Table S1. Details of the PCR primers used for community profiling of moonmilk samples **(a)** and - PCR conditions used for 16S rRNA amplification from moonmilk samples (**b)**.

a)

Target organism	Primer name	Adapter sequence *	Primer sequence	Variable region	Size of amplicon	Reference
Bacteria	515F (BcF)	TCGTCGGCAGCGTCAGATGTGTATAAGAG	5′-GCCAGCAGCCGCGGTAA- 3′	V4 - V6	~550 nt	[29]
	1061R (BcR)	GTCTCGTGGGCTCGGAGATGTGTATAAGA	5′-CRRCACGAGCTGACGAC- 3′			
Actinobacteria	Com2xf (ActF)	TCGTCGGCAGCGTCAGATGTGTATAAGAG	5′-AAACTCAAAGGAATTGACGG- 3′	V6 - V7	~270 nt	[30]
	Ac1186r (ActR)	GTCTCGTGGGCTCGGAGATGTGTATAAGA	5′-CTTCCTCCGAGTTGACCC- 3′			

*overhanging adapters were added at 5′-end before specific primer sequence

b)

Target organism	Predenaturation	Denaturation	Anealing	Extension	Final extension	Nr of cycles
Bacteria	98°C - 30s	98°C - 50s	54°C - 30s	72°C - 30s	72°C - 2min	22
Actinobacteria			55°C - 30s			26

Table S2. Relative abundance (%) of bacterial phyla identified in the three moonmilk deposits in "Grotte des Collemboles". Low-abundant taxa with relative abundance <1% are marked in red.

Bacterial phyla	COL1	COL3	COL4	Mean	Standard deviation
Proteobacteria	52.0	34.1	30.3	38.8	11.6
Actinobacteria	9.3	23.4	10.4	14.4	7.9
Acidobacteria	9.1	8.8	13.5	10.5	2.6
Chloroflexi	6.2	10.0	11.3	9.2	2.7
Nitrospirae	6.8	4.6	7.2	6.2	1.4
Gemmatimonadetes	3.4	7.1	7.6	6.1	2.3
Planctomycetes	3.4	4.1	5.5	4.3	1.1
Latescibacteria	1.3	0.9	1.6	1.3	0.4
Bacteroidetes	0.3	0.7	1.3	0.8	0.5
Verrucomicrobia	0.5	0.4	0.9	0.6	0.3
Armatimonadetes	0.4	0.2	0.8	0.5	0.3
Tectomicrobia	0.4	0.4	0.4	0.4	0.0
RBG-1_Zixibacteria	0.4	0.2	0.5	0.4	0.2
Parcubacteria	0.3	0.2	0.5	0.3	0.2
Ignavibacteriae	0.4	0.3	0.3	0.3	0.0
Chlorobi	0.1	0.2	0.4	0.3	0.1
Firmicutes	0.4	0.2	0.1	0.2	0.2
Elusimicrobia	0.2	0.2	0.3	0.2	0.1
Omnitrophica	0.1	0.1	0.3	0.2	0.1
Saccharibacteria	0.2	0.1	0.1	0.2	0.1
Peregrinibacteria	0.1	0.1	0.3	0.1	0.1
Chlamydiae	0.2	0.1	0.2	0.1	0.1
TM6_Dependentiae	0.2	0.04	0.2	0.1	0.1
GAL15	0.1	0.1	0.2	0.1	0.1
SBR1093	0.05	0.02	0.1	0.1	0.1
Microgenomates	0.1	0.1	0.1	0.1	0.01
Hydrogenedentes	0.02	0.04	0.1	0.04	0.02
Cyanobacteria	0.03	0.01	0.1	0.04	0.03
PAUC34f	0.03	0.01	0.1	0.04	0.02
WS2	0.03	0.02	0.03	0.03	0.01
BRC1	0.01	0.01	0.1	0.03	0.03
Fibrobacteres	0.01	0	0.02	0.01	0.01
Lentisphaerae	0.02	0	0.01	0.01	0.01

Deferribacteres	0.00	0	0.02	0.01	0.01
BJ-169	0.02	0	0	0.01	0.01
Spirochaetae	0	0	0.01	0.005	0.01
FCPU426	0	0	0.01	0.002	0.004
Gracilibacteria	0	0	0.005	0.002	0.003
SR1_Absconditabacteria	0	0	0.005	0.002	0.003
unclassified	3.9	3.4	5.0	4.1	0.9

Table S3. Relative abundance (%) of the phylum Actinobacteria at different taxonomic levels identified in the three moonmilk deposits in the "Grotte des Collemboles".

