**Supplementary Table 6: Nucleotide composition at FFS of different amino acids in the high expression genes (HEGs) of five bacteria**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Bacteria** | **Base** | **Val** | | **Pro** | | **Thr** | | **Ala** | | **Gly** | |
| **LeS** | **LaS** | **LeS** | **LaS** | **LeS** | **LaS** | **LeS** | **LaS** | **LeS** | **LaS** |
| ***Ec*** | A | 0.285 | 0.200 | 0.125 | 0.204 | 0.042 | 0.056 | 0.282 | 0.275 | 0.005 | 0.015 |
| T | 0.561 | 0.440 | 0.069 | 0.102 | 0.458 | 0.352 | 0.470 | 0.392 | 0.594 | 0.577 |
| G | 0.108 | 0.260 | 0.792 | 0.694 | 0.030 | 0.155 | 0.181 | 0.199 | 0.005 | 0.054 |
| C | 0.045 | 0.100 | 0.014 | 0.000 | 0.470 | 0.437 | 0.067 | 0.135 | 0.396 | 0.354 |
| ***Kp*** | A | 0.206 | 0.143 | 0.080 | 0.023 | 0.018 | 0.029 | 0.213 | 0.126 | 0.005 | 0.008 |
| T | 0.494 | 0.374 | 0.069 | 0.045 | 0.345 | 0.243 | 0.368 | 0.327 | 0.489 | 0.361 |
| G | 0.206 | 0.297 | 0.816 | 0.773 | 0.057 | 0.043 | 0.279 | 0.245 | 0.045 | 0.042 |
| C | 0.095 | 0.187 | 0.034 | 0.159 | 0.580 | 0.686 | 0.140 | 0.302 | 0.461 | 0.588 |
| ***Se*** | A | 0.199 | 0.252 | 0.108 | 0.100 | 0.051 | 0.055 | 0.235 | 0.208 | 0.020 | 0.042 |
| T | 0.531 | 0.327 | 0.122 | 0.100 | 0.358 | 0.260 | 0.368 | 0.321 | 0.515 | 0.407 |
| G | 0.189 | 0.224 | 0.755 | 0.740 | 0.071 | 0.178 | 0.258 | 0.314 | 0.020 | 0.034 |
| C | 0.081 | 0.196 | 0.014 | 0.060 | 0.520 | 0.507 | 0.139 | 0.157 | 0.444 | 0.517 |
| ***Sa*** | A | 0.467 | 0.385 | 0.594 | 0.000 | 0.449 | 0.444 | 0.408 | 0.421 | 0.188 | 0.000 |
| T | 0.423 | 0.615 | 0.368 | 1.000 | 0.484 | 0.556 | 0.490 | 0.579 | 0.683 | 1.000 |
| G | 0.058 | 0.000 | 0.032 | 0.000 | 0.063 | 0.000 | 0.088 | 0.000 | 0.012 | 0.000 |
| C | 0.051 | 0.000 | 0.006 | 0.000 | 0.004 | 0.000 | 0.014 | 0.000 | 0.117 | 0.000 |
| ***Sp*** | A | 0.275 | 0.200 | 0.653 | 1.000 | 0.391 | 0.333 | 0.362 | 0.250 | 0.315 | 0.000 |
| T | 0.567 | 0.400 | 0.306 | 0.000 | 0.525 | 0.667 | 0.487 | 0.750 | 0.586 | 1.000 |
| G | 0.065 | 0.400 | 0.032 | 0.000 | 0.038 | 0.000 | 0.078 | 0.000 | 0.029 | 0.000 |
| C | 0.093 | 0.000 | 0.008 | 0.000 | 0.046 | 0.000 | 0.074 | 0.000 | 0.070 | 0.000 |

Table presents amino acid wise nucleotide composition values in HEG set. The set of genes considered are listed below. It may be noted that, a common set of genes for all the organisms are not considered because annotations and alignment of the genes were not available in our dataset.

The 19 HEGs considered in *Ec* LeS are dnaK\_1, rpsB, tsf, rpsA, ompC\_2, rpsO, rplQ, rplC, rpsJ, tufA, fusA, rpsG, rpsL, rpmG, rpmB, rplK, rplA, rplJ and rplL.

The 7 HEGs considered in *Ec* LaS are dnaK\_2, rpsT, ompF, ompA, lpp\_1, lpp\_2 and ompC\_1.

The 19 HEGs considered in *Kp* LeS are dnaK\_1, rpsB, tsf, rpsA, ompC, rpsO, rplQ, rplC, rpsJ, fusA\_1, fusA\_2, rpsG, rpsL, rpmG, rpmB, rplK, rplA, rplJ and rplL.

The 5 HEGs considered in *Kp* LaS are dnaK\_2, ompF, ompA, lpp and rpsU

The 17 HEGs considered in *Se* LeS are dnaK\_1, rpsB, tsf, rpsA, ompC\_1, ompC\_2, rpsO, rplQ, rplC, rpsJ, fusA, rpsG, rpsL, rpmG, rpmB, rplK and rplA.

The 6 HEGs considered in *Se* LaS are dnaK\_2, ompF, ompA, lpp\_1, lpp\_2 and rpsU.

The 19 HEGs considered in *Sa* LeS are dnaK, rpsB, tsf, rpsA\_1, rpsA\_2, rpsU, rplQ, rplC, rpsJ, fusA, rpsG, rpsL, rpmG2\_1, rpmG2\_2, rpmH, rplK, rplA, rplJ and rplL.

The 2 HEGs considered in *Sa* LaS are rpsT and rpmB.

The 18 HEGs considered in *Sp* LeS are dnaK, rpsB, tsf, rpsA\_1, rpsA\_2, rpsU, rpsO, rplQ, rplC, rpsJ, rpsG, rpsL, rpmB, rpmH, rplK, rplA, rplJ and rplL.

The 2 HEGs considered in *Sp* LaS are rpsT and rpmGA.