

Table S1: Bacterial and fungal isolates (MALDI Score ≥ 2.00) from the Lepe jame sampling site in Postojnska jama. Concentrations (CFU/m³) and percentages (%) of isolates based on flow cytometry results.

		Lepe jame (CFU/m ³ (%))							
Bacteria		February 2017	March 2017	May 2017	August 2017	October 2017	Decembre 2017	August 2018	Novembre 2018
<i>Aerococcus viridans</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	15 (0.19)	NP
<i>Arthrobacter oxydans</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	17 (0.04)	NP	NP	NP	NP	NP	NP
<i>Arthrobacter tumbae</i>	Before tourists	NP	17 (0.06)	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Bacillus cereus</i>	Before tourists	NP	17 (0.06)	NP	NP	NP	NP	NP	4 (0.05)
	After tourists	NP	NP	NP	NP	NP	17 (0.27)	NP	NP
<i>Bacillus pumilus</i>	Before tourists	NP	NP	NP	17 (0.04)	NP	NP	NP	NP
	After tourists	NP	17 (0.04)	NP	17 (0.04)	NP	NP	NP	NP
<i>Bacillus simplex</i>	Before tourists	NP	NP	NP	17 (0.04)	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	17 (0.27)	NP	NP
<i>Brevibacterium aurantiacum</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	17 (0.04)	NP	NP	NP	NP
<i>Brevibacterium</i> sp.	Before tourists	NP	NP	NP	NP	NP	67 (0.73)	NP	NP
	After tourists	NP	17 (0.04)	NP	17 (0.04)	NP	NP	NP	NP
<i>Brevundimonas intermedia</i>	Before tourists	NP	NP	NP	NP	NP	17 (0.19)	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Chryseobacterium</i> sp.	Before tourists	NP	NP	NP	17 (0.04)	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Jeotgalicoccus</i> sp.	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	17 (0.04)	NP	NP	NP	NP

	After tourists	50 (0.76)	NP	NP	117 (0.28)	NP	NP	NP	NP
<i>Staphylococcus equorum</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	17 (0.04)	NP	67 (0.16)	NP	NP	NP	NP
<i>Staphylococcus haemolyticus</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	6 (0.09)	NP	NP
<i>Staphylococcus lugdunensis</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	17 (0.04)	NP	NP	NP	NP
<i>Staphylococcus sp.</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	8 (0.10)	NP
<i>Staphylococcus warneri</i>	Before tourists	NP	NP	NP	NP	NP	THI	NP	NP
	After tourists	NP	NP	NP	NP	NP	THI	NP	NP
<i>Streptococcus mitis</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	17 (0.20)
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Streptomyces lavendulae</i>	Before tourists	NP	NP	NP	NP	33 (0.14)	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Streptomyces sp.</i>	Before tourists	NP	NP	NP	NP	NP	NP	8 (0.08)	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Viridibacillus sp.</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	17 (0.21)	NP
Fungi									
<i>Aspergillus fumigatus</i>	Before tourists	17 (0.26)	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Aureobasidium pullulans</i>	Before tourists	NP	NP	NP	33 (0.08)	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Naganishia diffluens</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	THI	NP	NP	NP
<i>Paecilomyces variotii</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	17 (0.26)	NP	NP	NP	NP	NP	NP	NP

Summary of microbial identification for all sampling campaigns									
Non-identified microorganisms	Before tourists	34 (0.52)	34 (0.11)	50 (0.48)	149 (0.36)	80 (0.35)	337 (3.70)	8 (0.08)	NP
	After tourists	94 (1.42)	34 (0.08)	17 (0.13)	200 (0.48)	17 (0.21)	153 (2.41)	34 (0.43)	17 (0.04)
Sum (before tourists)	Before tourists	51	93	67	400	113	421	17	40
Sum (after tourists)	After tourists	188	169	51	787	68	327	173	100
% of identified species	Before tourists	33.3	63.4	25.4	62.8	29.2	20.0	52.9	100
	After tourists	50.0	79.9	66.7	74.6	75.0	53.2	80.3	83
Quotient of concentration between after vs. before tourists samples		3.7	1.8	0.8	2.0	0.6	0.8	10.2	2.5

THI – Thioglycollate broth; NP – not present

Table S2: Bacterial and fungal isolates (MALDI Score ≥ 2.00) from the Vivarium sampling site in Postojnska jama. Concentrations (CFU/m³) and percentages (%) of isolates based on flow cytometry results.

