

Supplementary Table S1. Sampling campaign in *Cueva de Ardales*, spring 2011. CFU/m³, accession numbers, identifications and abundances.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala del Calvario	0			
Sala de las Estrellas	90±70	MZ338588	<i>Arthrobacter ruber</i> (JX949648; 99.5%)	5.6
		MZ338589	<i>Micrococcus luteus</i> (CP001628; 98.7%)	11.0
		MZ338590	<i>Micrococcus terreus</i> (jgi.1058018; 99.3%)	11.0
		LN650666	<i>Paracoccus cavernae</i> sp. nov. (LN650666; 100%)	5.6
		MZ338591	<i>Paracoccus marcusii</i> (Y12703; 99.9%)	5.6
		MZ338592	<i>Prolinoborus fasciculus</i> (JN175353; 99.9%)	5.6
		MZ338593	<i>Pseudarthrobacter phenanthrenivorans</i> (CP002379; 99.6%)	50.0
End of stair	200±30	MZ338594	<i>Streptomyces narbonensis</i> (AB184157; 99.4%)	5.6
		MZ338595	<i>Arthrobacter ruber</i> (JX949648; 98.8%)	2.6
		MZ338596	<i>Bacillus mycoides</i> (ACMU01000002; 99.3%)	2.6
		MZ338597	<i>Kocuria palustris</i> (Y16263; 100%)	5.3
		MZ338598	<i>Micrococcus luteus</i> (CP001628; 99.4%)	23.7
		MZ338599	<i>Paenibacillus glacialis</i> (EU815300; 98.7%)	2.6
		MZ338600	<i>Pseudarthrobacter oxydans</i> (X83408; 99.2%)	31.6
		MZ338601	<i>Pseudomonas zhaodongensis</i> (RFFM01000015; 98.7%)	2.6
		MZ338602	<i>Psychrobacillus psychrodurans</i> (jgi.1085849; 99.7%)	5.3
		MZ338603	<i>Rathayibacter festucae</i> (CP028137; 99.6%)	5.3
		MZ338604	<i>Staphylococcus cohnii</i> subsp. <i>cohnii</i> (D83361; 99.9%)	2.6
MZ338605	<i>Staphylococcus hominis</i> subsp. <i>novobiosepticus</i> (AB233326; 99.9%)	13.2		
MZ338606	<i>Streptomyces pratensis</i> (JQ806215; 99.7%)	2.6		
Outdoor air	320±110	MZ338607	<i>Arthrobacter bussei</i> (MN080869; 99.9%)	5.0
		MZ338608	<i>Arthrobacter humicola</i> (AB279890; 100%)	20.0
		MZ338609	<i>Bacillus mycoides</i> (ACMU01000002; 99.3%)	1.7
		MZ338610	<i>Clavibacter michiganensis</i> subsp. <i>chilensis</i> (KF663872)/ <i>C. michiganensis</i> subsp. <i>californiensis</i> (KF663871); (99.8%)	13.3
		MZ338611	<i>Curtobacterium flaccumfaciens</i> (AJ31209; 99.9%)	3.3
		MZ338612	<i>Frigoribacterium faeni</i> (BJUV01000064; 99.4%)	1.7
		MZ338613	<i>Paenarthrobacter aurescens</i> (BJMD01000050; 99.4%)	1.7
		MZ338614	<i>Paenibacillus stellifer</i> (CP009286; 97.7%)	1.7
MZ338615	<i>Peribacillus simplex</i> (BCVO01000086; 99.5%)	8.3		

Supplementary Table S1. Continuation

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Outdoor air	320±110	MZ338616	<i>Pseudarthrobacter oxydans</i> (X83408; 98.7%)	23.3
		MZ338617	<i>Pseudomonas kunmingensis</i> (JQ246444; 99.6%)	1.7
		MZ338618	<i>Rathayibacter festucae</i> (CP028137; 99.0%)	5.0
		MZ338619	<i>Solibacillus kalamii</i> (KT763359; 99.2%)	1.7
		MZ338620	<i>Staphylococcus cohnii</i> subsp. <i>urealyticus</i> (AB009936; 99.9%)	6.7
		MZ338621	<i>Terribacillus saccharophilus</i> (AB243845; 100%)	5.0

Supplementary Table S2. Sampling campaign in *Cueva de Ardales*, summer 2011. CFU/m³, accession numbers, identifications and abundances.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala del Calvario	20±14	MZ338622	<i>Micrococcus endophyticus</i> (EU005372; 99.5%)	25.0
		MZ338623	<i>Peribacillus simplex</i> (BCVO01000086; 99.5%)	50.0
		MZ338624	<i>Terrabacter terrigena</i> (FJ423552; 97.7%)	25.0
Sala de las Estrellas	40±10	MZ338625	<i>Bacillus altitudinis</i> (ASJC01000029; 100%)	62.5
		MZ338626	<i>Ensifer numidicus</i> (AY500254; 99.7%)	12.5
		MZ338627	<i>Noviherbaspirillum canariense</i> (HQ830496; 98.7%)	12.5
		MZ338628	<i>Peribacillus simplex</i> (BCVO01000086; 100%)	12.5
End of stair	40±40	MZ338629	<i>Arthrobacter methylotrophus</i> (AF235090; 98.4%)	42.8
		MZ338630	<i>Metabacillus litoralis</i> (AY608605; 98.8%)	14.3
		MZ338631	<i>Prolinoborus fasciculus</i> (JN175353; 99.1%)	14.3
		MZ338632	<i>Variovorax boronicumulans</i> (AB300597; 99.9%)	28.6
Outdoor air	90±30	MZ338633	<i>Arthrobacter gyeryongensis</i> (JX141781; 99.1%)	16.6
		MZ338634	<i>Arthrobacter ruber</i> (JX949648; 99.7%)	5.6
		MZ338635	<i>Frigoribacterium faeni</i> (BJUV01000064; 98.6%)	5.6
		MZ338636	<i>Mesobacillus subterraneus</i> (RSFW01000004; 98.8%)	5.6
		MZ338637	<i>Micrococcus luteus</i> (CP001628; 99.8%)	5.6
		MZ338638	<i>Nocardia salmonicida</i> subsp. <i>cummidelens</i> (AF277202; 99.1%)	16.6
		MZ338639	<i>Peribacillus simplex</i> (BCVO01000086; 99.7%)	16.6
		MZ338640	<i>Pseudarthrobacter siccitolerans</i> (CAQI01000001; 99.0%)	22.2
MZ338641	<i>Solibacillus isronensis</i> (AMCK01000046; 99.5%)	5.6		

Supplementary Table S3. Sampling campaign in *Cueva de Ardales*, autumn 2011. CFU/m³, accession numbers, identifications and abundances.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala del Calvario	180±0	MZ338642	<i>Arthrobacter methylotrophus</i> (AF235090; 98.7%)	3.0
		MZ338643	<i>Brevibacillus choshinensis</i> (LJJB01000010; 99.8%)	3.0
		MZ338644	<i>Macrococcus equiperficus</i> (Y15712; 99.6%)	3.0
		MZ338645	<i>Micrococcus luteus</i> (CP001628; 99.8%)	84.8
		MZ338646	<i>Streptomyces gardneri</i> (AB249908; 100%)	6.2
Sala de las Estrellas	70±10	MZ338647	<i>Aminobacter aminovorans</i> (AJ011759; 100%)	7.7
		MZ338648	<i>Brachybacterium paraconglomeratum</i> (AJ415377; 99.6%)	7.7
		MZ338649	<i>Micrococcus luteus</i> (CP001628; 99.8%)	53.8
		MZ338650	<i>Phyllobacterium ifriqiyense</i> (AY785325; 99.8%)	30.8
End of stair	140±40	MZ338651	<i>Bacillus proteolyticus</i> (MACH01000033; 99.9%)	11.1
		MZ338652	<i>Enterococcus faecium</i> (AJ301830; 99.2%)	7.4
		MZ338653	<i>Micrococcus luteus</i> (CP001628; 99.8%)	59.3
		MZ338654	<i>Pseudarthrobacter psychrotolerans</i> (MN559964; 99.9%)	11.1
		MZ338655	<i>Pseudomonas zhaodongensis</i> (RFFM01000015; 98.8%)	11.1
Outdoor air	180±100	MZ338656	<i>Agromyces cerinus</i> subsp. <i>cerinus</i> (jgi.1107671; 99.0%)	2.9
		MZ338657	<i>Bhargavaea cecembensis</i> (AM286423; 99.7%)	5.9
		MZ338658	<i>Brachybacterium ginsengisoli</i> (CP023564; 98.3%)	2.9
		MZ338659	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.6%)	2.9
		MZ338660	<i>Micrococcus luteus</i> (CP001628; 99.8%)	64.8
		MZ338661	<i>Pseudarthrobacter sulfonivorans</i> (AF235091; 99.4%)	5.9
		MZ338662	<i>Pseudomonas congelans</i> (FNJH01000022; 99.9%)	2.9
		MZ338663	<i>Pseudomonas lutea</i> (JRMB01000004; 99.7%)	2.9
MZ338664	<i>Streptomyces exfoliatus</i> (AB184324; 99.9%)	8.9		

