SUPPLEMENTARY MATERIAL

Table S1: Cyanobacterial strains isolated from cryptoendolithic, chasmoendolithic and hypoendolithic microhabitats of gypcrete from MTQ.

Microhabitat	Strain code	Taxonomical Assignment
Cryptoendolithic	UAM807	*Gloeocapsopsis* sp.
	UAM808	*Chroococcidiopsis* sp.
	UAM801	*Chroococcidiopsis* sp.
Chasmoendolithic	UAM805	*Chroococcidiopsis* sp.
	UAM806	*Gloeocapsopsis* sp.
	UAM800	*Chroococcidiopsis* sp.
Hypoendolithic	UAM802	*Chroococcidiopsis* sp.
	UAM803	*Gloeocapsa* sp.
	UAM804	*Gloeocapsa* sp.
	UAM809	*Chroococcidiopsis* sp.
	UAM810	*Chroococcidiopsis* sp.
	UAM811	*Chroococcidiopsis* sp.

Table S2: Taxonomical assignment of cyanobacterial OTUs by BLASTn to sequences belonging to uncultured and cultured material.

CYANOBACTERIAL OTUs								
	Uncultured				Cultured			
	BLASTn	Accession Number	Identity (%)	Environment	BLASTn	Accession Number	Identity (%)	Environment
OTU18	Uncultured cyanobacterium clone 332-12	KT453633	99	Sublacustrine thermal vents Yellowstone Lake	*Chroococcidiopsis* sp. CC4	DQ914866	99	China quartz hypoliths
OTU11	Uncultured cyanobacterium clone FWS-B15	KC437357	100	Hot Spring	*Calothrix* sp. NIES-3974	AP018254	100	
OTU854	Uncultured *Gloeocapsa* sp. clone HL4SH30	LN880050	97	shoots of Haloxylon in high salinity	*Gloeocapsa* sp. PKUAC-GDTS1-13	MG822744	97	
OTU9	Uncultured cyanobacterium clone Alchichica_AQ2_1_1C_10	JN825312	99	microbialites from Alchichica alkaline lake	*Gloeocapsa* sp. Ryu5-15d	LC325265	99	blackened part of a surface of a building
OTU497	Uncultured *Chroococcidiopsis* sp. clone ATA4-8-EC03	KC311895	95	soil Atacama Desert	*Chroococcidiopsis* sp. A789-2	JF810071	94	Antarctica: University Valle
OTU420	Uncultured cyanobacterium clone IGW2-36	KP238411	98	volcanic rock ignimbrite, Atacama Desert, Lomas de Tilocalar	*Chroococcidiopsis* sp. RQEC	KY303728	97	Hypolith quartz Taklimankan desert, Xingjiang
OTU1	Uncultured *Chroococcidiopsis* sp. clone ATA4-8-EC03	KC311895	98	soil Atacama Desert	*Chroococcidiopsis* sp. CC1	DQ914863	96	quartz hypoliths China
OTU4	Uncultured cyanobacterium clone IGD2-37	KP238398	98	volcanic rock ignimbrite, Atacama Desert, Lomas de Tilocalar	*Chroococcidiopsis* sp. A789-2	JF810071	99	Antarctica: University Valle
OTU1772	Uncultured cyanobacterium clone IGW2-36	KP238411	96	volcanic rock ignimbrite, Atacama Desert, Lomas de Tilocalar	*Chroococcidiopsis* sp. RQEC	KY303728	96	Hypolith quartz Taklimankan desert, Xingjiang
OTU98	Uncultured cyanobacterium clone AY6_21	FJ891051	99	quartz, Yungay, Atacama Desert	*Chroococcidiopsis* sp. RQEC	KY303729	95	Hypolith quartz Taklimankan desert, Xingjiang
OTU8	Uncultured cyanobacterium clone AY6_17	FJ891047	99	quartz, Yungay, Atacama Desert	*Chroococcidiopsis* sp. CC1	DQ914863	97	quartz hypoliths China
OTU112	Uncultured bacterium clone BJ201305-46	KX507829	100	rain water	*Chroococcidiopsis* sp. CC1	DQ914863	97	quartz hypoliths China

