H2BK5ac |
| GSM605300 | H1 cell line | H2BK20ac |
| GSM605301 | H1 cell line | H2BK20ac |
| GSM605298 | H1 cell line | H2BK15ac |
| GSM605299 | H1 cell line | H2BK15ac |
| GSM605296 | H1 cell line | H2BK12ac |
| GSM605297 | H1 cell line | H2BK12ac |
| GSM605295 | H1 cell line | H2BK120ac |
| GSM602257 | H1 cell line | H2AK5ac |
| GSM602258 | H1 cell line | H2AK5ac |
| GSM428289 | H1 cell line | ChIP-Seq input |
| GSM433179 | H1 cell line | ChIP-Seq input |
| GSM450270 | H1 cell line | ChIP-Seq input |
| GSM605334 | H1 cell line | ChIP-Seq input |
| GSM605335 | H1 cell line | ChIP-Seq input |
| GSM605336 | H1 cell line | ChIP-Seq input |
| GSM605337 | H1 cell line | ChIP-Seq input |
| GSM605338 | H1 cell line | ChIP-Seq input |
| GSM605339 | H1 cell line | ChIP-Seq input |
| GSM667641 | H1 cell line | ChIP-Seq input |
| GSM667642 | H1 cell line | ChIP-Seq input |
| GSM438361 | H1 cell line | mRNA-Seq |
| GSM484408 | H1 cell line | mRNA-Seq |
| GSM428286 | H1 cell line | MRE-Seq |
| GSM450236 | H1 cell line | MRE-Seq |
| GSM456941 | H1 cell line | MeDIP-Seq |

S3: The derivation of equation (1).

To further illustrate the idea behind equation (1), we present the Venn diagram below.