Supplementary Table S4. Sampling campaign in *Cueva de Ardales*, winter 2012. CFU/m³, accession numbers, identifications and abundances.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala del Calvario	140±85	MZ338665	<i>Acinetobacter lwoffii</i> (AIEL01000120; 100%)	7.1
		MZ338666	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.2%)	10.7
		MZ338667	<i>Micrococcus luteus</i> (CP001628; 99.7%)	57.1
		MZ338668	<i>Novosphingobium panipatense</i> (jgi.1118302; 99.6%)	10.7
		MZ338669	<i>Paracoccus marcusii</i> (Y12703; 99.8%)	14.4
Sala de las Estrellas	40±10	MZ338670	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.2%)	14.3
		MZ338671	<i>Micrococcus luteus</i> (CP001628; 99.7%)	57.1
		MZ338672	<i>Paracoccus marcusii</i> (Y12703; 100%)	14.3
		MZ338673	<i>Sporosarcina psychrophila</i> (D16277; 98.6%)	14.3
End of stair	20±10	MZ338674	<i>Arthrobacter citreus</i> (X80737; 100%)	66.7
		MZ338675	<i>Lentzea albidocapillata</i> subsp. <i>albidocapillata</i> (JOEA01000052; 99.7%)	33.3
Outdoor air	110±0	MZ338676	<i>Arthrobacter citreus</i> (X80737; 100%)	13.6
		MZ338677	<i>Arthrobacter globiformis</i> (BAEG01000072; 99.7%)	27.3
		MZ338678	<i>Kocuria rosea</i> (X87756; 99.7%)	13.6
		MZ338679	<i>Massilia aurea</i> (AM231588; 99.6%)	4.5
		MZ338680	<i>Novosphingobium panipatense</i> (jgi.1118302; 99.4%)	13.6
		MZ338681	<i>Paenibacillus purispatii</i> (EU888513; 98.7%)	4.5
		MZ338682	<i>Pseudomonas koreensis</i> (AF468452; 100%)	9.2
		MZ338683	<i>Rathayibacter tritici</i> (X77438; 99.5%)	9.2
MZ338684	<i>Streptomyces spinoverrucosus</i> (AB184578; 99.6%)	4.5		

Supplementary Table S5. Sampling campaign in *Cueva del Tesoro*, spring 2011. CFU/m³, accession numbers, identifications and abundances.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala de La Virgen	590±28	MZ338685	<i>Falsirhodobacter halotolerans</i> (HE662814; 99.1%)	1.9
		MZ338686	<i>Microbacterium esteraromaticum</i> (Y17231; 98.4%)	1.9
		MZ338687	<i>Micrococcus luteus</i> (CP001628; 99.6%)	69.2
		MZ338688	<i>Pantoea eucalypti</i> (EF6880090; 99.7%)	2.9
		MZ338689	<i>Prolinoborus fasciculus</i> (JN175353; 99.9%)	12.5
		MZ338690	<i>Rhodococcus corynebacterioides</i> (AF430066; 98.6%)	1.9
		MZ338691	<i>Schumannella luteola</i> (AB362159; 98.1%)	1.9
		MZ338693	<i>Staphylococcus borealis</i> (MT586030; 99.5%)	3.8
		MZ338692	<i>Staphylococcus equorum</i> subsp. <i>equorum</i> (AB009939; 99.1%)	1.9
MZ338694	<i>Staphylococcus saprophyticus</i> subsp. <i>bovis</i> (AB233327; 99.9%)	1.9		
Sala de Lagos	230±10	MZ338695	<i>Bacillus idriensis</i> (AY904033; 99.3%)	4.7
		MZ338696	<i>Brachybacterium ginsengisoli</i> (CP023564; 99.5%)	4.7
		MZ338697	<i>Frigoribacterium faeni</i> (BJUV01000064; 99.4%)	7.0
		MZ338698	<i>Glutamicibacter halophytocola</i> (JX993762; 97.9%)	7.0
		MZ338699	<i>Microbacterium phyllosphaerae</i> (AJ277840; 99.5%)	16.3
		MZ338700	<i>Micrococcus endophyticus</i> (EU005372; 99.4%)	18.6
		MZ338701	<i>Paracoccus marcusii</i> (Y12703; 100%)	4.7
		MZ338702	<i>Prolinoborus fasciculus</i> (JN175353; 99.9%)	9.3
		MZ338703	<i>Pseudomonas cremoricolorata</i> (AB060137; 98.7%)	2.3
		MZ338704	<i>Psychrobacillus glaciei</i> (MN416951; 99.1%)	4.7
		MZ338705	<i>Rhodococcus corynebacterioides</i> (AF430066; 99.6%)	2.3
		MZ338706	<i>Staphylococcus epidermidis</i> (UHDF01000003; 99.7%)	4.7
		MZ338707	<i>Staphylococcus equorum</i> subsp. <i>equorum</i> (AB009939; 99.8%)	9.3
		MZ338708	<i>Williamsia deligens</i> (AJ920290; 98.8%)	4.7
Galería hacia Lagos	460±50	MZ338709	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.1%)	1.2
		MZ338710	<i>Glutamicibacter arilaitensis</i> (FQ311875; 99.7%)	15.7
		MZ338711	<i>Micrococcus luteus</i> (CP001628; 99.5%)	49.4
		MZ338712	<i>Prolinoborus fasciculus</i> (JN175353; 100%)	18.1
		MZ338713	<i>Psychrobacillus psychrodurans</i> (JGI.1085849; 99.7%)	1.2
		MZ338714	<i>Rhodococcus qingshengii</i> (LRRJ01000016; 99.6%)	8.4
		MZ338715	<i>Staphylococcus borealis</i> (MT586030; 99.5%)	1.2
		MZ338716	<i>Staphylococcus equorum</i> subsp. <i>equorum</i> (AB009939; 99.6%)	2.4
		MZ338717	<i>Zhihengliuella halotolerans</i> (DQ372937; 99.0%)	2.4