OTU2	Uncultured bacterium clone LSS_Cyano_OTU5	KP728185	95	sinkhole lake	*Aphanocapsa muscicola* 5N-04	FR798920	94	fountain made of Sierra Elvira Stone, gray semi-dry patina on a water jet Spain:Granada, Generalife, Patio de la Sultana"
OTU5	Uncultured cyanobacterium clone 3GA1-12_K89	JX127189	99	stone of castle wall Germany	*Synechococcus* sp. CIBNOR 42	AY274622	99	cyanobacterial bloom in the Urias estuary (Mazatlan, Sinaloa, Mexico) during a fish mortality event in spring 1999
OTU7	Uncultured bacterium clone Atacama-colB11	EF071511	100	Atacama Desert	*Chroococcidiopsis* sp. A789-2	JF810071	94	Antarctica: University Valley

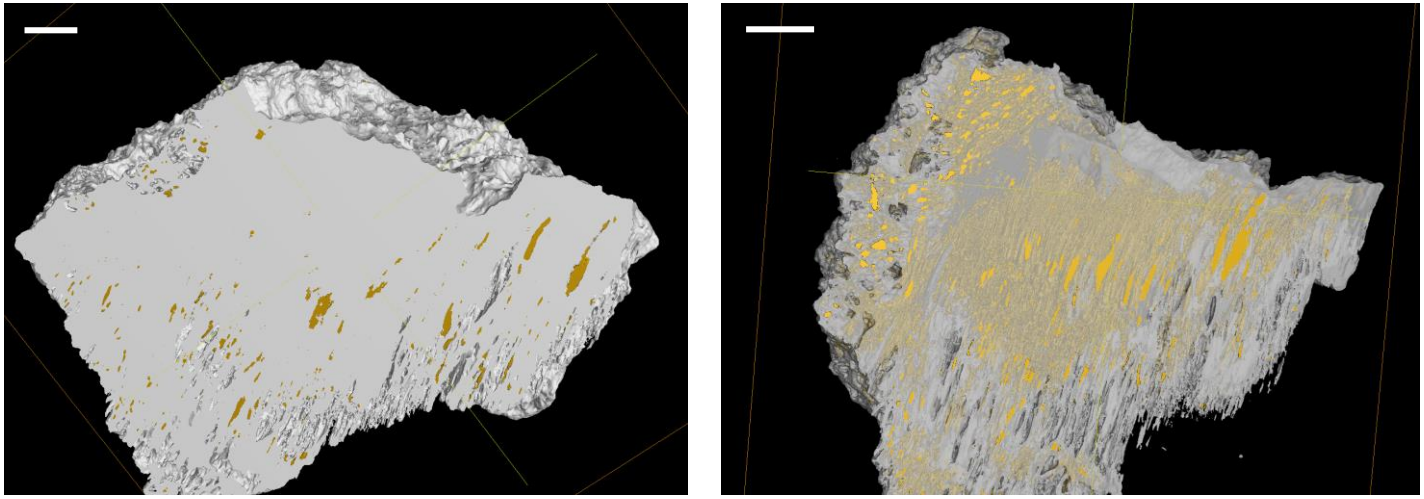

Figure S2. CT-Scan images of a colonized piece of gypcrete. 2D spatial distribution of pores (orange colour) and external view of the rock (grey colour) on lateral (left) and front (right) views of gypcrete. Porous micromorphology is capillary-shaped in vertical position due to gravity movement direction of water. Arrows in top view images point to the deepest cracks. Scale bar = 1cm.

Video S1: CT-Scan film of a colonized piece of gypcrete. 3D spatial distribution of pores (orange colour) and external view of the rock (grey colour) on lateral, front and top views of gypcrete. Porous micromorphology is capillary-shaped in vertical position due to gravity movement direction of water.