		Vivarium (CFU/m ³ (%))						
Bacteria		March 2017	May 2017	August 2017	October 2017	Decembre 2017	August 2018	Novembre 2018
<i>Acinetobacter lwoffii</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	33 (0.25)	33 (0.07)	NP	NP	NP	33 (0.22)
<i>Aerococcus viridans</i>	Before tourists	NP	17 (0.19)	33 (0.08)	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP
<i>Arthrobacter</i> sp.	Before tourists	NP	NP	NP	86 (1.61)	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP
<i>Arthrobacter polychromogenes</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	50 (0.11)	NP	NP	NP	NP

<i>Bacillus cereus</i>	Before tourists	NP	NP	NP	NP	NP	NP	3 (0.03)
	After tourists	17 (0.02)	NP	NP	86 (0.94)	NP	NP	NP
<i>Bacillus sp.</i>	Before tourists	NP	NP	17 (0.04)	NP	NP	11 (0.18)	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP
<i>Bacillus licheniformis</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	33 (0.25)	NP	84 (0.92)	THI	NP	NP
<i>Bacillus pumilus</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	84 (0.92)	NP	NP	NP
<i>Bacillus simplex</i>	Before tourists	NP	NP	17 (0.04)	NP	NP	NP	NP
	After tourists	17 (0.02)	NP	NP	NP	NP	NP	NP
<i>Brevibacterium aurantiacum</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	33 (0.05)	NP	NP	NP	NP	NP	NP
<i>Brevundimonas intermedia</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	17 (0.11)	NP	NP
<i>Citricoccus nitrophenolicus</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	1 (0.01)
<i>Dermacoccus sp.</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	33 (0.25)	NP	NP	NP	NP	NP
<i>Dietzia maris</i>	Before tourists	2 (0.004)	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP
<i>Dietzia sp.</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	17 (0.02)	NP	NP	NP	NP	NP	NP
<i>Glutamicibacter bergerei</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	17 (0.11)
<i>Kocuria rhizophila</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	17 (0.13)	NP	NP	NP	NP	NP
<i>Kytococcus sedentarius</i>	Before tourists	3 (0.006)	NP	NP	NP	NP	NP	NP

	After tourists	NP	NP	17 (0.04)	NP	NP	NP	NP
	Before tourists	17 (0.03)	17 (0.19)	7 (0.02)	NP	33 (0.12)	NP	5 (0.05)
<i>Micrococcus luteus</i>	After tourists	33 (0.05)	618 (4.60)	150 (0.32)	150 (1.64)	NP	17 (0.25)	117 (0.78)
	Before tourists	NP	NP	NP	NP	NP	NP	NP
<i>Pantoea agglomerans</i>	After tourists	NP	NP	THI	NP	NP	NP	NP
	Before tourists	17 (0.03)	NP	NP	NP	33 (0.12)	NP	NP
<i>Paracoccus yeei</i>	After tourists	NP	17 (0.13)	NP	NP	NP	NP	NP
	Before tourists	NP	NP	NP	NP	84 (0.29)	NP	NP
<i>Pseudomonas sp.</i>	After tourists	NP	NP	NP	NP	NP	NP	NP
	Before tourists	NP	NP	NP	NP	NP	NP	NP
<i>Psychrobacillus sp.</i>	After tourists	NP	NP	NP	33 (0.36)	NP	NP	NP
	Before tourists	NP	NP	NP	NP	NP	NP	NP
<i>Psychrobacter sp.</i>	After tourists	NP	NP	NP	NP	NP	NP	33 (0.22)
	Before tourists	NP	17 (0.19)	NP	NP	NP	NP	NP
<i>Rhodococcus fascians</i>	After tourists	NP	NP	NP	NP	NP	NP	NP
	Before tourists	NP	NP	NP	NP	NP	NP	NP
<i>Rothia aeria</i>	After tourists	NP	NP	NP	NP	NP	NP	33 (0.22)
	Before tourists	NP	NP	NP	NP	NP	NP	NP
<i>Sporosarcina sp.</i>	After tourists	NP	NP	NP	NP	NP	NP	17 (0.11)
	Before tourists	17 (0.03)	NP	NP	NP	NP	NP	NP
<i>Staphylococcus epidermidis</i>	After tourists	NP	NP	NP	NP	NP	NP	NP
	Before tourists	NP	NP	NP	NP	NP	NP	NP
<i>Staphylococcus equorum</i>	After tourists	NP	50 (0.37)	33 (0.07)	NP	NP	NP	33 (0.22)
	Before tourists	NP	NP	NP	NP	NP	NP	NP
<i>Staphylococcus haemolyticus</i>	After tourists	NP	17 (0.13)	NP	NP	NP	NP	NP