Supplementary Table S5. Continuation.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala de Marco Craso	420±50	MZ338718	<i>Exiguobacterium mexicanum</i> (AM072764; 99.9%)	5.3
		MZ338719	<i>Glutamicibacter halophytocola</i> (JX993762; 99.3%)	2.7
		MZ338720	<i>Knoellia locipacati</i> (HQ171909; 98.2%)	25.3
		MZ338721	<i>Micrococcus luteus</i> (CP001628; 99.6%)	56.0
		MZ338722	<i>Prolinoborus fasciculus</i> (JN175353; 100%)	2.7
		MZ338723	<i>Staphylococcus equorum</i> subsp. <i>equorum</i> (AB009939; 99.9%)	6.7
		MZ338724	<i>Terribacillus goriensis</i> (DQ519571; 99.8%)	1.3
Sala del Volcán	630±30	MZ338725	<i>Exiguobacterium profundum</i> (AY818050; 100%)	2.7
		MZ338726	<i>Glutamicibacter arilaitensis</i> (FQ311875; 99.9%)	1.8
		MZ338727	<i>Massilia timonae</i> (AGZI01000009; 99.3%)	0.9
		MZ338728	<i>Micrococcus endophyticus</i> (EU005372; 99.2%)	49.1
		MZ338729	<i>Micrococcus luteus</i> (CP001628; 99.6%)	36.4
		MZ338730	<i>Prolinoborus fasciculus</i> (JN175353; 99.7%)	3.6
		MZ338731	<i>Pseudomonas atacamensis</i> (SSBS01000008; 99.2%)	1.8
MZ338732	<i>Staphylococcus hominis</i> subsp. <i>novobiosepticus</i> (AB233326; 99.8%)	3.6		
Galeria Breuil	200±180	MZ338733	<i>Knoellia locipacati</i> (HQ171909; 98.2%)	8.1
		MZ338734	<i>Metabacillus litoralis</i> (AY608605; 99.3%)	2.7
		MZ338735	<i>Microbacterium hydrocarbonoxydans</i> (BCRF01000095; 99.4%)	2.7
		MZ338736	<i>Microbacterium oxydans</i> (Y17227; 99.2%)	2.7
		MZ338737	<i>Micrococcus endophyticus</i> (EU005372; 99.3%)	35.1
		MZ338738	<i>Peribacillus loiseleuriae</i> (LFZW01000001; 98.5%)	10.8
		MZ338739	<i>Pseudarthrobacter psychrotolerans</i> (MN559964; 98.5%)	32.4
MZ338740	<i>Rathayibacter festucae</i> (AM410683; 99.8%)	5.4		
Outdoor air	120±10	MZ338741	<i>Bacillus taxi</i> (MK355518; 99.6%)	17.4
		MZ338742	<i>Citricoccus nitrophenolicus</i> (GU797177; 99.6%)	17.4
		MZ338743	<i>Luteimonas terrae</i> (KJ769177; 100%)	4.3
		MZ338744	<i>Metabacillus litoralis</i> (AY608605; 99.3%)	4.3
		MZ338745	<i>Micrococcus luteus</i> (CP001628; 99.9%)	34.8
		MZ338746	<i>Staphylococcus epidermidis</i> (UHDF01000003; 100%)	4.3
		MZ338747	<i>Staphylococcus hominis</i> subsp. <i>novobiosepticus</i> (AB233326; 99.9%)	13.0
MZ338748	<i>Variovorax boronicumulans</i> (AB300597; 98.3%)	4.3		

Supplementary Table S6. Sampling campaign in *Cueva del Tesoro*, summer 2011. CFU/m³, accession numbers, identifications and abundances.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala de La Virgen	200±57	MZ338749	<i>Bacillus idriensis</i> (AY904033; 99.1%)	39.5
		MZ338750	<i>Cytobacillus oceanisediminis</i> (GQ292772; 99.4%)	2.6
		MZ338751	<i>Massilia timonae</i> (AGZI01000009; 99.3%)	2.6
		MZ338752	<i>Micrococcus luteus</i> (CP001628; 99.7%)	44.7
		MZ338753	<i>Streptomyces anulatus</i> (DQ026637)/ <i>S. fulvissimus</i> (CP005080)/ <i>S. microflavus</i> (AB184284)/ <i>S. cyaneofuscatus</i> (JOEM01000050)/ <i>S. halstedii</i> (AB184142)/ <i>S. fulvorobeus</i> (AB184711); (99.4%)	10.5
Sala de Lagos	110±40	MZ338754	<i>Knoellia locipacati</i> (HQ171909; 98.3%)	28.6
		MZ338755	<i>Massilia timonae</i> (U54470; 99.3%)	4.8
		MZ338756	<i>Micrococcus luteus</i> (CP001628; 99.5%)	38.1
		MZ338757	<i>Micrococcus terreus</i> (jgi.1058018; 99.8%)	4.8
		MZ338758	<i>Pseudomonas psychrotolerans</i> (FMWB01000061)/ <i>P. oryzihabitans</i> (BBIT01000012); (99.4%)	9.5
		MZ338759	<i>Zhihengliuella halotolerans</i> (DQ372937; 99.7%)	14.3
Galería hacia Lagos	640±370	LN774332	<i>Bacillus omubensis</i> (NSEB01000017; 99.7%)	2.7
		MZ338760	<i>Bacillus toyonensis</i> (CP006863)/ <i>B. mobilis</i> (MACF01000036); (99.9%)	0.9
		MZ338761	<i>Glutamicibacter arilaitensis</i> (FQ311875; 100%)	0.9
		MZ338762	<i>Knoellia subterranea</i> (AVPK01000001; 98%)	73.2
		MZ338763	<i>Micrococcus antarcticus</i> (AJ005932; 99.3%)	0.9
		MZ338764	<i>Micrococcus luteus</i> (CP001628; 99.6%)	8.9
		MZ338765	<i>Sphingomonas sanguinis</i> (BCTY01000091; 99.2%)	1.8
		MZ338766	<i>Staphylococcus caprae</i> (AB009935; 98.5%)	1.8
		MZ338767	<i>Staphylococcus cohnii</i> subsp. <i>urealyticus</i> (AB009936; 99.7%)	3.6
MZ338768	<i>Streptomyces exfoliatus</i> (JNZP01000081; 99.7%)	5.4		
Sala de Marco Craso	280±90	MZ338769	<i>Acinetobacter oryzae</i> (GU954428; 99.1%)	3.9
		MZ338770	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.0%)	2.0
		MZ338771	<i>Cytobacillus horneckiae</i> (FR749913; 100%)	2.0
		MZ338772	<i>Massilia suwonensis</i> (FJ969487; 98.8%)	7.8
		MZ338773	<i>Massilia timonae</i> (AGZI01000009; 99.1%)	2.0
		MZ338774	<i>Microbacterium phyllosphaerae</i> (AJ277840; 98.9%)	3.9
		MZ338775	<i>Micrococcus endophyticus</i> (EU005372; 99.3%)	66.7
		MZ338776	<i>Paracoccus aerius</i> (KX664462; 99.7%)	2.0
MZ338777	<i>Pseudomonas kuykendallii</i> (FNNU01000014; 99.3%)	9.8		

Supplementary Table S6. Continuation.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala del Volcán	420±60	MZ338778	<i>Glutamicibacter arilaitensis</i> (FQ311875; 99.7%)	6.7
		MZ338779	<i>Massilia oculi</i> (FR773700; 99.4%)	4.0
		MZ338780	<i>Micrococcus endophyticus</i> (EU005372; 99.4%)	60.0
		MZ338781	<i>Staphylococcus cohnii</i> subsp. <i>cohnii</i> (D83361; 100%)	5.3
		MZ338782	<i>Staphylococcus cohnii</i> subsp. <i>urealyticus</i> (AB009936; 100%)	2.7
		MZ338783	<i>Staphylococcus hominis</i> subsp. <i>hominis</i> (X66101; 99.4%)	5.3
		MZ338784	<i>Staphylococcus saprophyticus</i> subsp. <i>bovis</i> (AB233327; 99.6%)	8.0
		MZ338785	<i>Streptomyces exfoliatus</i> (JNZP01000081; 99.2%)	2.7
		MZ338786	<i>Streptomyces virginiae</i> (JOAK01000082; 99.8%)	4.0
MZ338787	<i>Ureibacillus chungkukjangi</i> (JX217747; 98.2%)	1.3		
Galería Breuil	480±160	MZ338788	<i>Acinetobacter johnsonii</i> (APON01000005; 98.5%)	8.1
		MZ338789	<i>Bacillus licheniformis</i> (AE017333; 99.9%)	2.3
		MZ338790	<i>Glutamicibacter mysorens</i> (AJ639831; 99.7%)	44.2
		MZ338791	<i>Mesobacillus thioparans</i> (DQ371431; 98.8%)	3.5
		MZ338792	<i>Microbacterium aerolatum</i> (BJUW01000027; 99.3%)	4.7
		MZ338793	<i>Micrococcus luteus</i> (CP001628; 99.3%)	29.1
		MZ338794	<i>Peribacillus loiseleuriae</i> (LFZW01000001; 98.6%)	2.3
		MZ338795	<i>Pseudomonas xanthomarina</i> (AB176954; 99.0%)	5.8
Outdoor air	140±10	MZ338796	<i>Acinetobacter johnsonii</i> (APON01000005; 98.7%)	3.7
		MZ338797	<i>Brevibacterium aurantiacum</i> (X76566; 98.8%)	22.2
		MZ338798	<i>Glutamicibacter halophytocola</i> (JX993762; 99.2%)	3.7
		MZ338799	<i>Glutamicibacter mysorens</i> (AJ639831; 99.6%)	18.5
		MZ338800	<i>Metabacillus litoralis</i> (AY608605; 99.4%)	3.7
		MZ338801	<i>Microbacterium oleivorans</i> (BCRG01000019; 99.9%)	3.7
		MZ338802	<i>Micrococcus endophyticus</i> (EU005372; 99.4%)	3.7
		MZ338803	<i>Pseudarthrobacter psychrotolerans</i> (MN559964; 99.1%)	18.5
		MZ338804	<i>Sphingomonas yunnanensis</i> (AY894691; 98.9%)	3.7
		MZ338805	<i>Streptomyces exfoliatus</i> (JNZP01000081; 99.5%)	3.7
		MZ338806	<i>Zhihengliuella halotolerans</i> (DQ372937; 99.7%)	14.8

