

Table S1. The geographical, physical, and chemical characteristics of three hypersaline lakes in Qaidam Basin. *ND* not determined, *n.d.* not detectable

Sample ID	Longitude	Latitude	TN mg/L	NH ₃ -N mg/L	PH	DO mg/L	Sampling depth	Temperature °C	Altitude m	TDS g/L	Na ⁺ g/L	K ⁺ g/L	Mg ²⁺ g/L	Ca ²⁺ g/L	Cl ⁻ g/L	SO ₄ ²⁻ g/L
Gahai1	97° 31' 32.45"	37° 08' 41.78"	2.05	0.46	8.19	2.8	0.3	19.3	2853	96.9	24.5	0.39	1.06	0.27	45.65	11.63
Gahai7	97° 31' 52.61"	37° 08' 36.19"	3.11	0.4	8.19	2.2	0.3	19.3	2851	93.6	25.02	0.41	1.23	0.27	45.02	11.52
Xiaochadan12	95° 30' 19.03"	37° 28' 31.77"	3.27	1.08	8.31	4.9	0.3	10.8	3170	96.7	31.43	0.56	1.3	0.39	44.68	18.19
Gasikule1	90° 49' 01.89"	38° 09' 43.03"	8.9	1.18	6.73	1.4	0.3	16	2858	348.3	74.65	2.46	2.96	0.16	134.28	10.75
Gasikule3	90° 46' 59.72"	38° 07' 58.62"	6.6	1.36	7.29	1.5	0.3	15.5	2858	466	75.5	2.32	1.97	0.18	156.1	14.48