

Figure S1. Mass spectra of 22,23-methylene-4 α ,23,24-trimethylcholest-5-en-3 β -ol (4 α -methylgorgosterol) and 22,23-methylene-4 α ,23,24-trimethylcholestan-3 β -ol (4 α -methylgorgostanol) observed in the studied microbial mat (Atwood et al., 2014; Houle et al., In Press).

Pyrolysis-GC-MS

extract residues

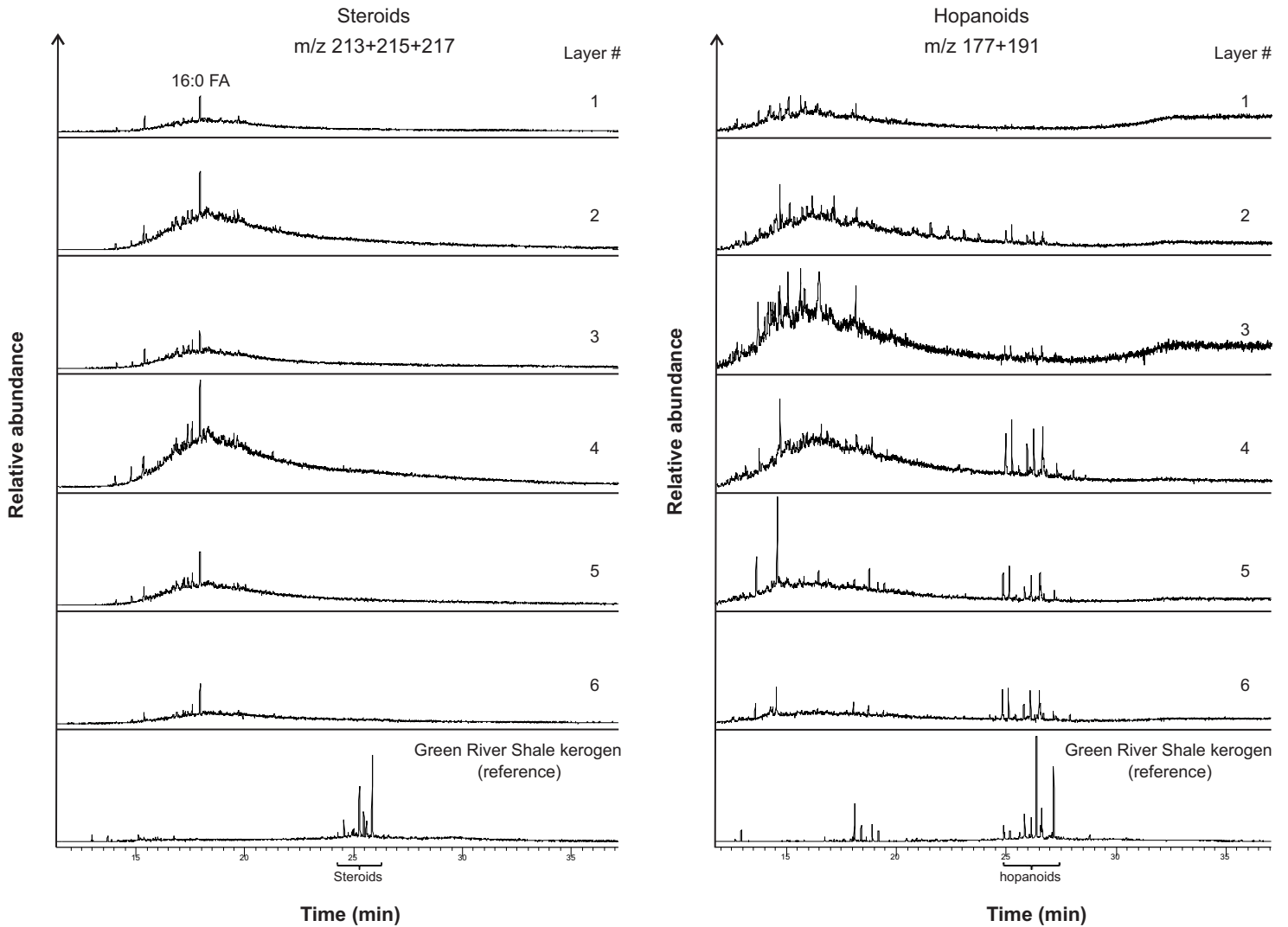
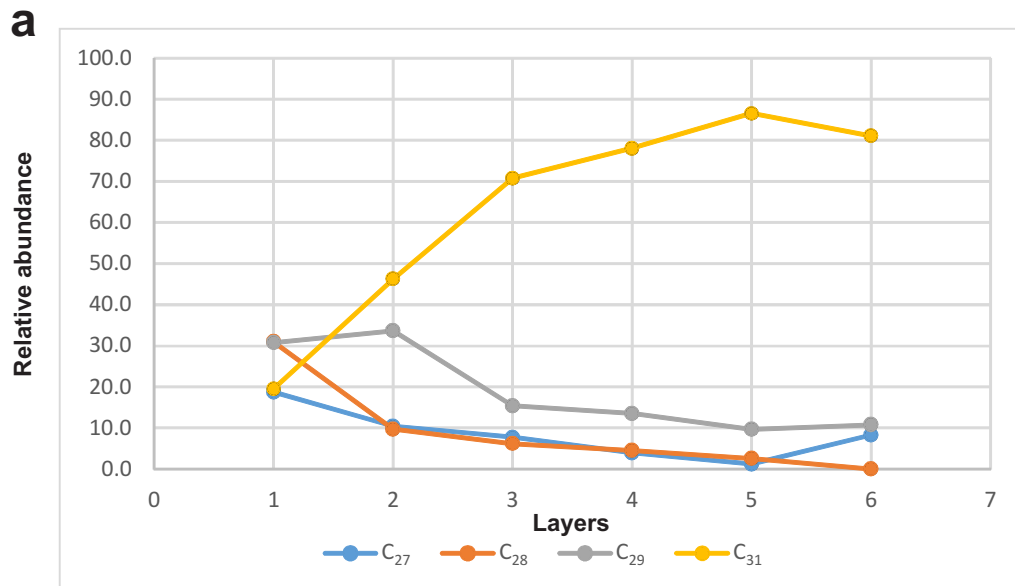