Supplementary Table S7. Sampling campaign in *Cueva del Tesoro*, autumn 2011. CFU/m³, accession numbers, identifications and abundances.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala de La Virgen	280±35	MZ338807	<i>Bacillus proteolyticus</i> (MACH01000033; 98.0%)	2.0
		MZ338808	<i>Corynebacterium xerosis</i> (LAYS01000008; 99.9%)	3.9
		MZ338809	<i>Jeotgalicoccus halophilus</i> (FJ386517; 100%)	29.4
		MZ338810	<i>Kocuria rosea</i> (X87756; 99.2%)	9.8
		MZ338811	<i>Micrococcus luteus</i> (CP001628; 99.9%)	29.4
		MZ338812	<i>Novosphingobium panipatense</i> (jgi.1118302; 99.6%)	7.8
		MZ338813	<i>Paenisporosarcina quisquiliarum</i> (DQ333897; 98.8%)	7.8
		MZ338814	<i>Rhodococcus zopfii</i> (BCXI01000001; 98.7%)	2.0
MZ338815	<i>Streptomyces prasinus</i> (LIRH01000162; 100%)	7.8		
Sala de Lagos	140±30	MZ338816	<i>Arenivirga flava</i> (LC203064; 99.5%)	9.5
		MZ338817	<i>Arthrobacter pityocampae</i> (EU855749; 99.2%)	4.8
		MZ338818	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.6%)	4.8
		MZ338819	<i>Massilia niabensis</i> (EU808006; 98.9%)	4.8
		MZ338820	<i>Microbacterium phyllosphaerae</i> (AJ277840; 99.8%)	4.8
		MZ338821	<i>Micrococcus luteus</i> (CP001628; 99.8%)	9.5
		MZ338822	<i>Serratia liquefaciens</i> (CP006252; 99.9%)	33.3
		MZ338823	<i>Staphylococcus equorum</i> subsp. <i>equorum</i> (AB009939; 100%)	4.8
		MZ338824	<i>Staphylococcus xylosus</i> (MRZO01000018; 99.9%)	9.5
MZ338825	<i>Streptomyces longisporoflavus</i> (AB184220; 99.9%)	14.3		
Galería hacia Lagos	110±10	MZ338826	<i>Arthrobacter pokkali</i> (KM507333; 99.2%)	23.8
		MZ338827	<i>Arthrobacter tumbae</i> (AJ315069; 100%)	14.3
		MZ338828	<i>Kocuria rosea</i> (X87756; 99.8%)	19.0
		MZ338829	<i>Microbacterium oleivorans</i> (BCRG01000019; 99.4%)	14.3
		MZ338830	<i>Sporosarcina luteola</i> (AB473560; 99.9%)	23.8
		MZ338831	<i>Streptomyces xantholiticus</i> (AB184349; 99.2%)	4.8
Sala de Marco Craso	250±10	MZ338833	<i>Bacillus tropicus</i> (MACG01000025; 99.8%)	14.6
		MZ338832	<i>Bacillus wiedmannii</i> (LOBC01000053)/ <i>B. albus</i> (MAOE01000087)/ <i>B. luti</i> (MACI01000041)/ <i>B. fungorum</i> (MG601116); (100%)	10.4
		MZ338834	<i>Glutamicibacter arilaitensis</i> (FQ311875; 100%)	12.5
		MZ338835	<i>Kocuria rosea</i> (X87756; 99.8%)	10.4
		MZ338836	<i>Microbacterium esteraromaticum</i> (Y17231; 99.8%)	20.8
		MZ338837	<i>Prolinoborus fasciculus</i> (JN175353; 99.9%)	8.3
		MZ338838	<i>Pseudoclavibacter helvolus</i> (X77440; 99.8%)	6.3
		MZ338839	<i>Streptomyces anulatus</i> (DQ026637; 99.7%)	6.3
		MZ338840	<i>Streptomyces exfoliatus</i> (AB184324; 99.9%)	10.4

Supplementary Table S7. Continuation.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala del Volcán	200±10	MZ338841	<i>Glutamicibacter arilaitensis</i> (FQ311875; 99.7%)	7.9
		MZ338842	<i>Lentzea albidocapillata</i> subsp. <i>albidocapillata</i> (JOEA01000052; 99.2%)	2.6
		MZ338843	<i>Metabacillus litoralis</i> (AY608605; 99.3%)	7.9
		MZ338844	<i>Micrococcus luteus</i> (CP001628; 99.8%)	68.4
		MZ338845	<i>Paenisporosarcina quisquiliarum</i> (DQ333897; 99.8%)	2.6
		MZ338846	<i>Pseudarthrobacter oxydans</i> (X83408; 99.8%)	10.5
Galería Breuil	100±70	MZ338847	<i>Bacillus aryabhatai</i> (EF114313; 100%)	20.0
		MZ338848	<i>Micrococcus luteus</i> (CP001628; 99.8%)	20.0
		MZ338849	<i>Streptomyces kurssanovii</i> (AB184325; 99.9%)	60.0
Outdoor air	340±20	MZ338850	<i>Bacillus humi</i> (AJ627210; 99.0%)	6.3
		MZ338851	<i>Glutamicibacter arilaitensis</i> (FQ311875; 99.7%)	7.9
		MZ338852	<i>Microbacterium hydrocarbonoxydans</i> (BCRF01000095; 99.9%)	15.9
		MZ338853	<i>Micrococcus luteus</i> (CP001628; 99.8%)	41.3
		MZ338854	<i>Neobacillus bataviensis</i> (AJ542508)/ <i>N. soli</i> (BCVI01000121); (99.1%)	4.8
		MZ338855	<i>Pseudarthrobacter oxydans</i> (X83408; 99.7%)	3.2
		MZ338856	<i>Pseudomonas mediterranea</i> (AUPB01000004; 99.0%)	4.8
		MZ338857	<i>Sphingomonas aerolata</i> (AJ429240; 99.9%)	1.6
		MZ338858	<i>Streptomyces exfoliatus</i> (JNZP01000081; 99.5%)	9.5
MZ338859	<i>Streptomyces lateritius</i> (AJ781326; 99.2%)	4.8		