<i>Staphylococcus lugdunensis</i>	Before tourists	NP	NP	NP	NP	NP	THI	NP
	After tourists	33 (0.05)	NP	NP	NP	NP	NP	NP
<i>Staphylococcus saprophyticus</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	17 (0.13)	NP	NP	NP	NP	NP
<i>Staphylococcus warneri</i>	Before tourists	NP	NP	NP	NP	5 (0.02)	NP	NP
	After tourists	NP	NP	NP	NP	8 (0.05)	NP	NP
<i>Streptococcus pseudopneumoniae</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	301 (1.99)
Fungi								
<i>Aspergillus versicolor</i>	Before tourists	NP	NP	NP	NP	NP	NP	217 (2.37)
	After tourists	NP	NP	NP	NP	NP	NP	267 (1.77)
<i>Cutaneotrichosporon curvatum</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	7 (0.10)	NP
<i>Debaryomyces hansenii</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	33 (0.05)	NP	NP	NP	NP	NP	NP
<i>Naganishia diffluens</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	THI	NP	NP	NP
<i>Naganishia liquefaciens</i>	Before tourists	2 (0.004)	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP
<i>Rhodotorula mucilaginosa</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	1 (0.002)	NP	NP	NP	NP
Summary of microbial identification for all sampling campaigns								
Non-identified microorganisms	Before tourists	85 (0.17)	101 (1.14)	NP	557 (4.52)	167 (0.58)	NP	1 (0.01)
	After tourists	143 (0.20)	452 (3.37)	49 (0.12)	349 (3.82)	34 (0.23)	57 (0.82)	68 (0.45)
Sum (before tourists)	Before tourists	143	152	74	643	322	11	226
Sum (after tourists)	After tourists	326	1287	333	786	59	81	920

% of identified species	Before tourists	40.6	33.6	100.0	13.4	48.1	100.0	99.6
	After tourists	56.1	64.9	85.3	55.6	42.4	29.6	92.6
Quotient of concentration between after vs. before tourists samples		2.3	8.5	4.5	1.2	0.2	7.4	4.1

THI – Thioglycollate broth; NP – not present

Tabele S3: Bacterial and fungal isolates (MALDI Score ≥ 2.00) from the Šotor sampling site in Škocjanske jame. Concentrations (CFU/m³) and percentages (%) of isolates based on flow cytometry results.

		Šotor (CFU/m ³ (%))							
Genus		February 2017	March 2017	May 2017	August 2017	October 2017	Decembre 2017	August 2018	Novembre 2018
<i>Acinetobacter guillouiae</i>	Before tourists	NP	NP	NP	NP	7 (0.05)	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Acinetobacter</i> sp.	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	17 (0.16)	17 (0.04)	NP	NP	NP	NP
<i>Acinetobacter johnsonii</i>	Before tourists	NP	NP	NP	17 (0.04)	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Acinetobacter lwoffii</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	6	17 (0.25)	NP	17 (0.11)	NP
<i>Aerococcus viridans</i>	Before tourists	NP	NP	NP	NP	NP	NP	THI	NP
	After tourists	NP	NP	NP	33 (0.07)	NP	NP	NP	NP
<i>Arthrobacter oxydans</i>	Before tourists	NP	NP	NP	NP	17 (0.11)	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Arthrobacter polychromogenes</i>	Before tourists	NP	NP	NP	NP	NP	NP	8 (0.03)	NP
	After tourists	NP	NP	NP	17 (0.04)	NP	NP	NP	NP
<i>Arthrobacter sulfonivorans</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	33 (0.07)	NP	NP	NP	NP

