

**Table S6:** Results of the UniqueTree analysis when examining the 50 ML trees of dataset sm-aa. 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 -2882589.491 (bold) but does not represent the most frequent topology.

tree ID	logL	10	10	6	6	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	p-AU
ML r aa 23.log:BEST	-2882589.491			x																									0.5969
ML r aa 03.log:BEST	-2882596.484																												0.5895
ML r aa 08.log:BEST	-2882597.101			x																									0.5965
ML r aa 06.log:BEST	-2882600.17					x																							0.571
ML r aa 14.log:BEST	-2882600.954												x																0.2052
ML r aa 17.log:BEST	-2882601.969					x																							0.571
ML r aa 15.log:BEST	-2882602.461																												0.4356
ML r aa 24.log:BEST	-2882606.488				x																								0.5969
ML p aa 14.log:BEST	-2882606.87				x																								0.5969
ML p aa 05.log:BEST	-2882608.07				x																								0.5965
ML r aa 21.log:BEST	-2882609.25					x																							0.571
ML p aa 12.log:BEST	-2882609.926					x																							0.5969
ML r aa 07.log:BEST	-2882611.937																												0.5884
ML p aa 16.log:BEST	-2882612.135				x																								0.5969
ML r aa 20.log:BEST	-2882612.488			x																									0.5929
ML p aa 06.log:BEST	-2882613.431					x																							0.5969
ML p aa 20.log:BEST	-2882613.965						x																						0.571
ML p aa 01.log:BEST	-2882614.319							x																					0.571
ML p aa 21.log:BEST	-2882614.719								x																				0.5969
ML p aa 22.log:BEST	-2882616.935				x																								0.5965
ML p aa 09.log:BEST	-2882617.681					x																							0.5965
ML p aa 18.log:BEST	-2882618.224					x																							0.5965
ML p aa 15.log:BEST	-2882618.532							x																					0.571
ML p aa 24.log:BEST	-2882619.798			x																									0.5929
ML p aa 00.log:BEST	-2882619.964				x																								0.5965
ML p aa 10.log:BEST	-2882620.241					x																							0.5965
ML p aa 04.log:BEST	-2882620.863				x																								0.5929
ML p aa 19.log:BEST	-2882621.028				x																								0.5929
ML p aa 17.log:BEST	-2882621.053				x																								0.5929
ML p aa 13.log:BEST	-2882621.062				x																								0.5929
ML p aa 07.log:BEST	-2882621.072				x																								0.5929
ML p aa 02.log:BEST	-2882621.074				x																								0.5929
ML p aa 03.log:BEST	-2882621.25				x																								0.5929
ML p aa 08.log:BEST	-2882621.334					x																							0.5965
ML p aa 11.log:BEST	-2882621.937				x																								0.5929
ML p aa 23.log:BEST	-2882624.314				x																								0.5965
ML r aa 13.log:BEST	-2882632.728							x																					0.0003
ML r aa 00.log:BEST	-2882633.105													x															0.0005
ML r aa 22.log:BEST	-2882635.199							x																					0.0003
ML r aa 10.log:BEST	-2882635.656																												0
ML r aa 09.log:BEST	-2882641.617																												0.0028
ML r aa 02.log:BEST	-2882645.974												x																0.0049
ML r aa 01.log:BEST	-2882648.976																												0.001
ML r aa 04.log:BEST	-2882654.076																												0.0021
ML r aa 11.log:BEST	-2882657.323							x																					0.022
ML r aa 18.log:BEST	-2882664.785																												0.0259
ML r aa 16.log:BEST	-2882666.523																												0.022
ML r aa 19.log:BEST	-2882669.591							x																					0.0264
ML r aa 12.log:BEST	-2882672.792																												0.0031
ML r aa 05.log:BEST	-2882680.822																												0.0022