**Table S1**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Network1 | Relationship2 | Phylogeny3  | Branch support cut-off4 | Correlation coefficient5 | p-value6 | Mean7  | SD7 |
| Baseline | using | NJ | 70 | 0.300 | <0.001 | 0.005 | 0.009 |
|  | sharing | NJ | 70 | 0.200 | <0.001 | 0.001 | 0.004 |
|  | using | NJ | 80 | 0.417 | <0.001 | 0.005 | 0.015 |
|  | sharing | NJ | 80 | 0.292 | <0.001 | 0.001 | 0.008 |
|  | using | ML | 70 | 0.243 | <0.001 | 0.005 | 0.009 |
|  | sharing | ML | 70 | 0.186 | <0.001 | 0.002 | 0.005 |
|  | using | ML | 80 | 0.263 | <0.001 | 0.005 | 0.012 |
|  | sharing | ML | 80 | 0.211 | <0.001 | 0.002 | 0.007 |
| Flattened | using | NJ | 70 | 0.292 | <0.001 | 0.006 | 0.009 |
|  | sharing | NJ | 70 | 0.236 | <0.001 | 0.002 | 0.005 |
|  | using | NJ | 80 | 0.379 | <0.001 | 0.006 | 0.014 |
|  | sharing | NJ | 80 | 0.276 | <0.001 | 0.002 | 0.008 |
|  | using | ML | 70 | 0.214 | <0.001 | 0.006 | 0.009 |
|  | sharing | ML | 70 | 0.179 | <0.001 | 0.002 | 0.005 |
|  | using | ML | 80 | 0.212 | <0.001 | 0.006 | 0.011 |
|  | sharing | ML | 80 | 0.173 | <0.001 | 0.002 | 0.006 |