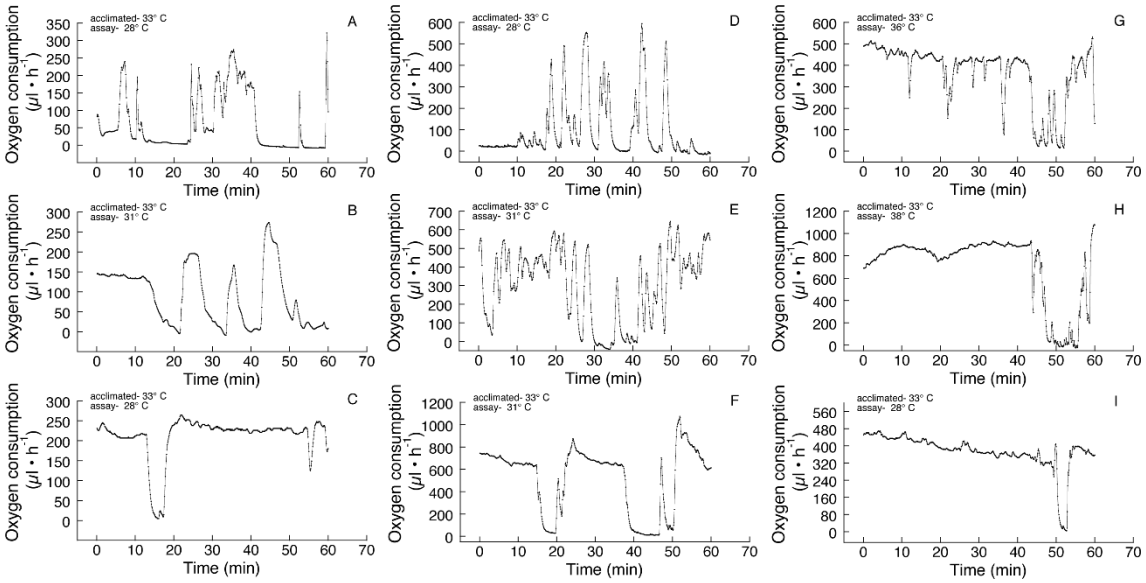


**Fig. S1.** Representative traces from fish showing paradoxical anaerobism of varying durations and periods. Note the range of assay temperatures. Traces for D, G, and H were not corrected for the minimal electrode drift. All other traces were corrected for electrode drift (5.9 ± 0.6% drift for the 6 corrected traces).