Supplementary Table S8. Sampling campaign in *Cueva del Tesoro*, winter 2012. CFU/m³, accession numbers, identifications and abundances.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala de la Virgen	250±0	MZ338860	<i>Acinetobacter lwoffii</i> (AIEL01000120; 100%)	4.2
		MZ338861	<i>Arthrobacter agilis</i> (X80748; 99.8%)	2.1
		MZ338862	<i>Bacillus aryabhatai</i> (EF114313; 100%)	4.2
		MZ338863	<i>Bhargavaea cecembensis</i> (AM286423; 99.5%)	8.3
		MZ338864	<i>Kocuria polaris</i> (JSUH01000031; 99.7%)	4.2
		MZ338865	<i>Leuconostoc mesenteroides</i> subsp. <i>mesenteroides</i> (CP000414; 99.9%)	6.3
		MZ338866	<i>Lysinibacillus xylanilyticus</i> (FJ477040; 99.3%)	4.2
		MZ338867	<i>Micrococcus luteus</i> (CP001628; 99.8%)	22.9
		MZ338868	<i>Okibacterium fritillariae</i> (FUZP01000004; 99.9%)	16.7
		MZ338869	<i>Paenibacillus amylolyticus</i> (BIMJ01000009; 100%)	10.4
		MZ338870	<i>Pantoea dispersa</i> (DQ504305; 98.8%)	2.1
		MZ338871	<i>Sphingomonas olei</i> (KX672814; 100%)	4.2
		MZ338872	<i>Streptomyces cremeus</i> (AB184124; 98.9%)	6.3
MZ338873	<i>Streptomyces koyangensis</i> (CP031742; 99.5%)	4.2		
Sala de Lagos	130±40	MZ338874	<i>Frigoribacterium faeni</i> (BJUV01000064; 99.5%)	8.0
		MZ338875	<i>Glutamicibacter nicotianae</i> (BJNE01000038; 98.1 %)	32.0
		MZ338876	<i>Glutamicibacter soli</i> (EF660748; 98.9%)	16.0
		MZ338877	<i>Paenibacillus amylolyticus</i> (BIMJ01000009; 100%)	12.0
		MZ338878	<i>Planococcus ruber</i> (KX950835; 98.7%)	4.0
		MZ338879	<i>Pseudarthrobacter siccitolerans</i> (CAQI01000001; 100%)	16.0
MZ338880	<i>Pseudomonas rhizosphaerae</i> (CP009533; 99.8%)	12.0		
Galería hacia Lagos	100±30	MZ338881	<i>Arthrobacter crystallopoietes</i> (FNKH01000002; 99.2%)	15.0
		MZ338882	<i>Bhargavaea cecembensis</i> (AM286423; 99.5%)	20.0
		MZ338883	<i>Corynebacterium casei</i> (CP004350; 100%)	10.0
		MZ338884	<i>Kocuria gwangalliensis</i> (EU286964; 99.4%)	5.0
		MZ338885	<i>Kocuria polaris</i> (JSUH01000031; 99.7%)	10.0
		MZ338886	<i>Microbacterium paraoxydans</i> (BCRH01000180; 99.7%)	10.0
		MZ338887	<i>Micrococcus luteus</i> (CP001628; 99.8%)	15.0
		MZ338888	<i>Streptomyces rochei</i> (MUMD01000370)/ <i>S. vinaceusdrappus</i> (AY999929)/ <i>S. enissocaesilis</i> (DQ026641); (100%)	10.0
MZ338889	<i>Streptomyces xantholiticus</i> (AB184349; 99.1%)	5.0		

Supplementary Table S8. Continuation.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala de Marco Craso	280±10	MZ338890	<i>Arthrobacter pascens</i> (X80740; 98.2%)	13.7
		MZ338891	<i>Bacillus cereus</i> (AE016877)/ <i>B. paramycooides</i> (MAOI01000012)/ <i>B. paranthracis</i> (MACE01000012)/ <i>B. nitratreducens</i> (KJ812430); (100%)	7.8
		MZ338892	<i>Bhargavaea cecembensis</i> (AM286423; 99.5%)	5.9
		MZ338893	<i>Kocuria gwangalliensis</i> (EU286964; 99.9%)	2.0
		MZ338894	<i>Lysinibacillus odysseyi</i> (AF526913; 98.7%)	9.8
		MZ338895	<i>Microbacterium paraoxydans</i> (BCRH01000180; 100%)	3.9
		MZ338896	<i>Micrococcus luteus</i> (CP001628; 99.8%)	15.7
		MZ338897	<i>Paracoccus marcusii</i> (Y12703)/ <i>P. carotinifaciens</i> (AB006899); (100%)	9.8
		MZ338898	<i>Planococcus ruber</i> (KX950835; 98.7%)	2.0
		MZ338899	<i>Psychrobacillus psychrodurans</i> (jgi.1085849; 97.6%)	3.9
		MZ338900	<i>Staphylococcus epidermidis</i> (UHDF01000003; 100%)	5.9
		MZ338901	<i>Staphylococcus equorum</i> subsp. <i>equorum</i> (AB009939; 100%)	2.0
		MZ338902	<i>Streptomyces prasinus</i> (LIRH01000162; 99.9%)	5.9
MZ338903	<i>Streptomyces xantholiticus</i> (AB184349; 99.2%)	11.8		
Sala del Volcán	170±10	MZ338904	<i>Alcaligenes faecalis</i> subsp. <i>phenolicus</i> (AUBT01000026; 99.7%)	6.3
		MZ338905	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.5%)	6.3
		MZ338906	<i>Metabacillus indicus</i> (JGVU01000003; 100%)	12.1
		MZ338907	<i>Metabacillus litoralis</i> (AY608605; 99.1%)	3.1
		MZ338908	<i>Micrococcus luteus</i> (CP001628; 99.8%)	40.6
		MZ338909	<i>Paenibacillus amylolyticus</i> (BIMJ01000009; 100%)	3.1
		MZ338910	<i>Streptomyces cinereoruber</i> subsp. <i>cinereoruber</i> (AB184121; 100%)	3.1
		MZ338911	<i>Streptomyces kurssanovii</i> (AB184325; 99.1%)	25.0
Galeria Breuil	200±40	MZ338912	<i>Agrobacterium cavarae</i> (MK940276; 99.8%)	5.9
		MZ338913	<i>Aureimonas altamirensis</i> (BBWQ01000019; 100%)	5.9
		MZ338914	<i>Bacillus foraminis</i> (AJ717382; 99.8%)	8.8
		MZ338915	<i>Bacillus halmपालुस</i> (KV917375; 99.1%)	8.8
		MZ338916	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.5%)	5.9
		MZ338917	<i>Glutamicibacter arilaitensis</i> (FQ311875; 99.2%)	2.9
		MZ338918	<i>Massilia oculi</i> (FR773700; 100%)	2.9
		MZ338919	<i>Metabacillus litoralis</i> (AY608605; 99.2%)	2.9
		MZ338920	<i>Microbacterium yannicii</i> (FN547412; 99.0%)	2.9

Supplementary Table S8. Continuation.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Galeria Breuil		MZ338921	<i>Micrococcus luteus</i> (CP001628; 99.8%)	26.5
		MZ338922	<i>Pseudarthrobacter oxydans</i> (X83408; 99.8%)	8.8
		MZ338923	<i>Pseudomonas congelans</i> (FNJH01000022; 98.4%)	11.8
		MZ338924	<i>Psychrobacillus insolitus</i> (AM980508; 98.8%)	2.9
		MZ338925	<i>Rhodococcus corynebacterioides</i> (AF430066; 99.6%)	2.9
Outdoor air	230±100	MZ338926	<i>Acinetobacter lwoffii</i> (AIEL01000120; 99.8%)	11.4
		MZ338927	<i>Bacillus badius</i> (JXLP01000009; 99.2%)	2.3
		MZ338928	<i>Bacillus cereus</i> (AE016877; 100%)	9.1
		MZ338929	<i>Cellulosimicrobium funkei</i> (AY501364; 99.8%)	6.8
		MZ338930	<i>Citricoccus nitrophenolicus</i> (GU797177; 98.7%)	6.8
		MZ338931	<i>Micrococcus luteus</i> (CP001628; 99.7%)	20.5
		MZ338932	<i>Peribacillus simplex</i> (AB363738; 99.8%)	9.1
		MZ338933	<i>Planococcus donghaensis</i> (CP016544; 98.4%)	2.3
		MZ338934	<i>Pseudarthrobacter scleromae</i> (AF330692; 98.9%)	15.9
MZ338935	<i>Ureibacillus sinduriensis</i> (FJ169465; 99.6%)	15.9		

