Ait Kaci, N., Quinquiry, B., Diot, A., Yobregat, O., Pellegrino, A., Maury, P., & Chervin, C. (2025). Potential of ethanol to reduce grapevine transpiration. *OENO One*, *59*(1).
https://doi.org/10.20870/oeno-one.2025.59.1.8445

SUPPLEMENTARY DATA

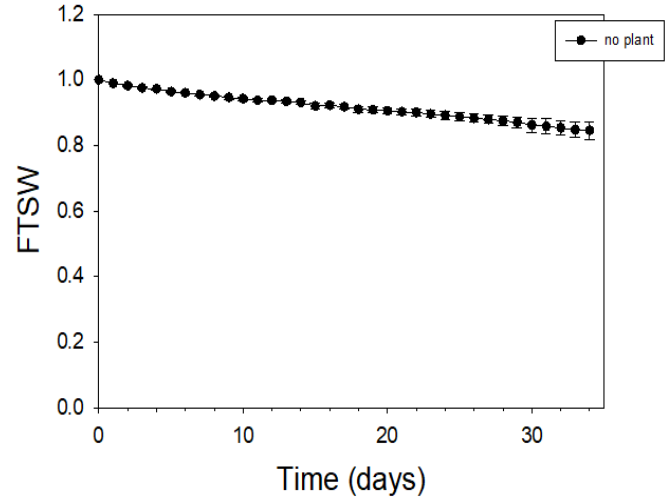


Figure S1. Variation of FTSW over time in pots without plants, n = 8 pots, error bars show SE.

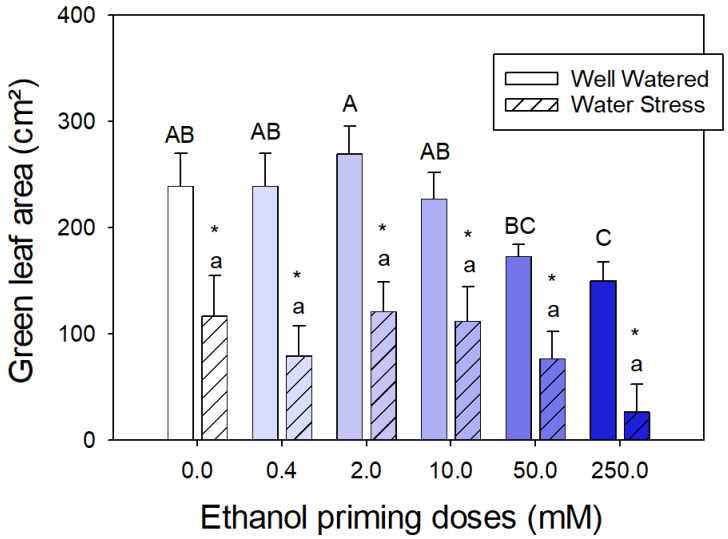


Figure S2. Impact of ethanol (EtOH) priming on green leaf area per plant at harvest, n = 7 plants, error bars show SE. Multiple comparisons details in Supp. Table S6. Capital letters to compare within WW, small caps to compare within WS, and * shows $p < 0.05$ when comparing water deficit effect within a similar EtOH dose.

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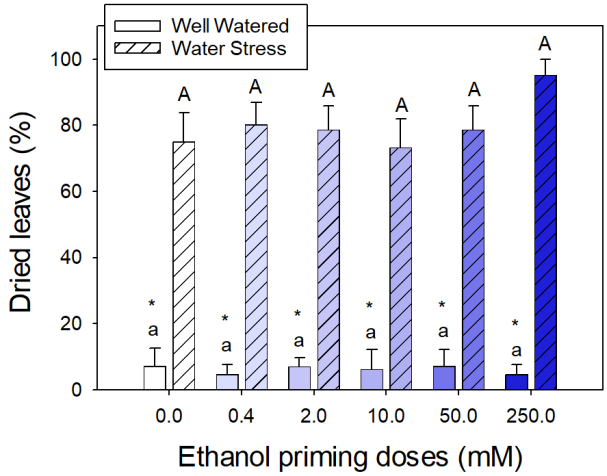


Figure S3. Impact of ethanol (EtOH) priming on the % of dry leaves per plant at harvest, n = 7 plants, error bars show SE. Multiple comparisons details in Supp. Table S7, * shows $p < 0.05$ in all comparisons of water deficit effect within each EtOH dose.

