

**Table S1. Statistics for ancestrally reconstructed proteins.**

<b>Ancestrally reconstructed protein</b>	<b>Average posterior probability</b>	<b># of sites that differ from the ML sequence</b>	<b>Average # sites that differ from ML sequence for reconstructions on alternate topologies</b>
ancA9	0.83	--	5
altancA9	0.81	10	--
ancA8	0.88	--	1
altancA8	0.86	17	--
ancCG	0.86	--	8
altancCG	0.84	8	--