Supplementary Table S9. Sampling campaign in *Gruta de las Maravillas*, spring 2011. CFU/m³, accession numbers, identifications and abundances.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala de Las Conchas	100±42	MZ338936	<i>Acinetobacter lwoffii</i> (AIEL01000120; 100%)	10.0
		MZ338937	<i>Corynebacterium xerosis</i> (LAYS01000008; 99.4%)	15.0
		MZ338938	<i>Micrococcus luteus</i> (CP001628; 98.8%)	45.0
		MZ338939	<i>Pseudomonas asplenii</i> (LT629777; 99.1%)	5.0
		MZ338940	<i>Staphylococcus borealis</i> (MT586030; 99.9%)	15.0
		MZ338941	<i>Staphylococcus hominis</i> subsp. <i>novobiosepticus</i> (AB233326; 99.8%)	10.0
Sala del Lago 2	710±160	MZ338942	<i>Acinetobacter johnsonii</i> (APON01000005; 99.2%)	10.7
		MZ338943	<i>Aerococcus urinaeequi</i> (CP014162; 99.2%)	24.0
		MZ338944	<i>Kocuria tytonis</i> (MG547562; 99.6%)	9.1
		MZ338945	<i>Massilia suwonensis</i> (FJ969487; 99.1%)	0.8
		MZ338946	<i>Microbacterium foliorum</i> (JYIU01000006; 98.7%)	5.0
		MZ338947	<i>Micrococcus antarcticus</i> (AJ005932; 99.2%)	4.1
		MZ338948	<i>Micrococcus endophyticus</i> (EU005372; 99.1%)	35.5
		MZ338949	<i>Prolinoborus fasciculus</i> (JN175353; 99.6%)	2.5
MZ338950	<i>Staphylococcus borealis</i> (MT586030; 99.2%)	8.3		
Sala del Volcán	140±170	MZ338951	<i>Aerococcus urinaeequi</i> (CP014162; 99.6%)	7.1
		MZ338952	<i>Agrococcus baldri</i> (FOZN01000001; 98.2%)	3.6
		MZ338953	<i>Bacillus vietnamensis</i> (AB099708; 99.3%)	21.4
		MZ338954	<i>Corynebacterium casei</i> (CP004350; 99.7%)	3.6
		MZ338955	<i>Curtobacterium flaccumfaciens</i> (AJ312209; 99.8%)	10.7
		MZ338956	<i>Metabacillus litoralis</i> (AY608605; 98.8%)	3.6
		MZ338957	<i>Micrococcus endophyticus</i> (EU005372; 99.1%)	50.0
Sala de Los Desnudos	200±10	MZ338958	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.0%)	26.3
		MZ338959	<i>Micrococcus antarcticus</i> (AJ005932; 99.1%)	15.8
		MZ338960	<i>Micrococcus endophyticus</i> (EU005372; 99.1%)	15.8
		MZ338961	<i>Prolinoborus fasciculus</i> (JN175353; 99.9%)	13.2
		MZ338962	<i>Pseudomonas stutzeri</i> (CP002881; 99.9%)	5.3
		MZ338963	<i>Staphylococcus haemolyticus</i> (LILF01000056; 99.6%)	21.1
		MZ338964	<i>Staphylococcus saprophyticus</i> subsp. <i>bovis</i> (AB233327; 99.8%)	2.6

Supplementary Table S9. Continuation.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Exit Passage	250±60	MZ338965	<i>Aerococcus urinaeequi</i> (CP014162; 100%)	6.3
		MZ338966	<i>Brevundimonas diminuta</i> (GL883089; 99.4%)	16.7
		MZ338967	<i>Micrococcus endophyticus</i> (EU005372; 99.2%)	58.3
		MZ338968	<i>Psychrobacter celer</i> (AY842259; 99.9%)	14.6
		MZ338969	<i>Rhodococcus fascians</i> (JMEN01000010; 99.5%)	2.1
		MZ338970	<i>Staphylococcus saprophyticus</i> subsp. <i>bovis</i> (AB233327; 99.9%)	2.1
Outdoor air	210±70	MZ338971	<i>Acinetobacter halotolerans</i> (KT032155; 98.5%)	21.6
		MZ338972	<i>Frigoribacterium faeni</i> (BJUV01000064; 99.9%)	21.6
		MZ338973	<i>Massilia timonae</i> (AGZI01000009; 99.5%)	2.7
		MZ338974	<i>Micrococcus endophyticus</i> (EU005372; 99.2%)	16.2
		MZ338975	<i>Micrococcus luteus</i> (CP001628; 99.9%)	24.3
		MZ338976	<i>Pseudomonas simiae</i> (AJ936933; 99.8%)	5.4
		MZ338977	<i>Staphylococcus edaphicus</i> (KY315825; 100%)	2.7
		MZ338978	<i>Staphylococcus equorum</i> subsp. <i>equorum</i> (AB009939; 99.3%)	5.4

Supplementary Table S10. Sampling campaign in *Gruta de las Maravillas*, summer 2011. CFU/m³, accession numbers, identifications and abundances.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala de Las Conchas	60±7	MZ338979	<i>Kocuria palustris</i> (Y16263; 100%)	27.3
		MZ338980	<i>Micrococcus endophyticus</i> (EU005372; 99.2%)	36.4
		MZ338981	<i>Pseudarthrobacter siccitolerans</i> (CAQI01000001; 99.1%)	9.1
		MZ338982	<i>Staphylococcus hominis</i> subsp. <i>novobiosepticus</i> (AB233326; 99.3%)	18.2
		MZ338983	<i>Streptomyces spiroverticillatus</i> (AB249921; 99.0%)	9.1
Sala del Lago 2	130±40	MZ338984	<i>Micrococcus luteus</i> (CP001628; 99.7%)	92.0
		MZ338985	<i>Terribacillus goriensis</i> (DQ519571; 100%)	8.0
Sala del Volcán	100±130	MZ338986	<i>Aerococcus urinaeequi</i> (CP014162; 99.8%)	10.0
		MZ338987	<i>Bacillus mycoides</i> (ACMU01000002; 99.4%)	5.0
		MZ338988	<i>Microbacterium oleivorans</i> (BCRG01000019; 99.7%)	5.0
		MZ338989	<i>Micrococcus endophyticus</i> (EU005372; 99.4%)	50.0
		MZ338990	<i>Staphylococcus saprophyticus</i> subsp. <i>bovis</i> (AB233327; 99.4%)	30.0
Sala de Los Desnudos	50±10	MZ338991	<i>Corynebacterium glutamicum</i> (BA000036; 99.9%)	55.6
		MZ338992	<i>Micrococcus endophyticus</i> (EU005372; 99.5%)	44.4
Exit Passage	120±70	MZ338993	<i>Aerococcus urinaeequi</i> (CP014162; 99.9%)	20.8
		LN650668	<i>Bacillus onubensis</i> sp. nov. (NSEB01000017)	4.2
		MZ338994	<i>Empedobacter brevis</i> (AM177497; 99.5%)	20.8
		MZ338995	<i>Kaistella montana</i> (KX082815; 98.9%)	12.5
		MZ338996	<i>Knoellia subterranea</i> (AVPK01000001; 98.8%)	12.5
		MZ338997	<i>Micrococcus endophyticus</i> (EU005372; 99.5%)	20.8
		MZ338998	<i>Pseudomonas stutzeri</i> (CP002881; 99.7%)	8.3
Outdoor air	690±0	MZ338999	<i>Arthrobacter oryzae</i> (AB279889; 99.9%)	14.4
		LN650668	<i>Bacillus onubensis</i> sp. nov. (NSEB01000017)	5.9
		MZ339000	<i>Bacillus zhangzhouensis</i> (JOTP01000061; 99.7%)	3.4
		MZ339001	<i>Chryseomicrobium aureum</i> (KF781632; 99.4%)	10.2
		MZ339002	<i>Corynebacterium glutamicum</i> (BA000036; 99.9%)	2.5
		MZ339003	<i>Kocuria salina</i> (LT674162; 99.2%)	0.8
		MZ339004	<i>Massilia brevitalea</i> (EF546777; 98.8%)	4.2
		MZ339005	<i>Metabacillus litoralis</i> (AY608605; 99.2%)	0.8
		MZ339006	<i>Microbacterium esteraromaticum</i> (Y17231; 99.8%)	17.8
MZ339007	<i>Microbacterium hydrocarbonoxydans</i> (BCRF01000095; 99.1%)	5.1		

