

# Supplementary Material: Isotopic Signatures of Microbial Mg-Carbonates Deposited in an Ephemeral Hyperalkaline Lake (Central Spain): Paleoenvironmental Implications

María E. Sanz-Montero \*, Pablo del Buey, Óscar Cabestrero and Mónica Sánchez-Román

**Table S1.** List of studied samples including the name (Sample ID = Sample identification) and the type of sample. EPS = Extracellular polymeric substances.

Sample ID	Sample Type
Cw-1 to Cw-3	Surface water (* filtered)
Cw-4	Porewater
Ccd-1 to Ccd-9, 11 and 12	Wet sediment (cd= calcite + dolomite; d= dolomite)
Cs-1 to Csd-3	Core sediment (s= calcite + dolomite; sd= dolomite)
Cm-1 to Cm-5, Ccd-10 and Cd-10	Dry sediment (m= magnesite bearing assemblage; cd = calcite + dolomite; d = dolomite)
Ceps-1 to Ceps-2*	non-purified EPS (* purified)

**Table S2.** Variation of the physicochemical values in the surface waters of the Lake Caballo Alba (taken from Del Buey and Sanz-Montero, 2022 [10]): temperature (T), pH, dissolved oxygen (DO), salinity (S) and oxidation-reduction potential (ORP).

Date	Water Parameters				
	T (°C)	pH	DO (%)	S (g·L <sup>-1</sup> )	ORP (mV)
Mar-17	24	9	79.3	16	31.6
Apr-18	18	9.7	46.3	1.2	46.3
dic-18	7.5	10.4	35.7	3.5	−149.8
Mar-19	17.6	9.6	90.3	6.5	−368.6
Apr-21	16.2	9.8	122.8	1.9	−37

**Table S3.** Type of analysis carried out on each sample. XRD: X-Ray diffraction, SEM: Scanning Electron Microscopy, DNA: Genomic Analyses, SI: Stable Isotopes, HC: Hydrogeochemistry.

Sample ID	XRD	SEM	DNA	SI	HC
Ccd-1	x	–	–	x	–
Ccd-2	x	–	–	x	–
Ccd-3	x	–	–	x	–
Ccd-4	x	x	–	x	–
Cd-4	x	–	–	x	–
Ccd-5	x	x	–	x	–
Cd-5	x	–	–	x	–
Cs-1	x	–	–	x	–
Csd-1	x	–	–	x	–
Cs-2	x	–	–	x	–
Cs-3	x	–	–	x	–
Csd-3	x	–	–	x	–

Ccd-6	x	–	–	x	–
Ccd-7	x	–	–	x	–
Ccd-8	x	x	–	x	–
Ccd-9	x	–	–	x	–
Ccd-10	x	x	–	x	–
Cd-10	x	–	–	x	–
Ccd-11	x	X	x	x	–
Ccd-12	x	x	x	x	–
Cm-1	x	x	–	x	–
Cm-2	x	–	–	x	–
Cm-3	x	–	–	x	–
Cm-4	x	x	–	x	–
Cm-5	x	–	–	x	–
Ceps-1	x	–	–	x	–
Ceps-1*	x	–	–	x	–
Ceps-2	x	–	–	x	–
Ceps-2*	x	–	–	x	–
Cw-1	–	–	–	x	x
Cw-2	–	–	–	x	x
Cw-2*	–	–	–	x	x
Cw-3	–	–	–	x	x
Cw-4	–	–	–	x	x