



Fig. S1. Change in water loss rate (WLR) with time along desiccation exposure in the experiment testing the effect of salinity on desiccation resistance. OS, optimum salinity; SLS, sublethal salinity.

Table S1. Experiment 1: Effect of salinity on desiccation resistance

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Table S2. Experiment 2: Effect of desiccation on salinity tolerance (survival)

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Table S3. Experiment 2: Effect of desiccation on salinity tolerance (osmoregulation capacity)

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Table S4. GLM results on the differences in mean, maximum and final water loss rate under desiccation between salinity pre-treatments, and influence of individuals' initial fresh mass and sex.

Species	Variable	Predictors	Slope ± s.e.m	df	F-statistic	Explained deviance (%)
<i>E. jesusarribasi</i>	WLR_{mean}	Intercept	0.042 ± 0.030			
		Pre-treatment: SLS	-0.011 ± 0.008	1	0.182	13.4
		M_s	0.010 ± 0.004**	1	8.537**	
		Sex (male)	-0.005 ± 0.008	1	0.392	
	WLR_{max}	Intercept	0.026 ± 0.028			
		Pre-treatment: SLS	-0.007 ± 0.008	1	0.051	20.5
		M_s	0.012 ± 0.004**	1	13.844***	
		Sex (male)	-0.007 ± 0.008	1	0.871	
	WLR_f	Intercept	0.053 ± 0.030			
		Pre-treatment: SLS	-0.011 ± 0.008	1	0.289	11.2
		M_s	0.009 ± 0.004*	1	6.794*	
		Sex (male)	-0.005 ± 0.008	1	0.345	
<i>N. baeticus</i>	WLR_{mean}	Intercept	0.216 ± 0.071**			
		Pre-treatment: SLS	-0.039 ± 0.016*	1	5.642*	13.8
		M_s	0.008 ± 0.011	1	0.250	
		Sex (male)	-0.019 ± 0.012	1	1.465	

WLR_{\max}	Intercept	0.130 ± 0.120	7.7
	Pre-treatment: SLS	-0.017 ± 0.027	
	M_s	0.032 ± 0.018	
	Sex (male)	-0.034 ± 0.026	
WLR_f	Intercept	$0.274 \pm 0.076^{***}$	13.4
	Pre-treatment: SLS	$-0.036 \pm 0.017^*$	
	M_s	-0.003 ± 0.012	
	Sex (male)	-0.020 ± 0.017	

Significance levels: * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$

SLS: sublethal salinity; WLR, water loss rate [mean, final (f) and maximum]; M_s , initial fresh mass.

Table S5. GLM results on variation in water loss and final water content between desiccation pre-treatments and influence of individuals' initial fresh mass and sex.

Species	Variable	Predictors	Slope ± s.e.m	df	F-statistic	Explained deviance (%)
<i>E. jesusarribasi</i>	WLR	Intercept	-0.136 ± 0.068*			
		Pre-treatment: RD	0.246 ± 0.021***	2	68.252***	
		Pre-treatment: SD	0.125 ± 0.021***			
		M ₀	0.023 ± 0.008**	1	8.966**	71.1
		Sex (male)	0.004 ± 0.018	1	0.059	
	WC _d	Intercept	0.618 ± 0.367			
		Pre-treatment: RD	-0.446 ± 0.113***	2	71.626***	
		Pre-treatment: SD	-1.524 ± 0.166***			
		M ₀	0.543 ± 0.043***	1	184.731***	84.8
		Sex (male)	-0.005 ± 0.100	1	0.003	
<i>N. baeticus</i>	WLR	Intercept	-0.150 ± 0.110			
		Pre-treatment: RD	0.303 ± 0.034***	2	38.531***	
		Pre-treatment: SD	0.171 ± 0.033***			
		M ₀	0.048 ± 0.016**	1	8.464**	53.4
		Sex (male)	-0.014 ± 0.026	1	0.292	
	WC _d	Intercept	1.314 ± 0.493**			
		Pre-treatment: RD	-0.746 ± 0.147***	2	28.524***	
		Pre-treatment: SD	-0.771 ± 0.147***			56.1

M ₀	0.450 ± 0.073***	1	39.990***
Sex (male)	-0.158 ± 0.119	1	1.770

Significance levels: *P < 0.05; **P < 0.01; ***P < 0.001

RD: rapid desiccation, SD: slow desiccation; WLR, water loss rate; WC_d, water content after desiccation, M₀, initial fresh mass