



Supplementary Figure S1. Nucleotide composition dynamics of genomes. (A) Genomic GC content varies across species, as broadly from 0.13 to 0.77 in bacteria, and narrowly from 0.48 to 0.55 in mammals. Despite this, the Chargaff's second parity rule is significantly observed in almost all species categories ($R^2 > 0.99$) except viruses, which presents a weak correlation between A and T ($R^2 = 0.30$) and between C and G ($R^2 = 0.42$). For each category, genome count and coefficient of determinations (R^2) for A vs. T and C vs. G are listed within brackets. (B) Based on the Baltimore classification, only dsDNA viruses comply better with the Chargaff's rule ($R^2 = 0.66$ for A vs. T and $R^2 = 0.74$ for C vs. G). (C) Based on a wide variety of genome sequences that differ greatly in GC content, positional GC contents are found to be positively correlated with overall GC content.