<i>Bacillus cereus</i>	Before tourists	NP	NP	17 (0.16)	NP	NP	NP	NP	NP
	After tourists	NP	NP	17 (0.16)	NP	NP	NP	NP	NP
<i>Bacillus licheniformis</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	117 (0.48)	NP	NP	NP	NP	NP	NP	NP
<i>Bacillus</i> sp.	Before tourists	NP	NP	NP	NP	NP	NP	THI	NP
	After tourists	NP	NP	NP	NP	NP	17 (0.24)	NP	NP
<i>Bacillus muralis</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	17 (0.04)	NP	NP	NP	NP
<i>Bacillus novalis</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	1 (0.008)
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Bacillus simplex</i>	Before tourists	NP	7 (0.03)	NP	NP	NP	NP	8 (0.03)	NP
	After tourists	NP	8 (0.03)	NP	17 (0.04)	NP	NP	NP	NP
<i>Brevibacterium</i> sp.	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	THI	NP	NP	NP
<i>Dietzia maris</i>	Before tourists	NP	NP	NP	NP	NP	NP	8 (0.03)	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Kocuria</i> sp.	Before tourists	NP	NP	NP	33 (0.07)	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Kocuria rhizophila</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	17 (0.16)	NP	NP	NP	33 (0.22)	NP
<i>Massilia timonae</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	17 (0.04)	NP	NP	NP	NP
<i>Microbacterium</i> sp.	Before tourists	NP	NP	NP	NP	17 (0.11)	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Micrococcus</i> sp.	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	17 (0.07)	NP	NP	NP	NP	NP	NP
<i>Micrococcus luteus</i>	Before tourists	50 (0.23)	NP	NP	67 (0.15)	NP	THI	45 (0.18)	33 (0.26)

	After tourists	33 (0.14)	18 (0.08)	84 (0.81)	67 (0.15)	84 (1.22)	NP	92 (0.60)	83 (0.08)
<i>Pseudomonas antarctica</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	17 (0.07)	NP	NP	NP	NP	NP	NP	NP
<i>Pseudomonas extremorientalis</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	33 (0.14)	NP	NP	NP	NP	NP	NP	NP
<i>Pseudomonas fluorescens</i>	Before tourists	THI	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Pseudomonas syriNPae</i>	Before tourists	33 (0.15)	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Pseudomonas tolaasii</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	33 (0.14)	NP	NP	NP	NP	NP	NP	NP
<i>Pseudomonas sp.</i>	Before tourists	17 (0.08)	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Rahnella aquatilis</i>	Before tourists	30 (0.14)	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Rhizobium rubi</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	17 (0.07)	NP	NP	NP	NP	NP	NP	NP
<i>Roseomonas mucosa</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	17 (0.14)
	After tourists	NP	NP	NP	NP	NP	NP	NP	17 (0.02)
<i>Solibacillus sp.</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	4 (0.06)	NP	NP	NP
<i>Sphingomonas sp.</i>	Before tourists	NP	NP	NP	NP	NP	NP	8 (0.03)	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Staphylococcus epidermidis</i>	Before tourists	NP	NP	17 (0.16)	NP	17 (0.11)	NP	NP	NP
	After tourists	NP	NP	33 (0.32)	NP	NP	NP	NP	NP
<i>Staphylococcus hominis</i>	Before tourists	NP	8 (0.03)	NP	33 (0.07)	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP

<i>Staphylococcus saprophyticus</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	17 (0.16)	NP	NP	NP	NP	NP
<i>Staphylococcus warneri</i>	Before tourists	NP	NP	NP	NP	NP	3 (0.06)	NP	NP
	After tourists	NP	NP	NP	NP	NP	4 (0.06)	NP	NP
<i>Staphylococcus</i> sp.	Before tourists	17 (0.08)		NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
<i>Stenotrophomonas</i> sp.	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	50 (0.21)	NP	NP	NP	NP	NP	NP	NP
<i>Streptomyces</i> sp.	Before tourists	NP	NP	NP	NP	17 (0.11)	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	NP	NP
Fungi									
<i>Aureobasidium pullulans</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	NP	NP	17 (0.11)	NP
<i>Cutaneotrichosporon curvatum</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	17 (0.04)	33 (0.48)	NP	25 (0.16)	NP
<i>Naganishia liquefaciens</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	NP	50 (0.73)	NP	NP	NP
<i>Rhodotorula mucilaginosa</i>	Before tourists	NP	NP	NP	NP	NP	NP	NP	NP
	After tourists	NP	NP	NP	33 (0.07)	NP	NP	NP	NP
Summary of microbial identification for all sampling campaigns									
Non-identified microorganisms	Before tourists	68 (0.32)	50 (0.19)	17 (0.16)	101 (0.22)	318 (2.15)	17 (0.35)	NP	NP
	After tourists	27 (0.11)	17 (0.07)	150 (1.45)	185 (0.41)	351 (5.10)	101 (1.41)	34 (0.22)	NP
Sum (before tourists)	Before tourists	215	65	51	251	393	20	77	51
Sum (after tourists)	After tourists	327	60	335	459	539	122	218	100
% of identified species	Before tourists	68,4	23,1	66,7	59,8	19,1	15,0	100,0	100,0
	After tourists	91,7	71,7	55,2	59,7	34,9	17,2	84,4	100,0