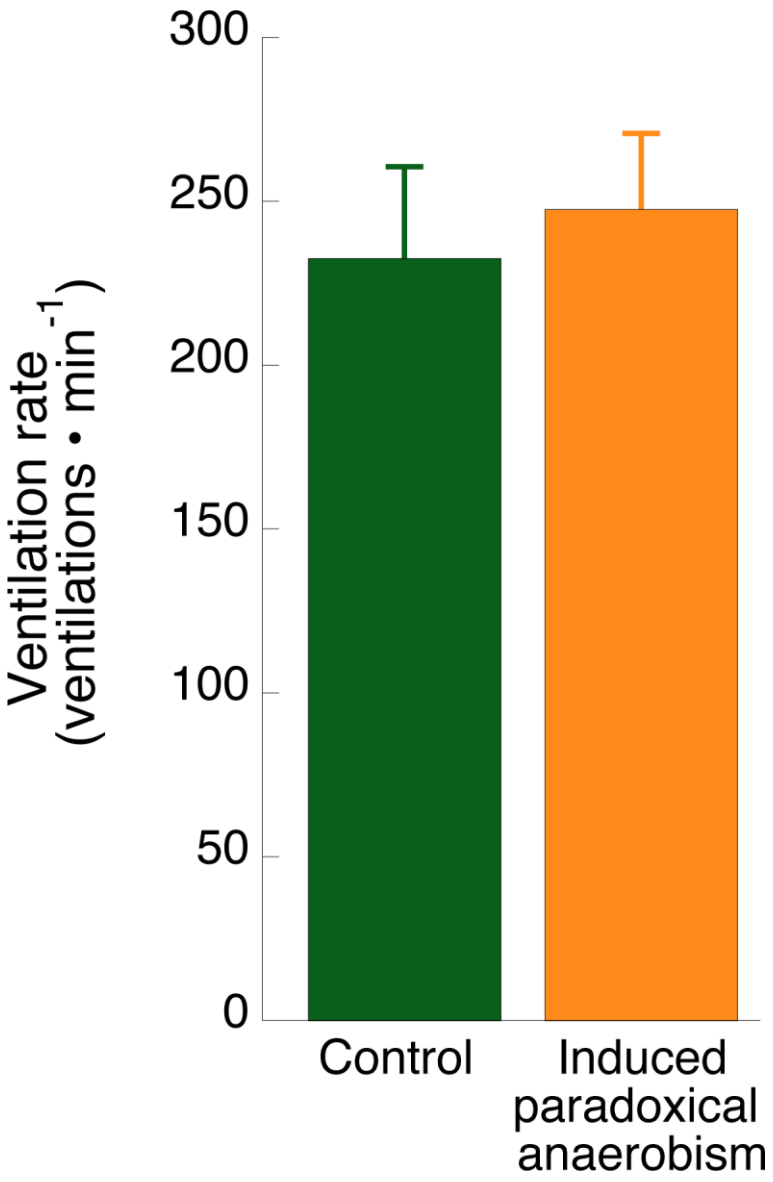


**Fig. S2.** Ventilation rates for 33°C acclimated fish (n = 4) demonstrating stable $O_2$ consumption rates (control) and after the induction of paradoxical anaerobism by 2% ethanol. There was no difference between ventilation rates during periods of stable and paradoxical anaerobism (paired t-test; $p > 0.05$).

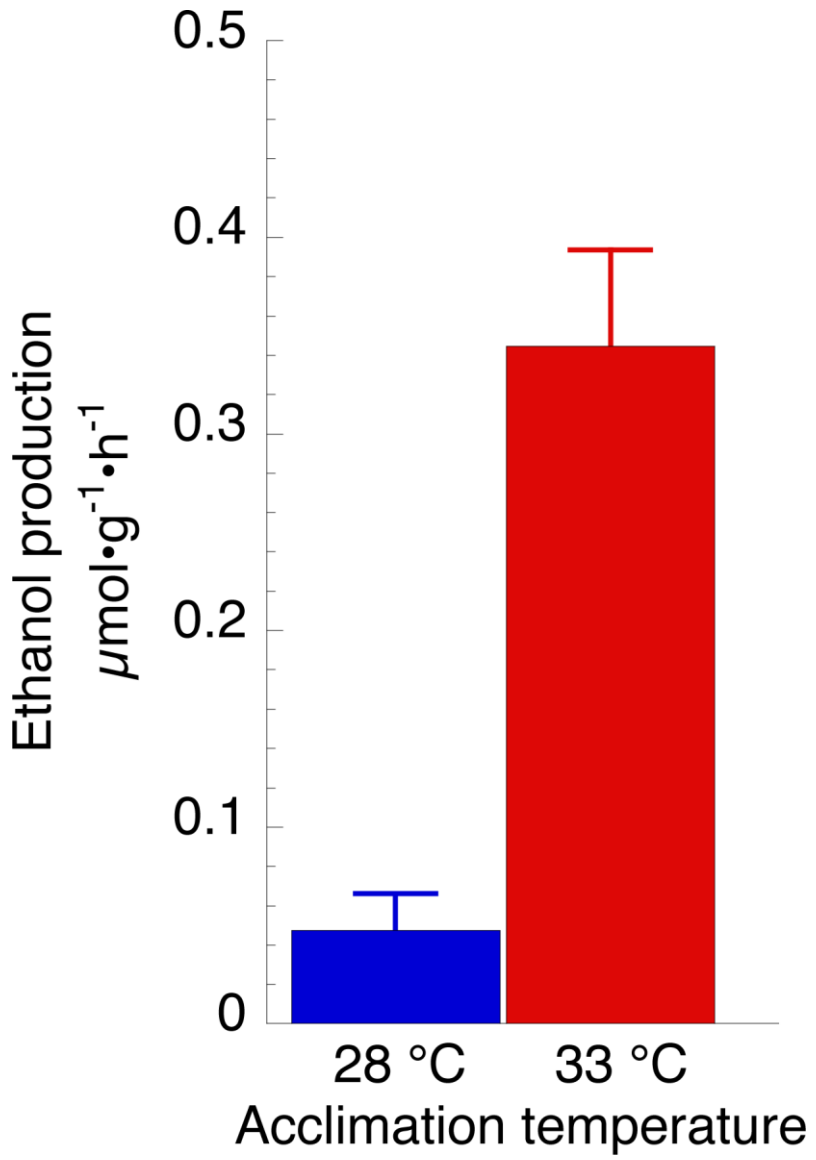


**Fig. S3.** Fish acclimated to 33°C produced 7.3-fold more ethanol than fish acclimated to 28°C (unpaired t-test; $p < 0.05$; $n = 9$ fish at each temperature).

