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|  | **Two Epoch** | | | **One Epoch** |
| **Species** | Nu | Tau | Likelihood | Likelihood |
| A. finegoldii (10) | 0.0024135 | 0.0160841 | -28.0073 | -158.66738007844833 |
| A. finegoldii (12) | 0.00141166 | 0.0102196 | -38.0423 | -195.1654192197775 |
| A. finegoldii (14) | 0.0536736 | 0.192409 | -51.2531 | -226.6443517359121 |
| A. finegoldii (16) | 0.0216463 | 0.098936 | -66.807 | -254.92853145861318 |
| A. finegoldii (18) | 0.0545651 | 0.199532 | -84.1735 | -279.5723881256772 |
| A. muciniphila (10) | 0.40622 | 0.166818 | -25.3404 | -271.860384337564 |
| A. muciniphila (12) | 0.406192 | 0.221325 | -30.1067 | -340.2099727784189 |
| A. muciniphila (14) | 0.412214 | 0.184787 | -35.0968 | -394.4640223844726 |
| A. muciniphila (16) | 0.385545 | 0.263801 | -40.7719 | -441.06190927399075 |
| A. muciniphila (18) | 0.391512 | 0.240012 | -48.1178 | -482.1546733933401 |
| A. onderdonkii (10) | 0.227832 | 0.0881793 | -25.5034 | -257.2562129893595 |
| A. onderdonkii (12) | 0.000663046 | 0.00503453 | -30.3591 | -314.12664610120737 |
| A. onderdonkii (14) | 0.00077792 | 0.00578665 | -35.7025 | -367.26556546208485 |
| A. onderdonkii (16) | 0.00874967 | 0.0439118 | -41.3301 | -411.1944780140302 |
| A. onderdonkii (18) | 0.000125171 | 0.00116278 | -47.9952 | -452.4473745351561 |
| A. putredinis (10) | 8.43938 | 3.10627 | -22.5545 | -590.910821013696 |
| A. putredinis (12) | 9.19344 | 3.44869 | -28.8994 | -735.249998197641 |
| A. putredinis (14) | 9.61159 | 3.63098 | -36.1261 | -863.2523605907211 |
| A. putredinis (16) | 10.6528 | 4.16344 | -44.1492 | -974.1492077833045 |
| A. putredinis (18) | 10.7771 | 4.21105 | -53.1155 | -1070.3713299493795 |
| A. shahii (10) | 13.9005 | 0.035724 | -23.6239 | -49.8864536305 |
| A. shahii (12) | 17.2738 | 0.0394458 | -28.1309 | -69.2119480339311 |
| A. shahii (14) | 18.7669 | 0.0499848 | -37.2099 | -92.12656956679211 |
| A. shahii (16) | 23.2719 | 0.0338066 | -37.0198 | -117.66999818480463 |
| A. shahii (18) | 3.48215 | 0.0630991 | -42.7689 | -145.3302055638601 |
| B. bacterium (10) | 0.656385 | 0.0924681 | -25.9385 | -50.45437839261831 |
| B. bacterium (12) | 0.692618 | 0.135731 | -34.689 | -66.42410461333293 |
| B. bacterium (14) | 0.685901 | 0.116485 | -47.2415 | -83.95198106999351 |
| B. bacterium (16) | 0.72274 | 0.221349 | -61.9099 | -102.24641285809412 |
| B. bacterium (18) | 0.747965 | 0.26547 | -78.8852 | -121.5256301759091 |
| B. caccae (10) | 1.91278 | 0.0536306 | -23.7114 | -36.301684917431885 |
| B. caccae (12) | 1.40648 | 0.120183 | -28.261 | -46.27593526221608 |
| B. caccae (14) | 1.66655 | 0.0717302 | -32.5175 | -57.22309009287301 |
| B. caccae (16) | 1.60429 | 0.0791623 | -37.06 | -68.42155328457329 |
| B. caccae (18) | 3.27649 | 0.0316115 | -41.312 | -80.89728650631787 |
| B. cellulosilyticus (10) | 2.29372 | 0.828225 | -25.4978 | -416.57659483365387 |
| B. cellulosilyticus (12) | 2.75049 | 1.50239 | -30.3851 | -515.8026292276945 |
| B. cellulosilyticus (14) | 2.66512 | 1.39504 | -35.0243 | -605.3428693350315 |
| B. cellulosilyticus (16) | 2.37427 | 0.975554 | -39.3666 | -686.3523745472339 |
| B. cellulosilyticus (18) | 3.18192 | 1.99256 | -45.0077 | -760.0016756856094 |
| B. fragilis (10) | 3.22129 | 0.248444 | -24.7025 | -371.6239429929792 |
| B. fragilis (12) | 2.40281 | 0.406655 | -39.3029 | -495.2058080779716 |
| B. fragilis (14) | 2.92751 | 0.288772 | -35.0196 | -621.4516522293925 |