Supplementary Table S10. Continuation.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Outdoor air		MZ339008	<i>Micrococcus endophyticus</i> (EU005372; 99.4%)	11.0
		MZ339009	<i>Paenibacillus lautus</i> (BIMF01000051; 99.6%)	5.9
		MZ339010	<i>Pseudomonas stutzeri</i> (CP002881; 99.6%)	2.5
		MZ339011	<i>Staphylococcus cohnii</i> subsp. <i>cohnii</i> (D83361; 99.9%)	14.4
		MZ339012	<i>Staphylococcus succinus</i> (AF004220; 99.7%)	0.8

Supplementary Table S11. Sampling campaign in *Gruta de las Maravillas*, autumn 2011. CFU/m³, accession numbers, identifications and abundances.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala de Las Conchas	760±247	MZ339013	<i>Acinetobacter haemolyticus</i> (APQQ01000002; 99.4%)	0.8
		MZ339014	<i>Aerococcus urinaeequi</i> (CP014162; 99.8%)	2.4
		MZ339015	<i>Bacillus siamensis</i> (AJVF01000043; 99.9%)	0.8
		MZ339016	<i>Curtobacterium flaccumfaciens</i> (AJ312209; 100%)	5.5
		MZ339017	<i>Kocuria arsenatis</i> (KM874399; 99.9%)	2.4
		MZ339018	<i>Massilia timonae</i> (AGZI01000009; 99.4%)	3.9
		MZ339019	<i>Micrococcus endophyticus</i> (EU005372; 99.2%)	74.8
		MZ339020	<i>Pseudomonas caspiana</i> (LOHF01000033; 99.8%)	0.8
		MZ339021	<i>Psychrobacter faecalis</i> (AJ421528; 99.8%)	5.5
		MZ339022	<i>Staphylococcus hominis</i> subsp. <i>novobiosepticus</i> (AB233326; 99.9%)	1.6
MZ339023	<i>Staphylococcus saprophyticus</i> subsp. <i>saprophyticus</i> (AP008934; 99.9%)	1.6		
Sala del Lago 2	540±60	MZ339024	<i>Acinetobacter johnsonii</i> (APON01000005; 99.3%)	2.1
		MZ339025	<i>Aerococcus urinaeequi</i> (CP014162; 100%)	5.2
		MZ339026	<i>Haematobacter massiliensis</i> (DQ342309; 100%)	7.3
		MZ339027	<i>Kaistella montana</i> (KX082815; 98.9%)	7.3
		MZ339028	<i>Massilia suwonensis</i> (FJ969487; 99.3%)	6.3
		MZ339029	<i>Microbacterium aurum</i> (CP018762; 98.6%)	2.1
		MZ339030	<i>Micrococcus luteus</i> (CP001628; 99.6%)	63.5
		MZ339031	<i>Roseomonas mucosa</i> (UGVN01000001; 100%)	5.2
MZ339032	<i>Streptomyces gardneri</i> (AB249908; 100%)	1.0		
Sala del Volcán	630±150	MZ339033	<i>Acinetobacter lwoffii</i> (AIEL01000120; 99.9%)	3.7
		MZ339034	<i>Aerococcus urinaeequi</i> (CP014162; 100%)	7.3
		MZ339035	<i>Chryseobacterium tructae</i> (FR871429; 98.1%)	1.8
		MZ339036	<i>Luteimonas terrae</i> (KJ769177; 99.8%)	1.8
		MZ339037	<i>Massilia haematophila</i> (AM774589; 99.0%)	3.7
		MZ339038	<i>Massilia timonae</i> (AGZI01000009; 99.5%)	4.6
		MZ339039	<i>Microbacterium lacus</i> (AB286030; 99.3%)	25.7
		MZ339040	<i>Micrococcus luteus</i> (CP001628; 99.8%)	35.8
		MZ339042	<i>Rahnella victoriana</i> (KF308403; 99.8%)	11.0
MZ339041	<i>Paracoccus caeni</i> (GQ250442; 100%)	4.6		

Supplementary Table S11. Continuation.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala de Los Desnudos	200±70	MZ339043	<i>Brachybacterium paraconglomeratum</i> (AJ415377; 99.5%)	2.6
		MZ339044	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.7%)	5.3
		MZ339045	<i>Massilia suwonensis</i> (FJ969487; 98.7%)	7.9
		MZ339046	<i>Microbacterium phyllosphaerae</i> (AJ277840; 98.9%)	2.6
		MZ339047	<i>Micrococcus luteus</i> (CP001628; 99.7%)	63.2
		MZ339048	<i>Paenibacillus uliginis</i> (FN556467; 99.4%)	2.6
		MZ339049	<i>Pseudomonas moorei</i> (AM293566; 97.9%)	5.3
		MZ339050	<i>Staphylococcus edaphicus</i> (KY315825; 99.6%)	10.5
Exit Passage	930±270	MZ339051	<i>Aerococcus urinaeequi</i> (CP014162; 99.9%)	7.2
		MZ339052	<i>Bacillus altitudinis</i> (ASJC01000029; 99.5%)	8.6
		MZ339053	<i>Corynebacterium xerosis</i> (LAYS01000008; 100%)	0.7
		MZ339054	<i>Kocuria rosea</i> (X87756; 98.7%)	4.6
		MZ339055	<i>Microbacterium esteraromaticum</i> (Y17231; 99.8%)	5.9
		MZ339056	<i>Micrococcus luteus</i> (CP001628; 99.8%)	63.8
		MZ339057	<i>Prolinoborus fasciculus</i> (JN175353; 99.9%)	6.6
		MZ339058	<i>Pseudomonas stutzeri</i> (CP002881; 99.9%)	0.7
MZ339059	<i>Staphylococcus edaphicus</i> (KY315825; 100%)	2.0		
Outdoor air	360±20	MZ339060	<i>Acinetobacter halotolerans</i> (KT032155; 98.7%)	9.6
		MZ339061	<i>Aerococcus urinaeequi</i> (CP014162; 99.9%)	6.5
		MZ339062	<i>Arthrobacter ulcerisalmonis</i> (MK211245; 98.9%)	4.8
		MZ339063	<i>Exiguobacterium mexicanum</i> (AM072764; 100%)	9.6
		MZ339064	<i>Micrococcus luteus</i> (CP001628; 99.8%)	50.0
		MZ339065	<i>Neobacillus niacini</i> (AB021194; 99.1%)	3.3
		MZ339066	<i>Rhodococcus corynebacterioides</i> (AF430066; 99.7%)	1.6
		MZ339067	<i>Sphingomonas olei</i> (KX672814; 99.6%)	6.5
		MZ339068	<i>Staphylococcus equorum</i> subsp. <i>equorum</i> (AB009939; 100%)	3.3
MZ339069	<i>Staphylococcus saprophyticus</i> subsp. <i>saprophyticus</i> (AP008934; 99.8%)	4.8		