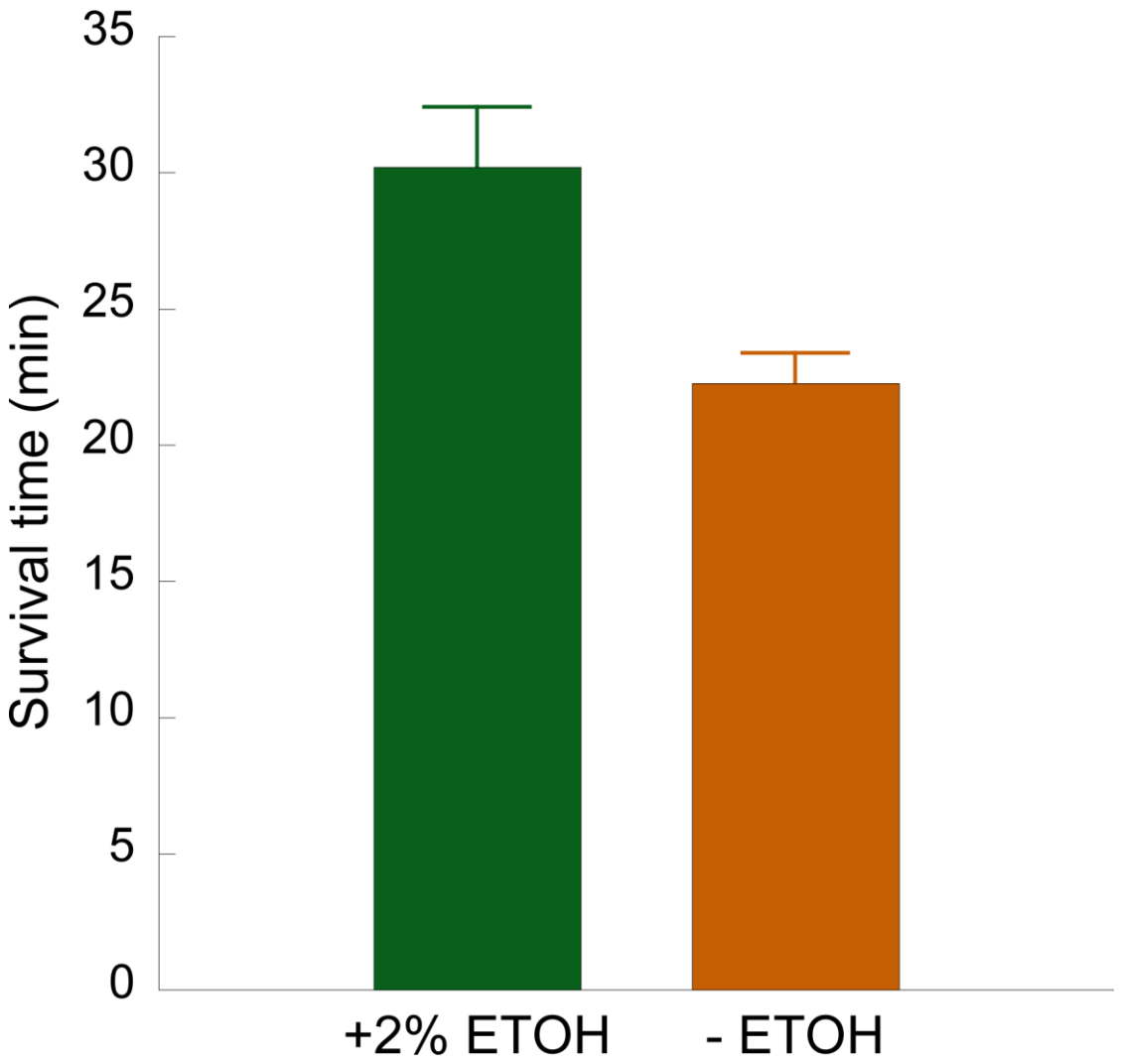


**Fig. S4.** Survival of anoxia. Fish acclimated to 33°C were exposed to water ± 2% ethanol and bubbled with $N_2$. Fish exposed to ethanol are presumed to have entered paradoxical anaerobism based on the results of Table 1. Nominal anoxia was confirmed using an oxygen electrode. Fish exposed to ethanol survive 35.6% longer in $N_2$ induced anoxia (unpaired t-test; $p < 0.05$; $n = 10$ per group).