

S1 Table. Characteristics of investigated species.

genus, species, strain/cell line	cell envelope characteristics	habitat or tissue	main known compatible solutes ( <i>de novo</i> synthesis induced upon osmotic stress; excluding compounds only taken up from environment)	main isoprenoid quinone <sup>a</sup>	source or reference
<i>Homo sapiens</i> HDF	No cell wall	Primary neonatal dermal fibroblast cells	sorbitol, inositol, betaine, taurine, glycerophosphocholine [1]	Q10 [2]	Cell Applications Inc., catalog # 106-05n
<i>Homo sapiens</i> MCF7	No cell wall	Epithelial breast cancer cell line	sorbitol, inositol, betaine, taurine, glycerophosphocholine [1]	Q10 [2]	DSMZ # ACC 115
<i>Saccharomyces cerevisiae</i> strain Sa-07140	Glucan, mannan, chitin in cell wall	Surface of plants and ripening fruit	glycerol [3], trehalose [4]	Q6 [5]	DSMZ # 70449
<i>Schizosaccharomyces pombe</i> strain 975	Glucan, galactomannan, chitin in cell wall	Surface of plants and ripening fruit	glycerol [6]	Q10 [5]	DSMZ # 70577
<i>Mycobacterium smegmatis</i> strain GA 735	Gram-positive, mycolic acids (acid-fast)	Aquatic environments, human skin	ectoine, hydroxyectoine [7]	K9 [8]	DSMZ # 43756
<i>Corynebacterium glutamicum</i> strain 534	Gram-positive, mycolic acids	Soil, water, surface of plants	proline [9], trehalose [10]	K9 [8]	DSMZ # 20300
<i>Bacillus subtilis</i> strain 168	Gram-positive	Soil	proline [11]	K7 [8]	DSMZ # 23778
<i>Lactobacillus casei</i> strain 03, 7	Gram-positive	Milk, water	none [12]	K <sup>b</sup> [8]	DSMZ # 20011
<i>Agrobacterium tumefaciens</i> strain EX 3.24.2 (L 624)	Gram-negative	Soil, plant surface	mannosucrose [13]	Q10 [8]	DSMZ # 30147
<i>Sinorhizobium meliloti</i> strain 3D0a2	Gram-negative	Soil, plant roots, plant nodules	glutamate [14], N-acetyl-glutaminylglutamate [15]	Q10 <sup>c</sup> [16]	DSMZ # 30135
<i>Paracoccus versutus</i> strain A2	Gram-negative	Mud, soil	<i>no relevant publications found</i>	Q10 [17]	DSMZ # 582
<i>Rhodobacter sphaeroides</i> strain ATH 2.4.1	Gram-negative	Deep lakes, stagnate waters	trehalose [18]	Q10 [8]	DSMZ # 158
<i>Zymomonas mobilis</i> strain IMG 1655	Gram-negative	Plant saps, soil	sorbitol [19]	Q10 [20]	DSMZ # 424
<i>Escherichia coli</i> strain BW25113	Gram-negative	Gastrointestinal tract of mammals	trehalose [21], glutamate [22]	Q8 [8]	[23]
<i>Pseudomonas fluorescens</i> biovar I (742)	Gram-negative	Soil, water, surface of plants	glutamate, N-acetyl-glutaminylglutamine amide, trehalose [15]	Q9 [8]	DSMZ # 50090
<i>Pseudomonas putida</i> strain 90	Gram-negative	Soil	N-acetyl-glutaminylglutamine amide, mannitol [24]	Q9 [8]	DSMZ # 291

<sup>a</sup>Q, ubiquinone; K, menaquinone. Numbers indicate subunit count of isoprenyl chain

<sup>b</sup>Length of isoprenyl chain unknown

<sup>c</sup>Inferred from quinone composition of two related species of the genus *Sinorhizobium*

## S1 Table References

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