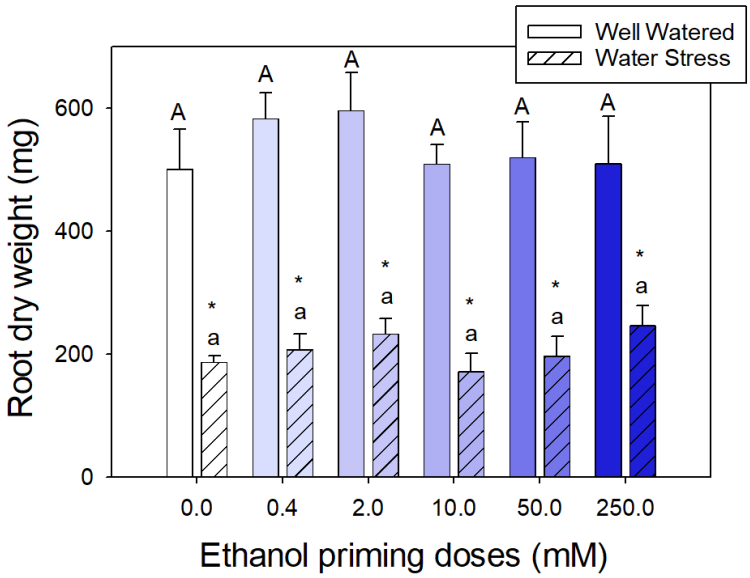


Figure S4. Impact of ethanol (EtOH) priming on the root dry weight per plant at harvest, n = 7 plants, error bars show SE. Multiple comparisons details in Supp. Table S8, * shows $p < 0.05$ in all comparisons of water deficit effect within each EtOH dose.

