Electronic Supplementary Material (ESI) for Green Chemistry.

Supplementary Information

Table S1. Ordinary one-way multiple comparisons ANOVA test with a single pooled variance for studied DES in *A. fischeri*.

p* values in *A. fischeri														
	ChCl-000	**ChCl-100**	**ChCl-200**	**ChCl-300**	**ChCl-3F00**	**ChCl-3i00**	**ChCl-400**	**N00Cl-000**	**N00Cl-100**	**N00Cl-200**	**N00Cl-300**	**N00Cl-3F00**	**N00Cl-3i00**	**N00Cl-400**
ChCl-000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ChCl-000	p< 0.0001	-	-	-	-	-	-	-	-	-	-	-	-	-
ChCl-000	p< 0.0001	p< 0.0001	-	-	-	-	-	-	-	-	-	-	-	-
ChCl-200	p< 0.0001	p< 0.0001	p< 0.0001	-	-	-	-	-	-	-	-	-	-	-
ChCl-300	p< 0.0001	p< 0.0001	p= 0.0915	p= 0.0672	-	-	-	-	-	-	-	-	-	-
ChCl-3F00	p< 0.0001	p< 0.0001	p< 0.0001	p> 0.9999	p= 0.1294	-	-	-	-	-	-	-	-	-
ChCl-3i00	p< 0.0001	p< 0.0001	p< 0.0001	p= 0.9703	p= 0.0015	p= 0.6236	-	-	-	-	-	-	-	-
ChCl-400	p< 0.0001	p= 0.0215	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	-	-	-	-	-	-	-
N00Cl-000	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p= 0.1960	-	-	-	-	-	-
N00Cl-100	p< 0.0001	p< 0.0001	p< 0.0001	p= 0.9999	p= 0.1735	p> 0.9999	p= 0.5368	p< 0.0001	p< 0.0001	-	-	-	-	-
N00Cl-200	p< 0.0001	p< 0.0001	p= 0.0099	p= 0.1691	p> 0.9999	p= 0.3222	p= 0.0039	p< 0.0001	p< 0.0001	p= 0.4107	-	-	-	-
N00Cl-300	p< 0.0001	p< 0.0001	p= 0.9673	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p= 0.0002	-	-	-
N00Cl-3F00	p< 0.0001	p< 0.0001	p= 0.9034	p= 0.0017	p= 0.8960	p= 0.0024	p< 0.0001	p< 0.0001	p< 0.0001	p= 0.0035	p= 0.4105	p= 0.1562	-	-
N00Cl-3i00	p< 0.0001	p< 0.0001	p< 0.0001	p> 0.9999	p= 0.0060	p= 0.9816	p= 0.9985	p< 0.0001	p< 0.0001	p= 0.9580	p= 0.0165	p< 0.0001	p< 0.0001	-

Solvatochromic parameters of glycerol derived DES

Table S2: Solvatochromic parameters of glycerol derived DES

ChCl:DES			N00Cl:DES		
	E_T^N	a		E_T^N	a
ChCl:000	0.85	0.65	**N00Cl:000**	0.82	0.53
ChCl:100	0.79	0.62	**N00Cl:100**	0.79	0.49
ChCl:200	0.78	0.58	**N00Cl:200**	0.78	0.47
ChCl:3F00	0.81	0.76	**N00Cl:3F00**	0.81	0.68
ChCl:300	0.77	0.57	**N00Cl:300**	0.77	0.45
ChCl:3i00	0.76	0.55	**N00Cl:3i00**	0.76	0.41
ChCl:400	0.76	0.57	**N00Cl:400**	0.76	0.44

For E_T^N parameter determination, UV spectra was register from 400 to 650 nm for a solution $7.5.10^{-4}$M of Reichardt betaine in the selected DES.

E_T^N was calculated as $ETN = ET(30) - \frac{30.7}{32.4}$

$$ET(30) = \frac{28591}{\lambda} max(nm)$$

For a parameter determination, ^{13}C-NMR of a 0.5M solution of N,N-dimethylbenzyamide in the selected DES was register using d6-DMSO as solvent. Dd between the signal of orto Carbon and the Carbon of carbonyl group was used.

a parameter was calculated as follow:

$\alpha = 0.356((\delta orto - \delta CO) - 42.42 - 0.53\pi *$

For p* parameter determination, UV spectra was register from 240 to 400 nm for a solution $1.2.10^{-4}$M of *p*-nitroanisol in the selected DES.

p* was calculated as follow:

$\pi *= 14.57 - 4270/\lambda max (nm)$

Plots of log EC50 of N00Cl derived DES vs different properties

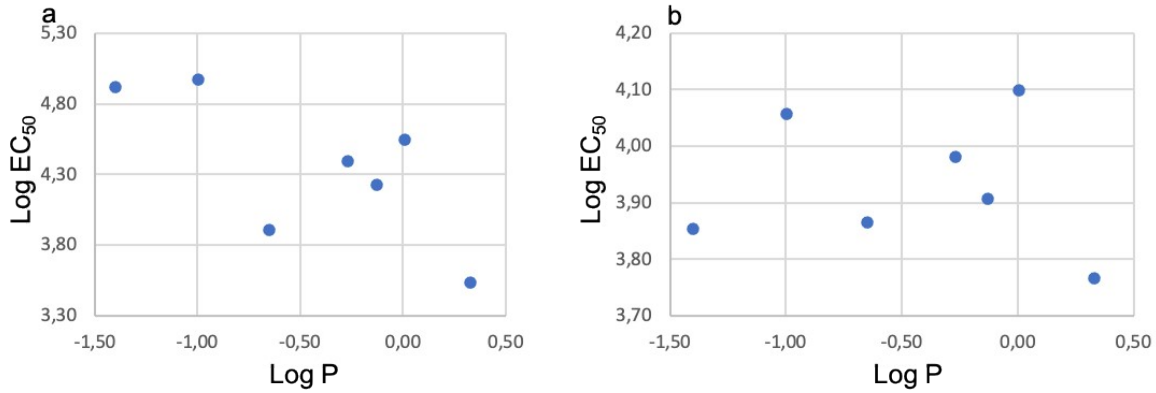

Figure S1: plot of Log EC50 versus LogP values for N00Cl derived DES. a) *Aliivibrio fischeri*; b) *R. subcapitata*

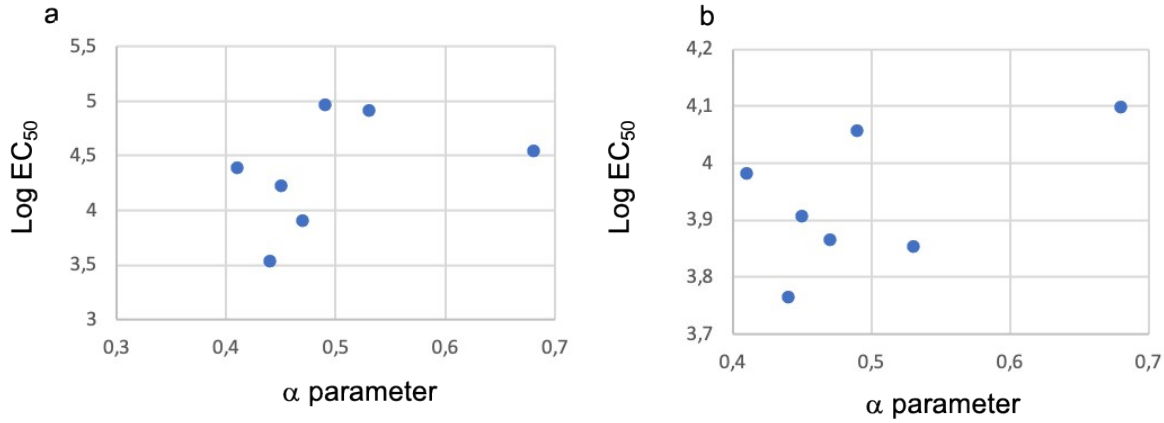

Figure S2: plot of Log EC50 versus α parameter values for N00Cl derived DES. a) *Aliivibrio fischeri* ; b) *R. subcapitata*

Table S3. Ordinary one-way multiple comparisons ANOVA test with a single pooled variance for studied DES in *R. subcapitata*

p* values in *R.subcapitata														
	ChCl-000	**ChCl-100**	**ChCl-200**	**ChCl-300**	**ChCl-3F00**	**ChCl-3i00**	**ChCl-400**	**N00Cl-000**	**N00Cl-100**	**N00Cl-200**	**N00Cl-300**	**N00Cl-3F00**	**N00Cl-3i00**	**N00Cl-400**
ChCl:000	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ChCl:100	p< 0.0001	-	-	-	-	-	-	-	-	-	-	-	-	-
ChCl:200	p< 0.0001	p< 0.0001	-	-	-	-	-	-	-	-	-	-	-	-
ChCl:300	p< 0.0001	p=0.3033	p< 0.0001	-	-	-	-	-	-	-	-	-	-	-
ChCl:3F00	p< 0.0001	p< 0.0001	p>0.9999	p< 0.0001	-	-	-	-	-	-	-	-	-	-
ChCl:3i00	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	-	-	-	-	-	-	-	-	-
ChCl:400	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	-	-	-	-	-	-	-	-
N00Cl:000	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p=0.0246	p< 0.0001	-	-	-	-	-	-	-
N00Cl:100	p< 0.0001	p< 0.0001	p=0.5183	p< 0.0001	p=0.8214	p< 0.0001	p=0.5368	p< 0.0001	-	-	-	-	-	-
N00Cl:200	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p=0.0771	p=0.0039	p>0,9999	p< 0.0001	-	-	-	-	-
N00Cl:300	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p=0.9526	p< 0.0001	p=0.4744	p< 0.0001	p=0.7852	-	-	-	-
N00Cl:3F00	p< 0.0001	p< 0.0001	p>0.9999	p< 0.0001	p=0.09968	p< 0.0001	p< 0.0001	p< 0.0001	p=0.2054	p< 0.0001	p< 0.0001	-	-	-
N00Cl:3i00	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p=0.4798	p=0.9985	p< 0.0001	p=0.032	p=0.0002	p=0.025	p< 0.0001	-	-
N00Cl:400	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p< 0.0001	p=0.2789	p=0.0763	p< 0.0001	p=0.0244	p=0.0002	p< 0.0001	p< 0.0001	-