

**Table S14:** Statistical support of the twelve alternative topologies inferred from dataset sm-nt12. Statistical tests include (1) deltaL (logL difference from the maximal logL in the dataset), (2) bp-RELL (bootstrap proportion using RELL method), (3)  $p$ -KH ( $p$ -value of one sided), (3)  $p$ -SH ( $p$ -value of Shimodaira-Hasegawa test), (4) c-ELW (Expected Likelihood Weight), and  $p$ -AU ( $p$ -value of approximately unbiased test) as implemented in IQtree. The KH, SH and AU tests return  $p$ -values, thus a tree is rejected if its  $p$ -value < 0.05 (labeled in red).

| Tree | logL        | deltaL  | bp-RELL | $p$ -KH | $p$ -SH | c-ELW    | $p$ -AU         |
|------|-------------|---------|---------|---------|---------|----------|-----------------|
| 1    | -3240200.31 | 0       | 0.515   | 0.536   | 1       | 0.458    | <b>0.669</b>    |
| 3    | -3240201.24 | 0.93022 | 0.449   | 0.464   | 0.933   | 0.4      | <b>0.519</b>    |
| 2    | -3240202.69 | 2.377   | 0.0117  | 0.0415  | 0.921   | 0.0681   | <b>0.0156</b>   |
| 8    | -3240203.56 | 3.2541  | 0.0112  | 0.381   | 0.891   | 0.0615   | <b>0.00453</b>  |
| 4    | -3240248.08 | 47.766  | 0       | 0.0001  | 0.0935  | 1.26E-11 | <b>7.97E-62</b> |
| 11   | -3240249.01 | 48.695  | 0       | 0.0009  | 0.0918  | 7.62E-11 | <b>1.91E-36</b> |
| 12   | -3240250.08 | 49.772  | 0       | 0.0002  | 0.0856  | 2.79E-12 | <b>2.63E-41</b> |
| 5    | -3240255.92 | 55.614  | 0       | 0.0001  | 0.0509  | 5.65E-08 | <b>1.78E-72</b> |
| 10   | -3240257.74 | 57.432  | 0       | 0.0002  | 0.0523  | 2.49E-15 | <b>8.77E-51</b> |
| 7    | -3240260.54 | 60.23   | 0.0126  | 0.0233  | 0.0512  | 0.0122   | <b>0.0146</b>   |
| 6    | -3240313.12 | 112.81  | 0       | 0       | 0.0004  | 6.59E-13 | <b>0.00184</b>  |
| 9    | -3240315.26 | 114.94  | 0       | 0       | 0       | 5.88E-14 | <b>0.0019</b>   |