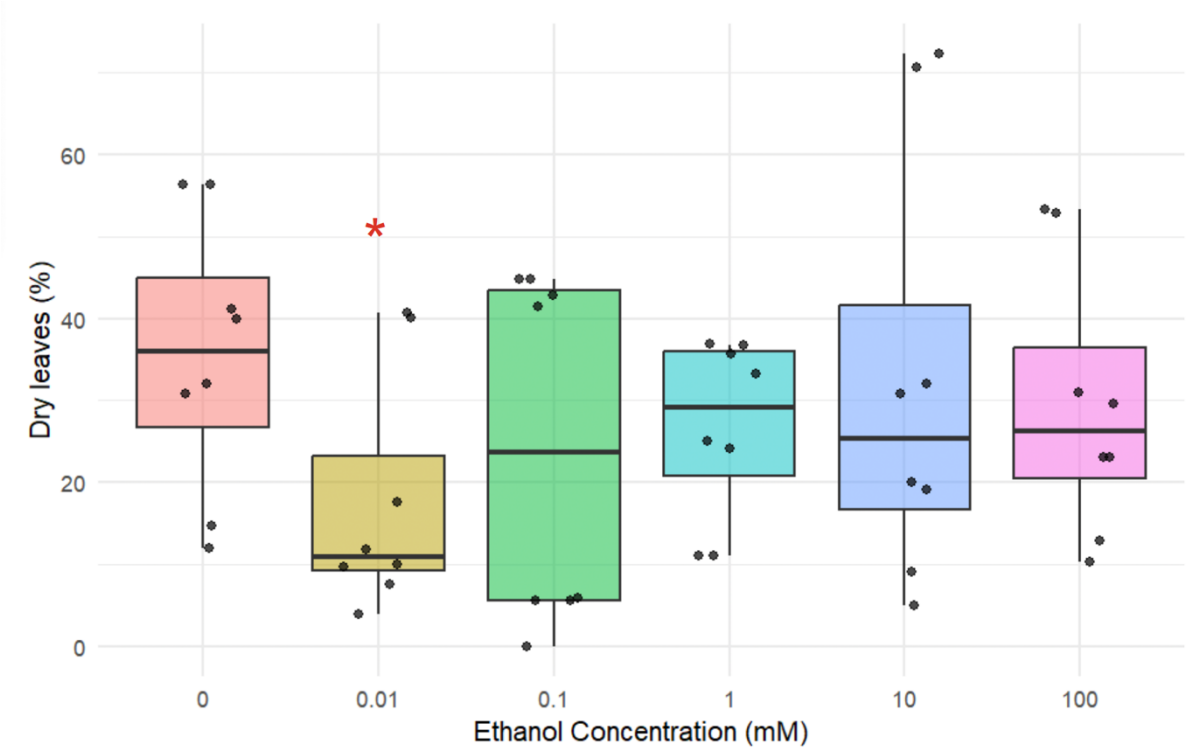


Figure S5. Effects of ethanol priming on Gamay one-node cuttings with bare roots (preliminary study). One-month-old cuttings were primed with EtOH at various concentrations for 24h, then left without water for 38h, then assessed for dry leaves one week after rewatering; 8 biological replicates per concentration. The red asterisk (*) indicates a statistically significant difference ($p < 0.05$) compared to the control group (0), as determined by a t-test.

Methods of the preliminary experiment (Supp. Fig. S5)

One-month-old cuttings, at the same developmental stage as those transplanted into pots with soil (main experiment), were used for this preliminary study. The water was removed from the plastic crates, and 150 ml of freshly prepared ethanol solutions at varying concentrations were added to the crates. The cuttings were left in the solutions for 24 hours to undergo ethanol priming. Next, all ethanol solutions were removed, and the cuttings were left without water for 38 hours. This duration, determined through preliminary trials, was sufficient to induce 40–50% dry leaves one week after re-watering. Following this period of "sudden and severe drought," 150 ml of water was added to each crate, and the cuttings were allowed to recover in a controlled growth chamber. The percentage of dry leaves was evaluated one week later, based on assessments of six cuttings per replicate. Each treatment included eight replicates of six cuttings, resulting in a total of 48 cuttings per treatment and 288 cuttings for the entire experiment.

The boxplot graph was made with the “ggplot2” package in R, using “geom_boxplot” and “geom_jitter” functions.

SUPPLEMENTARY DATA
Ait Kaci, N., Quinquiry, B., Diot, A., Yobregat, O., Pellegrino, A., Maury, P., & Chervin, C. (2025). Potential of ethanol to reduce grapevine transpiration. *OENO One*, *59*(1).
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Suppl. Table S1: Pairwise comparisons on data of Figure 2 (FTSW changes over time)

	WW																							
Ethanol vs Day	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
0 vs 250 mM	*0.247*	0.224	*0.083*	*0.038*	*0.05*	*0.05*	*0.05*	*0.05*	*0.083*	*0.038*	*0.065*	*0.065*	*0.021*	*0.0105*	*0.083*	*0.083*	*0.065*	*0.065*	*0.065*	*0.05*	*0.038*	*0.121*	*0.181*	*0.142*
p-values by Student's tests in normal font; Wilcoxon's test in italic font																								

	WS																	
Ethanol vs Day	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
0 vs 250 mM	*0.03*	0.027	0.007	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
p-values by Student's tests in normal font; Wilcoxon's test in italic font																		

Suppl. Table S2: Pairwise comparisons on data of Figure 3 (Transpiration) between EtOH doses within WW or WS

p-values in standard font obtained by Student's test; p-values in underlined font obtained by Welch's test; p-values in italic font obtained by Wilcoxon's test.

Day 3 — WW

Ethanol Doses	0	0.4	2	10	50	250
0	/	0.7589	0.286	0.7797	0.897	0.02259
0.4		/	0.2262	0.5822	0.6929	0.05433
2			/	0.4144	0.3995	0.01827
10				/	0.8979	0.02388
50					/	0.03202
250						/

Day 4 — WW

Ethanol Doses	0	0.4	2	10	50	250
0	/	0.6215	0.3419	0.671	0.8266	0.006006
0.4		/	0.2001	0.4113	0.8108	0.01854
2			/	0.6099	0.3119	0.006228
10				/	0.573	0.01028
50					/	0.02791
250						/

Day 3 — WS

Ethanol Doses	0	0.4	2	10	50	250
0	/	0.2338	0.6766	0.6689	0.511	0.01021
0.4		/	0.1633	0.4677	0.4915	0.02009
2			/	0.4518	0.354	0.02323
10				/	0.8413	0.02545
50					/	0.00748
250						/