Quotient of concentration between after vs. before tourists samples	1,5	0,9	6,6	1,8	1,4	6,1	2,8	2,0
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THI – Thioglycollate broth; NP – not present

Table S4: Bacterial isolates (MALDI Score ≥ 2.00) from the sampling sites Lepe jame and Vivarium in Postojnska jama and from the sampling site Šotor in Škocjanske jame, their risk group assignment and typical habitat. Concentrations (CFU/m³) and percentages (%) of isolates based on flow cytometry results.

Bacterial species	Lepe jame		Vivarium		Šotor		Locations Combined		Risk Group	Typical Habitat
	Bacteria (CFU/m ³ (%))		Bacteria (CFU/m ³ (%))		Bacteria (CFU/m ³ (%))		Bacteria (CFU/m ³)			
	Before tourists	After tourists	Before tourists	After tourists	Before tourists	After tourists	Before tourists	After tourists		
<i>Acinetobacter guillouiae</i>	NP	NP	NP	NP	7 (0.62)	NP	0-7	NP	-	ubiquitous, gasworks, humans (skin)
<i>Acinetobacter johnsonii</i>	NP	NP	NP	NP	17	NP	0-17	NP	2 (AU, CH, DE)	humans (skin), animals, activated sludge, food
<i>Acinetobacter lwoffii</i>	NP	NP	NP	99 (2.61)	NP	40 (1.85)	NP	0-99	2 (AU, CH, DE)	ubiquitous, food, humans (skin)
<i>Aerococcus viridans</i>	NP	15 (0.81)	50 (3.18)	NP	NP	33 (1.53)	0-50	0-33	2 (BE, CH, DE)	Humans (urinary tract), animals (lobsters), seawater
<i>Arthrobacter oxydans</i>	NP	17 (0.91)	NP	NP	17 (1.51)	NP	0-17	0-17	-	ubiquitous, soil, plants
<i>Arthrobacter polychromogenes</i>	NP	NP	NP	50 (1.32)	8 (0.71)	17 (0.79)	0-8	0-50	-	ubiquitous, soil, plants

<i>Arthrobacter sulfonivorans</i>	NP	NP	NP	NP	NP	33 (1.53)	NP	0-33	-	ubiquitous, soil, plants
<i>Arthrobacter tumbae</i>	17 (1.41)	NP	NP	NP	NP	NP	0-17	NP	-	ubiquitous, soil, plants
<i>Bacillus cereus</i>	21 (1.75)	17 (0.91)	3 (0.19)	103 (2.72)	17 (1.51)	17 (0.79)	3-21	17-103	2 (AU, CH, DE, UK)	humans, soil, food
<i>Bacillus licheniformis</i>	NP	NP	NP	117 (3.09)	NP	117 (5.42)	NP	0-117	-	soil, food, animals (birds)
<i>Bacillus megaterium</i>	NP	NP	NP	NP	THI	NP	NP	NP	-	soil, seawater, food, animals (insects)
<i>Bacillus novalis</i>	NP	NP	NP	NP	1 (0.09)	NP	0-1	NP	-	soil, hay fields
<i>Bacillus pumilus</i>	17 (1.41)	34 (1.83)	NP	84 (2.22)	NP	NP	0-17	0-84	-	soil, animals, food (milk)
<i>Bacillus simplex</i>	17 (1.41)	17 (0.91)	17 (1.08)	17 (0.45)	15 (1.34)	25 (1.16)	15-17	17-25	-	soil, plants
<i>Brevibacterium aurantiacum</i>	NP	17 (0.91)	NP	33 (0.87)	NP	NP	NP	0-33	-	food (milk and cheese)
<i>Brevundimonas intermedia</i>	17 (1.41)	NP	NP	17 (0.45)	NP	NP	0-17	0-17	-	ubiquitous, seawater
<i>Citricoccus nitrophenolicus</i>	NP	NP	NP	1 (0.03)	NP	NP	NP	0-1	-	wastewater
<i>Dietzia maris</i>	NP	NP	2 (0.13)	NP	8 (0.71)	NP	0-8	NP	-	humans, animals, seawater
<i>Glutamicibacter bergerei</i>	NP	NP	NP	17 (0.45)	NP	NP	NP	0-17	-	soil
<i>Kocuria rhizophila</i>	50 (4.16)	17 (0.91)	NP	17 (0.45)	NP	50 (2.31)	0-50	17-50	-	Soil, sand, human and animal skin
<i>Kytococcus sedentarius</i>	NP	17 (0.91)	3 (0.19)	17 (0.45)	NP	NP	0-3	0-17	-	aquatic, humans (skin)
<i>Massilia timonae</i>	NP	NP	NP	NP	NP	17 (0.79)	NP	0-17	-	Plants (maize), humans
<i>Microbacterium paraoxydans</i>	NP	THI	NP	NP	NP	NP	NP	NP	-	Humans, plastic