| B. fragilis (16) | 3.21259 | 0.237611 | -38.4512 | -747.0948649758061 |
| B. fragilis (18) | 3.0888 | 0.26575 | -43.9282 | -871.2663353748503 |
| B. intestinihominis (10) | 0.149372 | 0.00621968 | -27.798 | -92.51292865669711 |
| B. intestinihominis (12) | 0.437146 | 0.0315171 | -36.2919 | -126.12642765565943 |
| B. intestinihominis (14) | 0.540065 | 0.050769 | -47.1256 | -159.78453733334754 |
| B. intestinihominis (16) | 0.653196 | 0.118365 | -62.1081 | -193.57683995560183 |
| B. intestinihominis (18) | 0.643165 | 0.092557 | -77.7833 | -227.04279680796026 |
| B. ovatus (10) | 2.25642 | 0.0603274 | -22.3608 | -34.6241364497273 |
| B. ovatus (12) | 7.20843 | 0.0339838 | -26.4903 | -44.85214406663749 |
| B. ovatus (14) | 3.52144 | 0.0446575 | -30.6202 | -57.29119777634651 |
| B. ovatus (16) | 8.04801 | 0.0348558 | -34.6214 | -71.16037130275527 |
| B. ovatus (18) | 2.12642 | 0.108158 | -44.4466 | -85.96252530619563 |
| B. thetaiotaomicron (10) | 0.0163749 | 0.100595 | -31.0133 | -56.57709360220542 |
| B. thetaiotaomicron (12) | 0.0143413 | 0.0909163 | -39.1149 | -67.86495644336355 |
| B. thetaiotaomicron (14) | 0.0427133 | 0.22371 | -47.1437 | -79.68659050254428 |
| B. thetaiotaomicron (16) | 0.00659293 | 0.0473145 | -55.6264 | -90.53149830453367 |
| B. thetaiotaomicron (18) | 0.13555 | 0.546058 | -63.9759 | -101.09623839611413 |
| B. uniformis (10) | 32.233 | 49.2075 | -22.083 | -47.09826242811914 |
| B. uniformis (12) | 7.59117 | 10.6886 | -26.1642 | -57.68891387756207 |
| B. uniformis (14) | 1.74006 | 1.18761 | -30.3353 | -66.4434523929051 |
| B. uniformis (16) | 1.77798 | 1.27066 | -34.4863 | -74.54592033988752 |
| B. uniformis (18) | 1.76202 | 1.2601 | -38.5199 | -80.89423736027015 |
| B. vulgatus (10) | 4.9289 | 0.0037879 | -23.6192 | -23.829172435319833 |
| B. vulgatus (12) | 3.01055 | 0.00824215 | -28.3958 | -29.059697599464016 |
| B. vulgatus (14) | 1.13481 | 0.0430459 | -33.5302 | -34.81032024811884 |
| B. vulgatus (16) | 6.1956 | 0.0100282 | -36.182 | -40.15132639392118 |
| B. vulgatus (18) | 1.78105 | 0.0311021 | -39.7184 | -47.51509635860066 |
| B. xylanisolvens (10) | 0.0132507 | 0.0850143 | -22.7839 | -27.502007390339713 |
| B. xylanisolvens (12) | 0.0369925 | 0.202084 | -27.761 | -32.67997566774466 |
| B. xylanisolvens (14) | 0.265088 | 0.876258 | -32.9757 | -37.87379244237218 |
| B. xylanisolvens (16) | 0.0104182 | 0.0720721 | -38.4724 | -43.37195364729632 |
| B. xylanisolvens (18) | 0.125021 | 0.540209 | -44.0514 | -49.182891442799246 |
| D. invisus (10) | 1.57348 | 0.0827088 | -25.8386 | -50.10320348806272 |
| D. invisus (12) | 2.42975 | 0.0476867 | -30.8393 | -71.05069010726947 |
| D. invisus (14) | 18.4977 | 0.0217412 | -37.1637 | -95.18332533145986 |
| D. invisus (16) | 3.02789 | 0.0450853 | -42.962 | -122.28821161779706 |
| D. invisus (18) | 2.21215 | 0.0579241 | -50.6428 | -156.26389196593573 |
| E. eligens (10) | 44.8382 | 92.7077 | -25.7159 | -44.11193197504326 |
| E. eligens (12) | 106.953 | 222.988 | -31.0836 | -53.411666204312496 |
| E. eligens (14) | 55.5916 | 115.696 | -36.5358 | -61.91821099785466 |
| E. eligens (16) | 32.0696 | 65.638 | -42.6105 | -72.00705318163409 |
| E. eligens (18) | 83.0965 | 170.788 | -47.6559 | -80.02451076590751 |
| E. rectale (10) | 1.64542 | 0.769789 | -25.918 | -163.86495196229225 |
| E. rectale (12) | 1.58777 | 0.580629 | -30.7554 | -203.9217927887821 |
| E. rectale (14) | 2.16442 | 1.87647 | -35.8725 | -238.73120577496502 |