Day 4 — WS

Ethanol Doses	0	0.4	2	10	50	250
0	/	0.144	*0.7789*	0.7547	0.1331	0.001323
0.4		/	*0.3969*	0.3759	0.7501	0.007758
2			/	*0.7104*	*0.366*	*0.0101*
10				/	0.3336	0.01421
50					/	0.03267
250						/

Day 5 — WW

Ethanol Doses (mM)	0	0.4	2	10	50	250
0	/	0.6983	0.4398	0.6423	0.7686	0.01084
0.4		/	0.287	0.4385	0.9341	0.02035
2			/	0.775	0.3432	0.009622
10				/	0.502	0.01554
50					/	0.02533
250						/

Day 6 — WW

Ethanol Doses (mM)	0	0.4	2	10	50	250
0	/	0.6989	0.5889	0.9182	0.9897	0.01292
0.4		/	0.3306	0.7018	0.6826	0.02442
2			/	0.4326	0.5517	0.001786
10				/	0.918	0.001882
50					/	0.00749
250						/

Day 7 — WW

Ethanol Doses (mM)	0	0.4	2	10	50	250
0	/	0.8287	0.6034	0.9291	0.9307	0.0169
0.4		/	0.4402	0.8442	0.8837	0.02672
2			/	0.4176	0.4978	0.001567
10				/	0.9836	0.0006161
50					/	0.009234
250						/

Day 5 — WS

Ethanol Doses (mM)	0	0.4	2	10	50	250
0	/	0.1934	*0.1206*	0.8449	0.1494	0.003522
0.4		/	*0.6126*	0.513	0.6615	0.03863
2			/	*0.3829*	*0.8357*	*0.4318*
10				/	0.418	0.1358
50					/	0.2732
250						/

Day 6 — WS

Ethanol Doses (mM)	0	0.4	2	10	50	250
0	/	0.8798	0.114	0.3507	0.2126	0.2236
0.4		/	0.1586	0.4444	0.2793	0.3157
2			/	0.5013	0.7892	0.5971
10				/	0.7108	0.8493
50					/	0.8232
250						/

Day 7 — WS

Ethanol Doses (mM)	0	0.4	2	10	50	250
0	/	*0.3282*	*0.3357*	*0.9551*	*0.9497*	*0.2844*
0.4		/	0.1059	0.3459	0.2316	0.7826
2			/	0.4214	0.7494	0.1175
10				/	0.6891	0.4495
50					/	0.2894
250						/

Day 8 — WW

Ethanol Doses (mM)	0	0.4	2	10	50	250
0	/	0.8414	0.5432	0.8565	0.776	0.003125
0.4		/	0.4403	0.9418	0.9494	0.01165
2			/	0.3556	0.3623	0.0006517
10				/	0.8576	0.0001306
50					/	0.004487
250						/

Day 9 — WW

Ethanol Doses (mM)	0	0.4	2	10	50	250
0	/	0.6962	0.686	0.7294	0.9967	0.02772
0.4		/	0.3871	0.9043	0.6791	0.03388
2			/	0.3725	0.6736	0.005945
10				/	0.7034	0.007816
50					/	0.02573
250						/

Day 10 — WW

Ethanol Doses (mM)	0	0.4	2	10	50	250
0	/	0.872	0.5792	0.966	0.856	0.02032
0.4		/	0.48	0.8761	0.9793	0.03331
2			/	0.4805	0.4791	*0.00596*
10				/	0.8509	0.002495
50					/	0.04622
250						/

Day 8 — WS

Ethanol Doses (mM)	0	0.4	2	10	50	250
0	/	0.192	0.3522	0.9871	0.4714	0.03434
0.4		/	0.06917	0.2377	0.1112	0.7397
2			/	0.4332	0.8963	0.007881
10				/	0.546	0.07987
50					/	0.01885
250						/

Day 9 — WS

Ethanol Doses (mM)	0	0.4	2	10	50	250
0	/	0.1677	0.282	0.7361	0.5641	0.008749
0.4		/	0.08292	0.3311	0.1524	0.542
2			/	0.3198	0.696	0.00297
10				/	0.5117	0.04245
50					/	0.005537
250						/

Day 10 — WS

Ethanol Doses (mM)	0	0.4	2	10	50	250
0	/	*0.3823*	*0.2319*	*0.9551*	*0.2824*	*0.01088*
0.4		/	*0.2319*	*0.6126*	*0.1812*	*0.09324*
2			/	*0.4557*	*0.9452*	*0.0101*
10				/	0.2909	0.05991
50					/	0.00716
250						/