<i>Micrococcus luteus</i>	153 (12.7)	545 (29.3)	79 (5.02)	1085 (28.61)	195 (17.36)	461 (21.34)	79-195	545- 1085	2 (BE, CH, DE, NIH)	soil, aquatic, air, human and animal skin
<i>Moraxella osloensis</i>	NP	42 (2.25)	NP	NP	NP	NP	NP	0-42	-	Human skin and mucosae
<i>Oerskovia turbata</i>	NP	33 (1.77)	NP	NP	NP	NP	NP	0-33	-	Soil, human
<i>Paenibacillus urinalis</i>	NP	17 (0.91)	NP	NP	NP	NP	NP	0-17	-	Human (urin)
<i>Pantoea agglomerans</i>	NP	NP	NP	THI	NP	NP	NP	NP	2 (CH)	Plants, animals (insects), dust
<i>Paracoccus yeei</i>	NP	34 (1.83)	50 (3.18)	17 (0.45)	NP	NP	0-50	0-34	2 (AU)	Soil, brines
<i>Pseudomonas antarctica</i>	NP	NP	NP	NP	NP	17 (0.79)	NP	0-17	2 (AU)	Aquatic, soil, ice, cyanobacterial mats
<i>Pseudomonas extremorientalis</i>	NP	NP	NP	NP	NP	33 (1.53)	NP	0-33	2 (AU)	Aquatic, soil, plants
<i>Pseudomonas fluorescens</i>	NP	NP	NP	NP	THI	NP	NP	NP	2 (AU)	Soil, plants, humans, animals
<i>Pseudomonas syringae</i>	NP	NP	NP	NP	33 (2.94)	NP	0-33	NP	2 (AU)	Plants
<i>Pseudomonas tolaasii</i>	NP	NP	NP	NP	NP	33 (1.53)	NP	0-33	2 (AU)	Mushrooms
<i>Rahnella aquatilis</i>	NP	NP	NP	NP	30 (2.67)	NP	0-30	NP	-	Aquatic, plants
<i>Rhizobium rubi</i>	NP	NP	NP	NP	NP	17 (0.79)	NP	0-17	-	Plants, soil
<i>Rhodococcus erythropolis</i>	NP	50 (2.68)	NP	NP	NP	NP	NP	0-50	-	Soil, seawater, sediments
<i>Rhodococcus fascians</i>	NP	NP	17 (1.08)	NP	NP	NP	0-17	NP	-	Plants
<i>Roseomonas mucosa</i>	9 (0.75)	NP	NP	NP	17 (1.51)	17 (0.79)	0-17	0-17	-	Humans (skin)
<i>Rothia aeria</i>	NP	NP	NP	33 (0.87)	NP	NP	NP	0-33	-	Air, humans (oral mucosa)
<i>Staphylococcus capitis</i>	NP	33 (1.77)	3 (0.19)	NP	NP	NP	0-3	0-33	-	Animals, humans (skin, scalp)

