

Table 5. Closest match of cultured bacterial OTUs from Scarisoara ice samples.

Sample	Sequence [Accession number]	Closest match	Identity (%)	Sources of isolates	Affiliation
1-S	SM4.1-S.1 [KP219085] ¹	<i>Pseudomonas</i> sp. 7029 [AM111029]	96	deep sea sediment	<input type="checkbox"/> Proteobacteria
	SM4.1-S.14 [KJ454416]	<i>Paenibacillus macquariensis</i> KFC-81 [EF459546]	95	soil sample; Kafni Glacier	Firmicutes
	SM4.1-S.37 [KP219103] ^{2*}	<i>Pseudomonas putida</i> strain SB 3051 [GU191929]	99	waste water	<input type="checkbox"/> Proteobacteria
	SM4.1-S.38 [KP219104]	<i>Pseudomonas putida</i> strain V25 [FN995245]	100	sand	<input type="checkbox"/> Proteobacteria
	SM4.1-S.44 [KP219107] ^{2*}	<i>Pseudomonas putida</i> strain SB 3051 [GU191929]	99	waste water	<input type="checkbox"/> Proteobacteria
	SM4.1-S.45 [KF853207]	<i>Carnobacterium divergens</i> strain KSI 1347 [KC113133]	90	dust	Firmicutes
	SM4.1-S.46 [KF853217] ³	Soil bacterium 5V-07 [EU839205]	97	soils blended with sand	<input type="checkbox"/> Proteobacteria
	SM4.1-S.47 [KJ454423]	<i>Paenibacillus</i> sp. MN8-13 [JQ396606]	97	Arctic rhizosphere	Firmicutes
	SM15.1-S.65 [KP219112]	<i>Yersinia</i> sp. R7-6 [KM819443]	99	soil	<input type="checkbox"/> Proteobacteria
	SM15.1-S.66 [KP219113]	<i>Serratia</i> sp. B37/06 strain B37/06 [LN680099]	99	soil	<input type="checkbox"/> Proteobacteria
	SM15.1-S.68 [KP219114]	Uncultured <i>Pseudomonas</i> sp. clone MEC-19 [JN680069]	98	biofilm, env.	<input type="checkbox"/> Proteobacteria
	SM15.1-S.80 [KP219122] ⁴	<i>Serratia</i> sp. MGDd10 [GU939690]	97	Aletsch glacier	<input type="checkbox"/> Proteobacteria
	SM15.1-S.81 [KP219123]	<i>Lysinibacillus fusiformis</i> strain AGE1 [KF261599]	98	cow dung	Firmicutes
	SM15.1-S.89 [KP219130]	Uncultured <i>Pseudomonas</i> sp. clone Blake1cm74 [JQ793022]	99	sediment core from arctic lake	<input type="checkbox"/> Proteobacteria
	SM15.1-S.90 [KP219131]	Uncultured bacterium clone nbt175f04 [FJ894062]	99	mice ichthyotic skin	unclassified
	SM15.1-S.93 [KF853216] ⁵	<i>Pseudomonas</i> sp. 01WB04.1-93 [FM161544]	99	karst water rivulet	<input type="checkbox"/> Proteobacteria
1-L	SM4.1-L.3 [KP219086]	Uncultured <i>Pseudoalteromonas</i> sp. clone DVPSW105 [KF756263]	91	marine sea coastal environment	<input type="checkbox"/> Proteobacteria
	SM4.1-L.5 [KP219087]	Uncultured bacterium clone LNH_1_16_12_Pumice.83457 [KM149253]	97	pumice, Argentina freshwater lake	unclassified
	SM4.1-L.16 [KJ454417]	<i>Flavobacterium</i> sp. HC4-10 [JF312996]	100	Arctic cyanobacterial mats	Bacterioidetes
	SM4.1-L.17 [KJ454418]	<i>Pedobacter steynii</i> D-13 [KF583713]	99	Glacier, Xinjiang, China	Bacterioidetes
	SM4.1-L.32 [KP219102]	<i>Carnobacterium divergens</i> strain 16MS [KJ561088]	97	fresh water fish	Firmicutes
	SM4.1-L.33 [KF853212]	<i>Arthrobacter</i> sp. o21 [AB272817]	97	permafrost ice wedge; 25,000 years	Actinobacteria
	SM4.1-L.34 [KF853221]	Bacterium 78-L049616-122-011-F10 [JX228578]	91	biological aerosol particles and ice nuclei	Firmicutes
	SM4.1-L.43 [KF853219] ⁶	Uncultured bacterium clone VS16-38 [JX257866]	95	Arctic thermal spring; calcite precipitation	unclassified
	SM15.1-L.59 [KF853208]	Bacillaceae bacterium 1914_FYM(19a) [EU273303]	93	soils from Rothamsted Broadbalk	Firmicutes