SUPPLEMENTARY DATA
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https://doi.org/10.20870/oeno-one.2025.59.1.8445

Suppl. Table S3: Pairwise comparisons on data of Figure 3 (Transpiration) between WW or WS within one EtOH dose

	Day 3		Day 4		Day 5		Day 6		Day 7		Day 8		Day 9		Day 10	
WW x WS																
Ethanol	diff of means	*p*	diff of means	p	diff of means	*p*	diff of means	*p*	diff of means	*p*	diff of means	*p*	diff of means	*p*	diff of means	*p*
0 mM	0.0061	*0.624*	0.0034	*0.818*	0.0002	*0.992*	0.0084	*0.282*	0.0335	*0.002*	0.0365	<0.001	0.0533	*<0.001*	0.0546	*<0.001*
0,4 mM	0.0029	*0.824*	0.0049	*0.745*	0.0087	*0.627*	0.0061	*0.449*	0.0188	*0.089*	0.0226	0.004	0.0311	*0.005*	0.0404	*<0.001*
2 mM	0.0055	*0.674*	0.0125	*0.411*	0.0292	*0.104*	0.0279	*<0.001*	0.0507	*<0.001*	0.0479	<0.001	0.0651	*<0.001*	0.0667	*<0.001*
10 mM	0.0031	*0.814*	0.0085	*0.574*	0.0129	*0.469*	0.0157	*0.053*	0.0338	*0..003*	0.0353	<0.001	0.0463	*<0.001*	0.0503	*<0.001*
50 mM	0.0033	*0.819*	0.0119	*0.483*	0.0159	*0.425*	0.0202	*0.026*	0.0391	*0.002*	0.0394	<0.001	0.0569	*<0.001*	0.0583	*<0.001*
250 mM	0.0011	*0.939*	0.0001	*0.996*	0.0048	*0.812*	0.0040	*0.66*	0.0043	*0.73*	0.0048	0.581	0.0026	*0.829*	0.0002	*1*
	p-values obtained by Wilcoxon's tests															

Table S4. Parameters describing the normalised transpiration rate (NTR) at the whole plant level to the fraction of transpirable soil water (FTSW) variations for six ethanol (EtOH) priming doses. All fitting and calculations details are given in Material and Methods. The "a" parameter represents the curvature of the fit; FTSWt stands for FTSW threshold at which NTR maximum was reduced by 5%. R^2 is the goodness of fit. RMSE stands for root mean square error. MSE stands for mean square error. Significant differences were determined at $p < 0.05$ using pairwise comparison methods (see Material and Methods and detailed p-values in Table S4).

EtOH dose (mM)	"a"	Signif.	FTSWt	Signif.	R^2	RMSE	MSE
0	-12.02	a	0.44	a	0.95	0.095	0.009
0.4	-12.50	a	0.43	a	0.91	0.129	0.017
2	-10.96	ab	0.50	ab	0.94	0.105	0.011
10	-11.38	ab	0.50	ab	0.87	0.141	0.020
50	-12.81	a	0.41	ab	0.92	0.168	0.028
250	-8.60	b	0.67	b	0.87	0.133	0.078

Suppl. Table S5: p-values of pairwise comparisons regarding "a" and FTSWt (Figure 4). All fitting and calculations details are given in Material and Methods

coefficient "a"	0 mM	0.4 mM	2 mM	10 mM	50 mM	250 mM
0 mM	/	0.650	0.370	0.650	*0.724*	0.038
0.4 mM		/	0.26	0.48	0.805	0.040
2 mM			/	0.80	0.198	0.230
10 mM				/	0.413	0.230
50 mM					/	0.041
250 mM						/

FTSWt	0 mM	0.4 mM	2 mM	10 mM	50 mM	250 mM
0 mM	/	*0.574*	*0.280*	*1.000*	*0.941*	0.028
0.4 mM		/	0.26	0.475	0.714	0.020
2 mM			/	0.802	0.206	0.17
10 mM				/	*0.623*	0.22
50 mM					/	0.051
250 mM						/

p-values in standard font obtained by Student's test; p-values in underlined font obtained by Welch's test; p-values in italic font obtained by Wilcoxon's test.