| E. rectale (16) | 1.65568 | 0.832631 | -40.2183 | -271.2183950435392 |
| E. rectale (18) | 3.53508 | 4.03943 | -45.6508 | -300.6688830067369 |
| F. prausnitzii (10) | 1.09867 | 1.299 | -26.2847 | -27.848481108148917 |
| F. prausnitzii (12) | 9.21845 | 30.6123 | -31.1614 | -33.83407165128665 |
| F. prausnitzii (14) | 1.06848 | 0.243666 | -35.9031 | -40.18847936906059 |
| F. prausnitzii (16) | 1.06737 | 0.337445 | -40.6422 | -46.20320308065311 |
| F. prausnitzii (18) | 1.09659 | 0.243501 | -45.4701 | -54.57869935754752 |
| Oscillibacter sp. (10) | 5.02523 | 0.0759358 | -24.9166 | -122.49240820956948 |
| Oscillibacter sp. (12) | 8.01039 | 0.0744874 | -29.6372 | -183.95614434688196 |
| Oscillibacter sp. (14) | 5.09949 | 0.0852462 | -36.7551 | -245.37306153640384 |
| Oscillibacter sp. (16) | 4.02196 | 0.0964394 | -45.7138 | -313.25361229792315 |
| Oscillibacter sp. (18) | 2.93863 | 0.133149 | -58.2456 | -386.60885749472527 |
| O. splanchnicus (10) | 9.55467 | 31.6094 | -23.0582 | -23.613390012760647 |
| O. splanchnicus (12) | 1.5589 | 3.85637 | -27.5014 | -28.079710261162745 |
| O. splanchnicus (14) | 2.43161 | 7.38277 | -31.8308 | -32.427532235250965 |
| O. splanchnicus (16) | 11.5442 | 40.7758 | -36.2858 | -36.8739292604796 |
| O. splanchnicus (18) | 1.31261 | 3.03154 | -40.6788 | -41.17584009768916 |
| P. copri (10) | 3.47521 | 0.358743 | -28.7823 | -839.2162791757946 |
| P. copri (12) | 4.11266 | 0.305928 | -37.0422 | -1143.2168014732433 |
| P. copri (14) | 4.4606 | 0.315347 | -78.4052 | -1494.2754772140547 |
| P. copri (16) | N/A | N/A | N/A | N/A |
| P. copri (18) | N/A | N/A | N/A | N/A |
| P. distasonis (10) | 0.776827 | 0.0916526 | -26.7736 | -44.38095023353162 |
| P. distasonis (12) | 0.791112 | 0.105926 | -33.356 | -56.45492961817399 |
| P. distasonis (14) | 0.807558 | 0.136155 | -41.1449 | -68.50672337859214 |
| P. distasonis (16) | 0.813611 | 0.161783 | -49.9537 | -79.98190123672157 |
| P. distasonis (18) | 0.836116 | 0.228785 | -58.9054 | -91.25185015802981 |
| P. merdae (10) | 0.742039 | 0.379442 | -24.8629 | -50.53570047635185 |
| P. merdae (12) | 0.755594 | 0.341855 | -29.8825 | -61.8852600976561 |
| P. merdae (14) | 0.737274 | 0.391528 | -35.3025 | -73.68111715850773 |
| P. merdae (16) | 0.687759 | 0.605537 | -40.7138 | -83.64791875639548 |
| P. merdae (18) | 0.0352227 | 0.176049 | -46.3478 | -93.21962114603184 |
| Phascolarcto. sp. (10) | 2.58953 | 0.328679 | -23.7862 | -244.39453441684418 |
| Phascolarcto. sp. (12) | 2.46391 | 0.322072 | -29.7279 | -319.0501304679924 |
| Phascolarcto. sp. (14) | 2.57614 | 0.355933 | -34.4246 | -393.170544586656 |
| Phascolarcto. sp. (16) | 2.51285 | 0.540036 | -46.7268 | -458.55350307162144 |
| Phascolarcto. sp. (18) | N/A | N/A | N/A | N/A |
| R. bicirculans (10) | 512.46 | 417.649 | -26.9991 | -1168.6064597172044 |
| R. bicirculans (12) | 310.657 | 252.905 | -32.6474 | -1430.8374296203147 |
| R. bicirculans (14) | 377.278 | 307.728 | -38.5849 | -1650.5914319833837 |
| R. bicirculans (16) | 286.055 | 233.838 | -44.6031 | -1841.5728263737565 |
| R. bicirculans (18) | 258.088 | 210.431 | -50.5602 | -2007.462031447595 |
| R. bromii (10) | 2.99009 | 1.50668 | -25.1369 | -455.1322437282979 |
| R. bromii (12) | 3.01357 | 1.50539 | -29.9893 | -563.2324294410473 |
| R. bromii (14) | 2.96492 | 1.46003 | -34.8367 | -658.0589498106256 |
| R. bromii (16) | 2.85747 | 1.30462 | -39.9897 | -746.0033986139315 |
| R. bromii (18) | 3.00012 | 1.49253 | -46.0828 | -825.2435880425423 |