<i>Staphylococcus epidermidis</i>	17 (1.41)	167 (8.96)	17 (1.08)	NP	34 (3.03)	33 (1.53)	17-34	0-167	2 (BE, CH, DE)	Animals, humans (skin, nasopharynx), fermented sausages
<i>Staphylococcus equorum</i>	NP	84 (4.51)	NP	116 (3.06)	NP	NP	NP	0-116	-	Fermented food, animals (horses, cattle)
<i>Staphylococcus haemolyticus</i>	NP	6 (0.32)	NP	17 (0.45)	NP	NP	NP	0-17	2 (CH, DE)	Fermented food, milk, animals (horses, cattle, cats), humans (skin)
<i>Staphylococcus hominis</i>	NP	NP	NP	NP	41 (3.65)	NP	0-41	NP	-	Fermented food, goat milk, animals (cats, dogs, goats), humans (skin)
<i>Staphylococcus lugdunensis</i>	NP	17 (0.91)	NP	33 (0.87)	NP	NP	NP	0-33	2 (BE, CH, DE)	Animals (cats, dogs), humans (skin)
<i>Staphylococcus saprophyticus</i>	NP	NP	NP	17 (0.45)	NP	17 (0.79)	NP	0-17	2 (BE, CA, CH, DE)	Animals (horses, cattle), humans (skin)
<i>Staphylococcus warneri</i>	THI	THI	5 (0.32)	8 (0.21)	3 (0.27)	4 (0.19)	0-5	4-5	-	Fermented food, animals (cats, dogs, horses), humans (skin)
<i>Streptococcus mitis</i>	17 (1.41)	NP	NP	NP	NP	NP	0-17	NP	2 (BE, CH, DE, NIH)	Humans (oropharynx)
<i>Streptococcus pseudopneumoniae</i>	NP	NP	NP	301 (7.94)	NP	NP	NP	0-301	-	Humans (oropharynx)
<i>Streptomyces lavendulae</i>	33 (2.75)	NP	NP	NP	NP	NP	0-33	NP	-	Soil

BE—Belgium; CA—Canada; CH—Switzerland; DE—Germany; NIH—National Institutes of Health; THI—Thioglycollate broth; NP—not present

Tabela S5: Fungal isolates (MALDI Score ≥ 2.00) from the sampling sites Lepe jame and Vivarium in Postojnska jama and from the sampling site Šotor in Škocjanske jame, their risk group assignment and typical habitat. Concentrations (CFU/m³) and percentages (%) of isolates based on flow cytometry results.

Fungal isolates	Lepe jame		Vivarium		Šotor		Locations Combined		Risk Group	Typical habitat
	Fungi (CFU/m ³ (%))		Fungi (CFU/m ³ (%))		Fungi (CFU/m ³ (%))		Fungi (CFU/m ³)			
	Before tourists	After tourists	Before tourists	After tourists	Before tourists	After tourists	Before tourists	After tourists		
<i>Aspergillus fumigatus</i> *	17 (1.41)	NP	NP	NP	NP	NP	0-17	NP	2 (AU, CA, CH, DE, EU)	Ubiquitous, air, dust, plants
<i>Aspergillus versicolor</i> *	NP	NP	217 (13.79)	267 (7.04)	NP	NP	0-217	0-267	2 (UK)	Ubiquitous, air, dust, plants
<i>Aureobasidium pullulans</i>	33 (2.75)	NP	NP	NP	NP	17 (0.79)	0-33	0-17	-	Ubiquitous, plants
<i>Cutaneotrichosporon curvatum</i>	NP	NP	NP	7 (0.18)	NP	75 (3.47)	NP	0-82	-	Air, aquatic, wood, food
<i>Debaryomyces hansenii</i>	NP	NP	NP	33 (0.87)	NP	NP	NP	0-33	-	Seawater, fermented food
<i>Naganishia diffluens</i>	NP	THI	NP	THI	NP	NP	NP	NP	-	Air, aquatic, wood, food, humans (skin)
<i>Naganishia liquefaciens</i>	NP	NP	2 (0.13)	NP	NP	50 (2.31)	0-2	0-50	-	Air, aquatic, wood, food, humans (skin)
<i>Paecilomyces variotii</i> *	NP	17 (0.91)	NP	NP	NP	NP	NP	0-17	2 (BE, CH, DE)	Air, wood, soil, food
<i>Rhodotorula mucilaginosa</i>	NP	NP	NP	1 (0.03)	NP	33 (1.53)	NP	0-34	1 (DE)	Air, soil, food (cheese, milk), humans (skin, oropharynx)
All Fungi	50 (4.16)	17 (0.91)	219 (13.91)	308 (8.13)	NP	175 (8.10)	0-217	0-267	-	-

BE – Belgium; CA – Canada; CH – Switzerland; DE – Germany; EU – European Union; NIH – National Institutes of Health; THI – Thioglycollate broth; NP – not present

* Identification is based on the morphological characteristics of the isolates.