

**Table S7:** Results of the UniqueTree analysis when examining the 50 ML trees of dataset sm-nt12. The tree ID names of the respective ML trees (tree ID) inferred with IQtree and calculated log-likelihood (logL) scores are given in descending order. Numbers in brackets indicate how often a given topology was identified. The AU test returns p-values, thus a tree is rejected with a  $p$ -value < 0.05 (labeled in red). The best ML tree has a logL score of -3240109.073 (bold) and represents the most frequent topology.

tree ID	logL	[29]	[7]	[4]	[2]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	[1]	p-AU
<b>ML_r nt12 00.log:BEST</b>	<b>-3240109.073</b>	x												<b>0.669</b>
ML_r nt12 17.log:BEST	-3240112.989		x											<b>0.0156</b>
ML_r nt12 12.log:BEST	-3240117.189		x											<b>0.0156</b>
ML_r nt12 19.log:BEST	-3240117.306	x												<b>0.669</b>
ML_r nt12 04.log:BEST	-3240117.561		x											<b>0.0156</b>
ML_r nt12 15.log:BEST	-3240117.763								x					<b>0.0045</b>
ML_p nt12 20.log:BEST	-3240118.865	x												<b>0.669</b>
ML_p nt12 06.log:BEST	-3240120.075	x												<b>0.669</b>
ML_p nt12 16.log:BEST	-3240120.239	x												<b>0.669</b>
ML_r nt12 16.log:BEST	-3240120.32		x											<b>0.0156</b>
ML_r nt12 08.log:BEST	-3240121.303	x												<b>0.669</b>
ML_r nt12 11.log:BEST	-3240122.509	x												<b>0.669</b>
ML_p nt12 04.log:BEST	-3240122.6	x												<b>0.669</b>
ML_p nt12 02.log:BEST	-3240122.665	x												<b>0.669</b>
ML_r nt12 02.log:BEST	-3240123.329		x											<b>0.0156</b>
ML_p nt12 14.log:BEST	-3240123.589			x										<b>0.519</b>
ML_r nt12 24.log:BEST	-3240124.503	x												<b>0.669</b>
ML_r nt12 10.log:BEST	-3240125.869		x											<b>0.0156</b>
ML_r nt12 07.log:BEST	-3240125.92	x												<b>0.669</b>
ML_p nt12 11.log:BEST	-3240127.039	x												<b>0.669</b>
ML_r nt12 03.log:BEST	-3240127.813	x												<b>0.669</b>
ML_p nt12 19.log:BEST	-3240128.068	x												<b>0.669</b>
ML_r nt12 01.log:BEST	-3240128.644		x											<b>0.0156</b>
ML_p nt12 05.log:BEST	-3240131.746	x												<b>0.669</b>
ML_p nt12 13.log:BEST	-3240132.471	x												<b>0.669</b>
ML_p nt12 24.log:BEST	-3240132.478	x												<b>0.669</b>
ML_p nt12 07.log:BEST	-3240133.634	x												<b>0.669</b>
ML_p nt12 15.log:BEST	-3240134.093	x												<b>0.669</b>
ML_p nt12 21.log:BEST	-3240134.375	x												<b>0.669</b>
ML_p nt12 08.log:BEST	-3240135.285	x												<b>0.669</b>
ML_p nt12 12.log:BEST	-3240135.412			x										<b>0.519</b>
ML_p nt12 17.log:BEST	-3240135.732	x												<b>0.669</b>
ML_p nt12 22.log:BEST	-3240136.696			x										<b>0.519</b>
ML_p nt12 00.log:BEST	-3240138.568	x												<b>0.669</b>
ML_p nt12 10.log:BEST	-3240139.039	x												<b>0.669</b>
ML_r nt12 06.log:BEST	-3240140.395	x												<b>0.669</b>
ML_p nt12 09.log:BEST	-3240143.378	x												<b>0.669</b>
ML_p nt12 03.log:BEST	-3240144.787	x												<b>0.669</b>
ML_p nt12 18.log:BEST	-3240144.936	x												<b>0.669</b>
ML_p nt12 01.log:BEST	-3240147.323	x												<b>0.669</b>
ML_p nt12 23.log:BEST	-3240148.585			x										<b>0.519</b>
ML_r nt12 05.log:BEST	-3240153.821				x									<b>7.97E-62</b>
ML_r nt12 13.log:BEST	-3240158.451							x						<b>0.0146</b>
ML_r nt12 14.log:BEST	-3240158.629				x									<b>7.97E-62</b>
ML_r nt12 22.log:BEST	-3240173.689									x				<b>8.77E-51</b>
ML_r nt12 21.log:BEST	-3240178.315										x			<b>1.91E-36</b>
ML_r nt12 09.log:BEST	-3240180.112											x		<b>2.63E-41</b>
ML_r nt12 20.log:BEST	-3240191.611					x								<b>1.78E-72</b>
ML_r nt12 18.log:BEST	-3240224.857						x							<b>0.0018</b>
ML_r nt12 23.log:BEST	-3240251.984									x				<b>0.0019</b>