Supplementary Table S12. Sampling campaign in *Gruta de las Maravillas*, winter 2012. CFU/m³, accession numbers, identifications and abundances.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala de Las Conchas	130±42	MZ339070	<i>Acinetobacter lwoffii</i> (AIEL01000120; 99.9%)	3.8
		MZ339071	<i>Agrococcus baldri</i> (FOZN01000001; 99.4%)	23.1
		MZ339072	<i>Arthrobacter globiformis</i> (BAEG01000072; 99.5%)	3.8
		MZ339073	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.3%)	7.7
		MZ339074	<i>Macrococcus equipercicus</i> (Y15712; 100%)	3.8
		MZ339076	<i>Micrococcus luteus</i> (CP001628; 99.5%)	38.5
		MZ339075	<i>Micrococcus terreus</i> (jgi.1058018; 99.9%)	7.7
		MZ339077	<i>Staphylococcus equorum</i> subsp. <i>equorum</i> (AB009939; 99.8%)	7.7
MZ339078	<i>Streptomyces avidinii</i> (AB184395; 99.8%)	3.8		
Sala del Lago 2	360±10	MZ339079	<i>Acinetobacter baumannii</i> (ACQB01000091; 97.7%)	1.5
		MZ339080	<i>Acinetobacter johnsonii</i> (APON01000005; 99.4%)	4.6
		MZ339081	<i>Aerococcus urinaeequi</i> (CP014162; 100%)	10.8
		MZ339082	<i>Arthrobacter citreus</i> (X80737; 100%)	7.7
		MZ339083	<i>Bacillus licheniformis</i> (AE017333; 99.5%)	1.5
		MZ339084	<i>Bacillus megaterium</i> (JJMH01000057; 99.8%)	3.1
		MZ339085	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.3%)	1.5
		MZ339086	<i>Corynebacterium xerosis</i> (LAYS01000008; 99.9%)	1.5
		MZ339087	<i>Glutamicibacter arilaitensis</i> (FQ311875; 100%)	1.5
		MZ339088	<i>Janibacter limosus</i> (Y08539; 98.8%)	10.8
		MZ339089	<i>Kaistella anthropi</i> (AM982786; 98.1%)	4.6
		MZ339090	<i>Macrococcus equipercicus</i> (Y15712; 100%)	3.1
		MZ339091	<i>Microbacterium aurum</i> (CP018762; 98.6%)	7.7
		MZ339092	<i>Micrococcus luteus</i> (CP001628; 99.7%)	24.6
		MZ339093	<i>Planococcus rifietoensis</i> (CP013659; 100%)	3.1
		MZ339095	<i>Sporosarcina luteola</i> (AB473560; 100%)	4.6
MZ339094	<i>Staphylococcus borealis</i> (MT586030; 99.9%)	7.7		

Supplementary Table S12. Continuation.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Sala del Volcán	140±30	MZ339096	<i>Alcaligenes faecalis</i> subsp. <i>phenolicus</i> (AUBT01000026; 99.2%)	4.0
		MZ339097	<i>Brachybacterium paraconglomeratum</i> (AJ415377; 99.9%)	12.0
		MZ339098	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.4%)	8.0
		MZ339099	<i>Glutamicibacter arilaitensis</i> (FQ311875; 100%)	28.0
		MZ339100	<i>Kaistella anthropi</i> (AM982786; 97.9%)	4.0
		MZ339101	<i>Microbacterium ginsengiterrae</i> (EU873314; 99.5%)	12.0
		MZ339102	<i>Micrococcus luteus</i> (CP001628; 99.7%)	12.0
		MZ339103	<i>Prolinoborus fasciculus</i> (JN175353; 98.6%)	8.0
		MZ339104	<i>Sphingobacterium lactis</i> (jgi.1085797; 99.8%)	4.0
MZ339105	<i>Streptomyces xantholiticus</i> (AB184349; 99.2%)	8.0		
Sala de Los Desnudos	190±60	MZ339106	<i>Achromobacter piechaudii</i> (BCTK01000022; 99.8%)	8.8
		MZ339107	<i>Acinetobacter halotolerans</i> (KT032155; 98.7%)	2.9
		MZ339108	<i>Acinetobacter ursingii</i> (AIEA01000080; 100%)	2.9
		MZ339109	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.7%)	17.7
		MZ339110	<i>Dietzia timorensis</i> (LMTB01000088; 99.9%)	2.9
		MZ339111	<i>Microbacterium aurum</i> (CP018762; 98.6%)	23.5
		MZ339112	<i>Micrococcus luteus</i> (CP001628; 99.7%)	32.4
		MZ339113	<i>Promicromonospora xylanilytica</i> (FJ214352; 99.6%)	2.9
MZ339114	<i>Staphylococcus simulans</i> (D83373; 99.8%)	5.9		
Exit Passage	120±50	MZ339115	<i>Brevundimonas vesicularis</i> (BCWM01000033)/ <i>B. nasdae</i> (AB071954); (99.6%)	8.7
		MZ339116	<i>Cupriavidus oxalaticus</i> (AF155567; 99.4%)	4.3
		MZ339117	<i>Glutamicibacter arilaitensis</i> (FQ311875; 100%)	4.3
		MZ339118	<i>Limimanicola cinnabarinus</i> (BATB01000114; 96.6%)	4.3
		MZ339119	<i>Macrococcus equipercicus</i> (Y15712; 99.9%)	4.3
		MZ339120	<i>Microbacterium aurum</i> (CP018762; 98.7%)	13.0
		MZ339121	<i>Micrococcus luteus</i> (CP001628; 99.6%)	39.1
		MZ339122	<i>Neobacillus niacini</i> (AB021194; 99.2%)	4.3
		MZ339123	<i>Rhodococcus yunnanensis</i> (BCXH01000047; 99.7%)	4.3
		MZ339124	<i>Streptomyces gardneri</i> (AB249908; 100%)	4.3
MZ339125	<i>Streptomyces olivaceus</i> (JOFH01000101; 99.5%)	8.7		

Supplementary Table S12. Continuation.

Sampling	CFU/m ³ air	Accession Number	Identification (% identity)	Abundance (%)
Outdoor air	1190±300	MZ339126	<i>Arthrobacter bussei</i> (MN080869; 99.9%)	16.9
		MZ339127	<i>Arthrobacter gandavensis</i> (AJ316140; 99.9%)	3.4
		MZ339128	<i>Bacillus altitudinis</i> (ASJC01000029; 99.9%)	0.5
		MZ339129	<i>Bacillus aryabhatai</i> (EF114313; 100%)	2.3
		MZ339130	<i>Bacillus paramycoides</i> (MAOI01000012)/ <i>B. paranthracis</i> (MACE01000012)/ <i>B. nitratreducens</i> (KJ812430); (99.8%)	4.5
		MZ339131	<i>Bhargavaea beijingensis</i> (EF371374; 99.6%)	4.0
		MZ339132	<i>Bhargavaea ginsengi</i> (EF371375; 99.9%)	1.7
		MZ339133	<i>Brevibacterium frigoritolerans</i> (AM747813)/ <i>Peribacillus simplex</i> (BCVO01000086); (99.9%)	0.5
		MZ339134	<i>Citricoccus zhacaiensis</i> (EU305672; 98.7%)	2.8
		MZ339135	<i>Curtobacterium flaccumfaciens</i> (AJ312209; 100%)	11.3
		MZ339136	<i>Cytobacillus oceanisediminis</i> (GQ292772; 98.5%)	1.1
		MZ339137	<i>Exiguobacterium mexicanum</i> (AM072764; 100%)	8.4
		MZ339138	<i>Kocuria rosea</i> (X87756; 99.6%)	1.1
		MZ339139	<i>Microbacterium aurum</i> (CP018762; 98.4%)	6.2
		MZ339140	<i>Microbacterium endophyticum</i> (KJ920264; 98.5%)	10.7
		MZ339141	<i>Pseudarthrobacter equi</i> (LT629779; 100%)	7.4
		MZ339142	<i>Pseudarthrobacter phenanthrenivorans</i> (CP002379; 99.9%)	5.6
		MZ339143	<i>Rathayibacter caricis</i> (AF159364; 99.7%)	2.3
		MZ339144	<i>Rhodococcus cerastii</i> (FR714842; 99.7%)	2.3
		MZ339145	<i>Staphylococcus equorum</i> subsp. <i>equorum</i> (AB009939; 100%)	2.8
MZ339146	<i>Streptomyces daghestanicus</i> (DQ442497)/ <i>S. albidoflavus</i> (Z76676)/ <i>S. violascens</i> (AY999737); (99.7%)	1.7		
MZ339147	<i>Streptomyces prasinus</i> (LIRH01000162; 98.3%)	2.3		