



**Supplementary fig. S2.** Summary of the ancestral state reconstruction analysis based on Bayesian Binary MCMC (BBM) model in *Microcoleus* spp. The ancestral areas with the highest likelihood are represented within node pies. Color code corresponds to the following regions: (A) Europe, (B) North America, (C) Africa, (D) Asia, (E) Arctic, (F) Antarctic, (G) Australia. The black asterisk represents other ancestral areas. Additional colors within the color code correspond to the multiple region areas (AD).