

Additional file 1 – Differential phenotypic characteristics of *Salinispira pacifica* strain L21-RPul-D2^T and type strains of the phylogenetically closest related *Spirochaeta* species, as well as *S. halophila* and *S. smaragdinae*.

Characteristic	<i>Salinispira pacifica</i>	<i>S. africana</i>	<i>S. asiatica</i>	<i>S. dissipatitrophica</i>	<i>S. halophila</i>	<i>S. smaragdinae</i>
Cell width [µm]	0.20-0.25	0.25-0.30	0.20-0.25	0.25-0.30*	0.4	0.3-0.5
Cell length [µm]	8-9	15-30	15-22	8-18	15-30	5-30
Pigmentation	+	+	-	+	+	ND
DNA G + C content [mol%]	51.9	57.8	49.2	43.8	62.0	50
Temperature for growth [°C]						
Range	20-45	15-47	20-43	13-41	25-45	20-40
Optimum	35	30-37	33-37	35	35-40	37
NaCl conc. for growth [g l ⁻¹]						
Range	20-150	30-100	20-80	10-30	3-73	10-100
Optimum	50	50-70	30-60	20	44	50
pH for growth						
Range	6.5-8.4	8.1-10.7	7.9-9.7	7.8-10.5	ND	5.5-8.0
Optimum	6.9-7.0	8.8-9.8	8.4-9.4	10.0	7.5	7.0
Aerotolerance	+	+	-	-	+	-
Oxygen respiration	-	-	-	-	+	-
Catalase	-	_*	_*	-	-	ND
Nitrate reduction	-	_*	_*	_*	+	ND
Vitamin requirement	-	+	+	+	ND	-
Yeast extract requirement	+	-	+	-	+	+
Utilization of:						
Casamino acids	-	-	-	+	-	-
Citrate	-	_*	_*	+	ND	ND
Fumarate	+	_*	_*	_*	-	+
L-Lactate	-	_*	_*	-	-	-
Pyruvate	+	_*	_*	-	-	-
N-Acetylglucosamine	+	-	-	_*	ND	ND
D-Arabinose	-	-	(+)	+	+	-
Cellobiose	-	+	+	+	+	ND
D-Fructose	+	+	-	+	+	+

D-Galactose	-	-	+	+*	+	+
D-Glucose	+	+	+	+	+	+
Lactose	-	+	-	-	+	ND
D-Mannose	+	+	+	-	+	+
D-Ribose	-	-	-	+	+	+
Sucrose	-	+	+	+	+	-
D-Trehalose	+	+	+	+	+	ND
D-Xylose	-	+	(+)	+*	+	+
Starch	+	+	+	+	+	ND
Glycerol	-	-*	-*	-	-	+
Ethanol	-	-*	-*	-	-	ND
D-Mannitol	-	-	+	+	-	+
Fermentation products						
Hydrogen	+	+	-	+	+	+
Ethanol	+	+	+	+	+	+
Acetate	+	+	+	+	+	-
Lactate	+	+	+	+*	+	+

+, positive; -, negative; (+), weakly positive; *, results obtained in this study; ND, no data available.

Strains and sources of data: *Salinispira pacifica* L21-RPul-D2^T (this study); *S. africana* Z-7692^T [59]; *S. asiatica* Z-7591^T [59]; *S. dissipatitropha* ASpC2^T [60]; *S. halophila* RS-1^T [61]; *S. smaragdinae* SEBR 4228^T [62].