Supplementary table 2: Log-likelihood/total tree length/total internal branch length scores of phylogenetic trees with respect to various substitution matrices and alignments of set2.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Alignment | BLOSUM 62 | Dayhoff | JTT | JTT DCMut | LG | PMB | VT | WAG | DCMut | Minimum | Maximum | Average | Standard Deviation |
| CLUSTAL-Omega | -352939.8  /92.163  /28.134 | -355655.9  /114.968  /34.905 | -355723.7  /109.971  /33.809 | -355660  /109.946  /33.693 | -355579.9  /116.608  /35.843 | -352643.3  /90.091  /26.624 | -353049.3  /94.353  /28.589 | -353502.2  /102.204  /31.186 | -355629.3  /114.197  /35.143 | -355723.7  /90.091  /26.624 | -352643.3  /116.608  /35.843 | -354487.0  /104.944  /31.992 | 1396.453  /10.464  /3.452 |
| MUSCLE | -389924.5  /182.637  /37.271 | -391294.2  /271.607  /53.235 | -391017.7  /242.83  /49.174 | -390984.4  /240.583  /48.096 | -391277.6  /267.359  /50.863 | -389736.4  /175.167  /36.864 | -390074.1  /191.754  /38.525 | -390566.1  /224.786  /45.256 | -391293  /272.449  /51.243 | -391294.2  /175.167  /36.864 | -389736.4  /272.449  /53.235 | -390685.3  /229.908  /45.614 | 628.278  /38.641  /6.449 |
| Kalign | -370841.3  /133.68  /35.568 | -371914.7  /175.436  /46.694 | -371798.1  /163.511  /43 | -371746.8  /164.071  /43.574 | -370790.5  /174.236  /45.866 | -370783.4  /130.037  /33.308 | -370454.5  /137.865  /36.013 | -370067.2  /151.208  /40.156 | -371905.3  /174.001  /45.119 | -371914.7  /130.037  /33.308 | -370067.2  /175.436  /46.694 | -371144.6  /156.005  /41.033 | 702.325  /18.303  /4.974 |
| MAFFT | -357701.7  /107.146  /30.045 | -361105.2  /138.879  /38.904 | -360086.3  /131.356  /38.722 | -360088.6  /131.575  /38.549 | -359272.5  /136.837  /39.254 | -357647.2  /105.16  /29.619 | -357917.9  /110.302  /31.451 | -358393.8  /119.773  /33.887 | -361092.8  /138.676  /39.158 | -361105.2  /105.160  /29.619 | -357647.2  /138.879  /39.254 | -359256.2  /124.41  /35.51 | 1401.538  /13.946  /4.214 |
| MUSCLE1 | -375031.8  /158.051  /43.569 | -376923.2  /225.427  /60.359 | -376366  /203.589  /54.963 | -376328.8  /202.943  /53.314 | -376471.9  /221.816  /61.421 | -374833.4  /153.04  /40.145 | -375067.9  /163.484  /43.97 | -375584.6  /186.847  /53.608 | -376893.1  /224.712  /58.924 | -376923.2  /153.04  /40.145 | -374833.4  /116.595  /61.421 | -375944.5  /193.323  /52.252 | 823.605  /29.207  /7.867 |
| CLUSTAL1 | -352919.6  /92.025  /27.717 | -355655.4  /114.658  /35.220 | -355723.9  /110.238  /33.717 | -355659.1  /110.107  /34.013 | -355592.1  /116.595  /36.028 | -352650.6  /90.14  /26.624 | -353035.8  /94.008  /28.588 | -353502  /102.142  /31.181 | -355631.6  /114.602  /35.141 | -355723.9  /90.14  /26.624 | -352650.6  /116.595  /36.028 | -354485.6  /104.946  /32.025 | 1401.13  /10.556  /3.58 |
| MAFFT1 | -348864.2  /87.74  /27.204 | -352306.7  /107.563  /33.457 | -351938  /104.69  /32.425 | -351868.4  /104.173  /32.218 | -350939.0  /108.65  /32.581 | -348958.8  /86.185  /25.666 | -349444.4  /89.666  /27.068 | -349606.9  /96.576  /29.197 | -352303.4  /107.039  /32.42 | -352306.7  /86.185  /25.6 | -348864.2  /108.65  /33.457 | -350692.2  /99.144  /30.249 | 1469.692  /9.179  /2.969 |
| Kalign1 | -287222.3  /48.657  /11.513 | -285245.4  /52.637  /12.343 | -286145.5  /52.631  /12.43 | -285901.5  /52.646  /12.683 | -281093.7  /54.294  /12.603 | -287443.1  /48.066/  11.301 | -286129.3  /48.832  /11.687 | -283006.7  /50.786  /11.93 | -285297.9  /52.735  /12.528 | -287443.1  /48.066  /11.301 | -281093.7  /54.294  /12.683 | -285276.2  /51.254  /12.113 | 2031.102  /2.240  /0.515 |
| PROMALS3D | -378489.1  /141.084  /42.953 | -380373.8  /192.276  /59.09 | -380181.2  /177.664  /55.09 | -380148.1  /177.841  /55.997 | -380867.6  /199.335  /62.593 | -378135.8  /135.850  /41.736 | -378779.9  /146.154  /45.34 | -379482.5  /165.896  /50.997 | -380362.2  /192.059  /57.896 | -380867.6  /135.85  /41.736 | -378135.8  /199.335  /62.593 | -379646.7  /169.796  /52.410 | 966.271  /23.851  /7.531 |
| Minimum | -389924.5  /48.657  /11.513 | -391294.2  /52.637  /12.343 | -391017.7  /52.631  /12.430 | -390984.4  /52.646  /12.683 | -391277.6  /54.294  /12.603 | -389736.4  /48.06  /11.301 | -390074.1  /48.832  /11.687 | -390566.1  /50.786  /11.93 | -391293  /52.735  /12.528 |  |  |  |  |
| Maximum | -287222.3  /182.637  /43.569 | -285245.4  /271.607  /60.359 | -286145.5  /242.83  /55.09 | -285901.5  /240.583  /55.997 | -281093.7  /267.359  /62.593 | -287443.1  /175.16  /41.736 | -286129.3  /191.754  /45.34 | -283006.7  /224.786  /53.608 | -285297.9  /272.449  /58.924 |  |  |  |  |
| Average | -357103.8  /115.909  /31.553 | -358941.6  /154.828  /41.579 | -358775.6  /144.0547  /39.259 | -358709.5  /143.765  /39.126 | -357987.2  /155.081  /41.895 | -356981.3  /112.637  /30.21 | -357105.9  /119.602  /32.359 | -357079.1  /133.358  /36.37 | -358934.3  /154.497  /40.841 |  |  |  |  |
| Standard Deviation | 29646.1  /41.390  /9.825 | 30616.7  /67.62  /15.141 | 30246.8  /58.29  /13.401 | 30310.9  /57.819  /13.17 | 31845  /66.137/  15.526 | 29511.7  /39.248/  9.284 | 29974  /43.951  /10.242 | 31032.8  /53.5  /12.81 | 30597.7  /67.738  /14.51 |  |  |  |  |