SUPPLEMENTARY DATA
Ait Kaci, N., Quinquiry, B., Diot, A., Yobregat, O., Pellegrino, A., Maury, P., & Chervin, C. (2025). Potential of ethanol to reduce grapevine transpiration. *OENO One*, *59*(1).
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Suppl. Table S6: Pairwise comparisons on data of Supp. Figure 2 (Green Leaf Area) between EtOH doses within WW or WS

	WW					
Ethanol Doses (mM)	**0**	**0.4**	**2**	**10**	**50**	**250**
0	/	0.9977	0.4614	0.7649	0.103	0.03075
0.4		/	0.4592	0.7666	0.07529	0.03882
2			/	0.2555	0.0067	0.0025
10				/	0.1085	0.02954
50					/	0.3191
250						/
	WS					
Ethanol Doses (mM)	**0**	**0.4**	**2**	**10**	**50**	**250**
0	/	0.4445	0.9251	0.9289	0.3894	*0.2397*
0.4		/	0.3054	0.4552	0.9435	*0.3469*
2			/	0.8337	0.2577	*0.1095*
10				/	0.3988	*0.2486*
50					/	*0.2572*
250						/

between WW vs WS, within EtOH

WW x WS	
Ethanol	***p***
0 mM	0.026
0,4 mM	0.003
2 mM	0.002
10 mM	0.014
50 mM	0.011
250 mM	0.005

p-values in standard font obtained by Student's test; p-values in underlined font obtained by Welch's test; p-values in italic font obtained by Wilcoxon's test.

Suppl. Table S7: Pairwise comparisons on data of Supp. Figure 3 (% dried leaves) between EtOH doses within WW or WS

	WW					
Ethanol Doses (mM)	**0**	**0.4**	**2**	**10**	**50**	**250**
0	/	*0.9351*	*0.4984*	*0.7403*	*0.8713*	*0.9351*
0.4		/	*0.599*	*0.6282*	*0.9233*	*0.99*
2			/	*0.2952*	*0.8255*	*0.599*
10				/	*0.6291*	*0.6282*
50					/	*0.9233*
250						/
	WS					
Ethanol Doses (mM)	**0**	**0.4**	**2**	**10**	**50**	**250**
0	/	0.6421	0.7548	0.8899	0.7548	*0.09923*
0.4		/	0.8701	0.5326	0.8701	*0.1133*
2			/	0.6409	0.99	*0.0713*
10				/	0.6409	*0.0527*
50					/	*0.0713*
250						/

between WW vs WS, within EtOH

WW x WS	
Ethanol	***p***
0 mM	< 0.001
0,4 mM	< 0.001
2 mM	< 0.001
10 mM	< 0.001
50 mM	< 0.001
250 mM	*0.002*

p-values in standard font obtained by Student's test; p-values in underlined font obtained by Welch's test; p-values in italic font obtained by Wilcoxon's test.

Suppl. Table S8: Pairwise comparisons on data of Supp. Fig. S4 (root dry weight) between EtOH doses within WW or WS

	WW					
Ethanol Doses (mM)	**0**	**0.4**	**2**	**10**	**50**	**250**
0	/	*0.9351*	*0.4984*	*0.7403*	*0.8713*	*0.9351*
0.4		/	*0.599*	*0.6282*	*0.9233*	*0.99*
2			/	*0.2952*	*0.8255*	*0.599*
10				/	*0.6291*	*0.6282*
50					/	*0.9233*
250						/
	WS					
Ethanol Doses (mM)	**0**	**0.4**	**2**	**10**	**50**	**250**
0	/	0.6421	0.7548	0.8899	0.7548	*0.09923*
0.4		/	0.8701	0.5326	0.8701	*0.1133*
2			/	0.6409	0.99	*0.0713*
10				/	0.6409	*0.0527*
50					/	*0.0713*
250						/

between WW vs WS, within EtOH

WW x WS	
Ethanol	***p***
0 mM	< 0.001
0,4 mM	< 0.001
2 mM	< 0.001
10 mM	< 0.001
50 mM	< 0.001
250 mM	*0.002*

p-values in standard font obtained by Student's test; p-values in underlined font obtained by Welch's test; p-values in italic font obtained by Wilcoxon's test.