		COL1	COL3	COL4	Mean
Class	Thermoleophilia	0.0056	0.008	0.023	0.01
Order	Gaiellales	0.0056	0.008	0.023	0.01
Family	Gaiellaceae	0.0021	0.005	0.015	0.007
	uncultured	0.0035	0.003	0.008	0.005
Class	Acidimicrobiia	26.72	9.77	55.32	30.6
Order	Acidimicrobiales	26.72	9.77	55.32	30.6
Family	uncultured	24.77	8.56	51.6	28.3
	Acidimicrobiaceae	1.16	0.67	2.22	1.4
	Iamiaceae	0.79	0.54	1.5	0.9
Class	Actinobacteria	72.75	90	42.98	68.6
Order	Pseudonocardiales	14.79	75.3	28.55	39.5
	Corynebacteriales	41	10.09	4.23	18.4
	Streptomycetales	5.37	0.76	3.01	3.0
	Micrococcales	3.76	2.14	2.18	2.7
	Frankiales	1.39	0.46	1.97	1.3
	Propionibacteriales	2.03	0.25	0.48	0.9
	Micromonosporales	1.44	0.52	0.58	0.8
	Streptosporangiales	1.98	0.24	0.1	0.8
	unclasiffied	0.38	0.04	0.96	0.5
	Geodermatophilales	0.09	0.14	0.78	0.3
	Nakamurellales	0.29	0.07	0.07	0.1
	Actinomycetales	0.17	0.001	0.004	0.1
	Glycomycetales	0.02	0	0.04	0.02
	Kineosporiales	0.03	0	0.01	0.01
	Acidothermales	0	0	0.02	0.007

	Catenulisporales	0	0	0.001	0.0003
Family	Pseudonocardiaceae	14.79	75.3	28.55	39.5
	Nocardiaceae	39.5	9.94	3.84	17.8
	Streptomycetaceae	5.37	0.76	3.01	3.0
	Micrococcaceae	3.2	1.92	1.84	2.3
	Sporichthyaceae	0.57	0.33	1.76	0.9
	Micromonosporaceae	1.44	0.52	0.58	0.8
	Streptosporangiaceae	1.98	0.24	0.1	0.8
	Propionibacteriaceae	1.65	0.2	0.25	0.7
	Mycobacteriaceae	1.11	0.08	0.35	0.5
	unclassified	0.31	0.04	0.95	0.4
	Microbacteriaceae	0.55	0.19	0.32	0.4
	Geodermatophilaceae	0.09	0.14	0.78	0.3
	Frankiaceae	0.75	0.06	0.1	0.3
	Nocardioidaceae	0.39	0.05	0.23	0.2
	Nakamurellaceae	0.29	0.07	0.07	0.1
	Corynebacteriaceae	0.3	0.05	0.01	0.1
	uncultured	0.16	0.02	0.06	0.08
	Cryptosporangiaceae	0.08	0.06	0.07	0.07
	Actinomycetaceae	0.17	0	0	0.06
	Glycomycetaceae	0.02	0	0.04	0.02
	Kineosporiaceae	0.03	0	0.01	0.01
	Acidothermaceae	0	0	0.02	0.007
	Promicromonosporaceae	0	0.01	0.01	0.007
	Dermacoccaceae	0	0	0.01	0.003
	Gordoniaceae	0	0.01	0	0.003
	Intrasporangiaceae	0	0.01	0	0.003
	Actinospicaceae	0	0	0.001	0.0003