	SM15.1-L.60 [KP219110]	<i>Delftia tsuruhatensis</i> Az 9 [AM889072]	93	water and faeces, high altitude wetland	<input type="checkbox"/> Proteobacteria
	SM15.1-L.70 [KP219115]	Uncultured bacterium clone NA_R20_B11 [KF161036]	98	Great Salt Lake, UT	<input type="checkbox"/> Proteobacteria
	SM15.1-L.82 [KP219124]	Bacterium C0475-B0900 [KP177353]	99	hydrocarbon-contaminated soil	unclassified
	SM15.1-L.94 [KP219132]	Uncultured <i>Pseudomonas</i> sp. clone S2-261 [HM012019]	86	soil	<input type="checkbox"/> Proteobacteria
400-O	SM4.400-O.6 [KP219088]	Uncultured bacterium clone LNH_12_1_11_Pumice. [KM137172]	93	lake in Argentina	unclassified
	SM4.400-O.7 [KP219089]	Uncultured bacterium clone E-F9-27F 16S [KJ404679]	99	Saharan dust in a high mountain lake	unclassified
	SM4.400-O.30 [KF853210]	Uncultured bacterium clone TE-3-B1 [JQ337232]	88	environmental sample	Firmicutes
	SM4.400-O.31 [KJ454421]	Uncultured bacterium clone gls162 [KC286749]	96	glaciers China; snow pits	Firmicutes
	SM4.400-O.41 [KP219106]	<i>Pseudomonas</i> sp. Z1S-16 [FJ784612]	96	endophytic bacteria from pine trees	<input type="checkbox"/> Proteobacteria
	SM4.400-O.42 [KF853211]	<i>Bacillus</i> sp. SS14.32 [KC160801]	93	coastal sediments; Antarctica	Firmicutes
	SM15.400-O.62 [KJ454424]	Uncultured bacterium clone GE1::G9RA0RH03HCGUA [JX798918]	99	Lava Caves	Firmicutes
	SM15.400-O.71 [KP219108]	Uncultured bacterium isolate Mineral.top.2.1.6_307001 [LN548368]	94	sand and water	unclassified
	SM15.400-O.72 [KP219109]	Uncultured bacterium clone AAE4 [AY692237]	96	environmental sample	unclassified
	SM15.400-O.83 [KP219125]	Uncultured <i>Pseudomonas</i> sp. lzm2-1 [HE608820]	92	pit mud	<input type="checkbox"/> Proteobacteria
	SM15.400-O.96 [KF853218] ⁷	<i>Rahnella</i> sp. 01WB04.1-77 [FM161540]	99	karst water rivulet	<input type="checkbox"/> Proteobacteria
900-O	SM4.900-O.9 [KP219090]	Uncultured bacterium clone 50p12_2308 [FJ935103]	99	maple sap microbiota	unclassified
	SM4.900-O.10 [KP219091] ⁸	Uncultured bacterium clone 081028-OL-KR13:1-11 [FJ851557]	98	pumped borehole groundwater	unclassified
	SM4.900-O.11 [KP219092]	<i>Pseudomonas</i> sp. C3-5 [KM819219]	89	soil	<input type="checkbox"/> Proteobacteria
	SM4.900-O.12 [KP219093]	Uncultured bacterium clone E55 [JF428958]	98	potassium-rich soil	unclassified
	SM4.900-O.19 [KP219095]	Uncultured bacterium clone GTM1017f09 [JN600601]	94	microbial mat from lava tube wall	unclassified
	SM4.900-O.20 [KP219096]	Uncultured bacterium clone S11 [HM635808]	91	subglacial sediment	unclassified
	SM4.900-O.21 [KJ454419]	<i>Flavobacterium</i> sp. CGMCC 1.11109 [JX290508]	99	glaciers in China	Bacteroidetes
	SM4.900-O.23 [KP219098]	Uncultured bacterium isolate 17-1 [GQ351479]	80	soil, Shennongjia Mountains, China	unclassified
	SM4.900-O.29 [KP219101]	Uncultured <i>Pseudomonas</i> sp. clone 10 [JF724052]	99	diesel-oil contaminated Antarctic soil	<input type="checkbox"/> Proteobacteria
	SM4.900-O.40 [KJ45442]	<i>Sporosarcina</i> sp. KOPRI 25430 [GU062559]	98	Arctic terrestrial & marine environments	Firmicutes
	SM4.900-O.103 [KF853204]	Uncultured <i>Flavobacterium</i> sp. clone MR44 [KC515615]	96	river	Bacteroidetes
	SM4.900-O.104 [KF853203]	Uncultured bacterium isolate DGGE 1e-T-Lt18 [FJ527575]	100	earthworms digestive tract bacteria	Bacteroidetes

