



Figure S5: DGDG synthases from *Cyanidioschyzon* and *Cyanophora* are closely related to cyanobacteria .

Phylogenetic analysis of 55 glycosyltransferases reveals that the red alga *Cyanidioschyzon* and the glaucophyte *Cyanophora* contain a cyanobacterial-like DGDG synthase. This enzyme was ancestrally present in all eukaryotes with primary plastids, but was later replaced in most eukaryotes by an unrelated galactosyltransferase, analysed in Figure 8B. Maximum likelihood tree (PhyML) displays aLRT branch supports. Thick lines represent branch supports ≥ 0.99 .