Figure S2. Pyrolysis-GC-MS ion chromatograms showing the distributions of steroids (m/z 213+215+217) vs. hopanoids (m/z 177+191) in the insoluble organic matter of the microbial mat layers (extraction residues after decalcification; Eocene Green River Shale for reference).

Freely extractable lipids



Carbonate-bound lipids

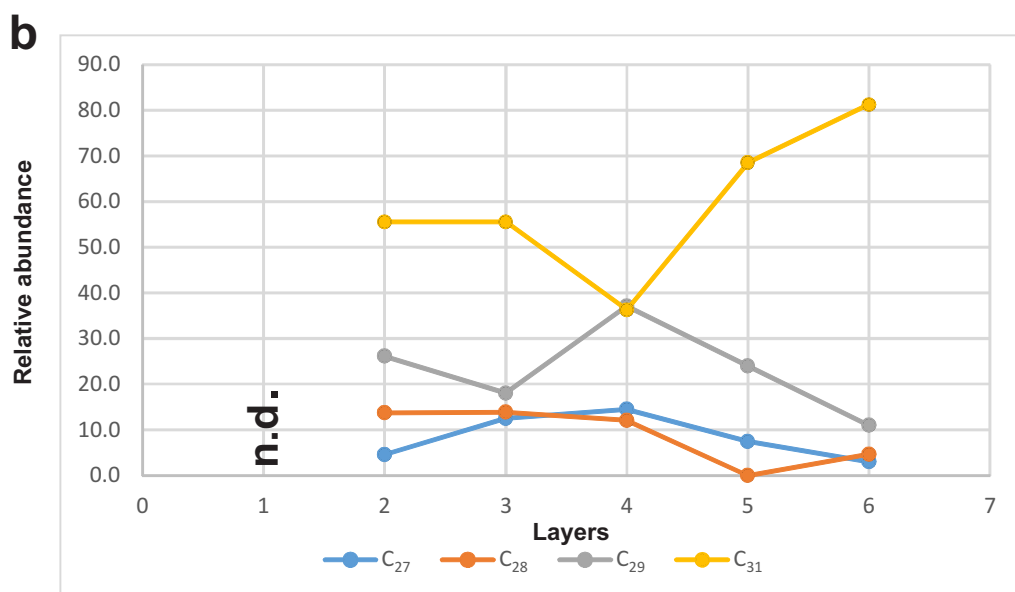


Figure S3. Distributions of summed C₂₇- vs. C₂₈- vs. C₂₉- vs. C₃₁-sterols in the (a) freely extractable lipids, and (b) carbonate-bound lipids of the microbial mat layers (in % of the total).