	SM4.900-O.106 [KF853205]	Uncultured bacterium clone N1_2_2904 [JQ121332]	97	anaerobic sludge digester	unclassified
	SM15.900-O.63 [KF853209]	Bacillus sp. H-138 [KF021818]	92	marine bacteria	Firmicutes
	SM15.900-O.73 [KP219133]	Uncultured Pseudomonas sp. clone 24 [JF724057]	100	Antarctic soil	☐Proteobacteria
	SM15.900-O.74 [KP219116] ⁴	Serratia sp. MGDd10 [GU939690]	98	Aletsch glacier	☐Proteobacteria
	SM15.900-O.75 [KP219117]	Uncultured bacterium clone Toolik_Jun2005_shruborg_207 [DQ510100]	88	Arctic tundra soil	unclassified
	SM15.900-O.84 [KF853213] ³	Soil bacterium 5V-07 [EU839205]	99	soils blended with spent foundry sand	☐Proteobacteria
	SM15.900-O.85 [KP219126]	Uncultured Pseudomonas sp. clone E11H [JF777050]	95	marine sediment	☐Proteobacteria
	SM15.900-O.86 [KP219127]	Uncultured bacterium clone 1-11-11-28 [KJ613137]	91	cave drip water	unclassified
	SM15.900-O.98 [KF853206] ⁷	Rahnella sp. 01WB04.1-77 [FM161540]	99	karst water rivulet	☐Proteobacteria
900-I	SM4.900-I.13 [KP219094] ⁸	Uncultured bacterium clone 081028-OL-KR13:1-11 [FJ851557]	97	groundwater in the pumped borehole	inclassified
	SM4.900-I.25 [KP219099]	Uncultured bacterium clone BFM134X3FRf02 [JF696459]	94	stream biofilm mesocosm	unclassified
	SM4.900-I.26 [KJ454420]	Uncultured bacterium clone Eur3Bac2.29 [EU218783]	97	permafrost/ ice core, Canadian high Arctic	Bacterioidetes
	SM4.900-I.28 [KP219100]	Uncultured bacterium clone EMIRGE_OTU_s7t4e_2141 [JX224725]	86	subsurface aquifer sediment	unclassified
	SM4.900-I.39 [KP219105]	Paenibacillus sp. G03 45-14 [KF974300]	99	permafrost-affected soils	Firmicutes
	SM15.900-I.64 [KP219111] ¹	Pseudomonas sp. 7029 [AM111029]	95	deep sea sediment	☐Proteobacteria
	SM15.900-I.76 [KP219118]	Uncultured Pseudomonas sp. clone L6B-518 [GU000357]	95	lake sediment from Antarctica	☐Proteobacteria
	SM15.900-I.77 [KP219119]	Uncultured bacterium clone LNH_9_9_11_Pumice.250697 [KM126330]	90	env. Argentina: Lake Naheul Huapi	unclassified
	SM15.900-I.78 [KP219120]	Uncultured Bacteroidetes bacterium clone MEf05b11G3 [FJ828151]	92	env. eutrophic lake	Bacteroidetes
	SM15.900-I.79 [KP219121]	Pseudomonas fluorescens isolate rGp14 [AJ971392]	100	root, ectomycorrhiza of Pinus sylvestris	☐Proteobacteria
	SM15.900-I.87 [KP219128]	Environmental 16s rDNA sequence Evry wastewater [CU466837]	91	env. anoxic basin	☐Proteobacteria
	SM15.900-I.88 [KP219129]	Uncultured bacterium clone nbt129e09 [FJ894352]	93	env. mice exhibit ichthyotic skin	unclassified
	SM15.900-I.99 [KF853214] ³	Soil bacterium 5V-07 [EU839205]	99	soils blended with spent foundry sand	☐Proteobacteria
	SM15.900-I.100 [KJ454425]	Uncultured Pseudomonas sp. clone 20 [AY881672]	100	endophytes wildflower Crocus albiflorus	☐Proteobacteria
	SM15.900-I.101 [KF853220] ⁶	Uncultured bacterium clone VS16-38 [JX257866]	98	Arctic thermal spring; calcite precipitation	Firmicutes
	SM15.900-I.102 [KF853215] ⁵	Pseudomonas sp. 01WB04.1-93 [FM161544]	99	karst water rivulet	☐Proteobacteria

Identical OTUs are marked with the same number (1-7); Sequence code indicates the growth temperatures (4°C or 15°C), ice sample (1-S, 1-L, 400-O, 900-O, 900-I, and DGGE band number (Fig. 6); (*): same sample cultivated in different growth media (Fig. 6).