



### Phenylhydrazine exposure

**Fig. S1.** Micrographs of *Acanthochromis polyacanthus* embryos at 9 days post fertilization showing: **A)** control embryos with red blood (haemoglobin present) and **B)** phenylhydrazine exposed embryos with yellow-clear blood (haemoglobin destroyed).

**Table S1.** Mass of *Acanthochromis polyacanthus* and *Amphiprion melanopus* embryos across age (dpf).

Species	Age (dpf)	Mass (kg)	Std. error
<i>Acanthochromis polyacanthus</i>	1	0.004716	0.000139
	2	0.004955	0.000157
	3	0.005028	0.000165
	4	0.004824	0.000139
	5	0.004709	0.000167
	6	0.004911	0.000105
	7	0.004918	0.000121
	8	0.004939	0.000106
	9	0.005166	0.000150
<i>Amphiprion melanopus</i>	1	0.001800	7.06E-05
	2	0.001745	8.43E-05
	3	0.001804	5.52E-05
	4	0.001626	5.79E-05
	5	0.001665	5.24E-05
	6	0.001609	8.15E-05

**Table S2.** Estimated marginal means statistical output for the comparison of  $\dot{M}O_2$  across age in *Acanthochromis polyacanthus* embryos. Results are given on a log scale. Bold text indicates  $\Pr(>|z|)$  values of significance ( $\alpha = 0.05$ ).

Species	Age (dpf) comparison	Estimate	Std. error	D.F.	t ratio	$\Pr(> z )$
<i>Acanthochromis polyacanthus</i>	1-2	-0.43949	0.161142	370	-2.727	0.1419
	1-3	-0.57865	0.163173	370	-3.546	<b>0.0130</b>
	1-4	-0.1284	0.158182	370	-0.812	0.9965
	1-5	-0.45743	0.172631	370	-2.650	0.1700
	1-6	-0.33924	0.15436	370	-2.198	0.4093
	1-7	-0.04521	0.164823	370	-0.274	1.0000
	1-8	-0.3306	0.159379	370	-2.074	0.4926
	1-9	-0.20363	0.169269	370	-1.203	0.9556
	2-3	-0.13916	0.150334	370	-0.926	0.9914
	2-4	0.311086	0.143666	370	2.165	0.4307
	2-5	-0.01794	0.158384	370	-0.113	1.0000
	2-6	0.100247	0.140815	370	0.712	0.9986
	2-7	0.394274	0.15097	370	2.612	0.1853
	2-8	0.108888	0.144748	370	0.752	0.9979
	2-9	0.235856	0.156478	370	1.207	0.8518
	3-4	0.450251	0.1461	370	3.082	0.0559
	3-5	0.121224	0.16048	370	0.755	0.9979
	3-6	0.239411	0.1414	370	1.693	0.7505
	3-7	0.533438	0.153039	370	3.486	<b>0.0159</b>
	3-8	0.248052	0.147484	370	1.682	0.7574
	3-9	0.37502	0.158811	370	2.361	0.3086
	4-5	-0.32903	0.151022	370	-2.179	0.4218
	4-6	-0.21084	0.136156	370	-1.549	0.8316
	4-7	0.083187	0.144019	370	0.578	0.9997
	4-8	-0.2022	0.137315	370	-1.473	0.8677
	4-9	-0.07523	0.151102	370	-0.498	0.9999
	5-6	0.118187	0.151399	370	0.721	0.9973
	5-7	0.412214	0.156746	370	0.630	0.1779
	5-8	0.126828	0.150639	370	0.842	0.9955
	5-9	0.253797	0.164391	370	1.544	0.8339
	6-7	0.294027	0.142155	370	2.068	0.4967
	6-8	0.008641	0.137538	370	0.063	1.0000
6-9	0.135609	0.149432	370	0.908	0.9925	
7-8	-0.28539	0.140303	370	-2.034	0.5205	
7-9	-0.15842	0.154927	370	-1.023	0.9836	
8-9	0.126968	0.149683	370	0.848	0.9952	

**Table S3.** Linear mixed effects model statistical output for ionocyte density and size in *Acanthochromis polyacanthus* and *Amphiprion melanopus* embryos. Bold text indicates significant  $p$ -values ( $\alpha = 0.05$ ).

Metric	Species	Factor	D.F.	$F$ -value	$p$ -value
Ionocyte density	<i>Acanthochromis polyacanthus</i>	Intercept	1, 89	37.16515	< <b>0.0001</b>
		Age	7, 89	8.34830	< <b>0.0001</b>
		Tissue	1, 89	45.17837	< <b>0.0001</b>
		Age:Tissue	7, 89	3.57659	<b>0.002</b>
	<i>Amphiprion melanopus</i>	Intercept	1, 57	720.8790	< <b>0.0001</b>
		Age	5, 57	2.1497	<b>0.0725</b>
		Tissue	1, 57	49.5779	< <b>0.0001</b>
	Ionocyte size	<i>Acanthochromis polyacanthus</i>	Intercept	1, 1121	3204.969
Age			7, 1121	45.986	< <b>0.0001</b>
Tissue			1, 1121	713.476	< <b>0.0001</b>
Age:Tissue			7, 1121	19.042	< <b>0.0001</b>
<i>Amphiprion melanopus</i>		Intercept	1, 810	9022.536	< <b>0.0001</b>
		Age	5, 810	33.621	< <b>0.0001</b>
		Tissue	1, 810	542.841	< <b>0.0001</b>
		Age:Tissue	5, 810	2.525	<b>0.028</b>

**Table S4.** Estimated marginal means statistical output for the comparison of ionocyte density across tissue and age in *Acanthochromis polyacanthus* embryos. Bold text indicates  $\Pr(>|z|)$  values of significance ( $\alpha = 0.05$ ).

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**Table S5.** Estimated marginal means statistical output for the comparison of ionocyte size across tissue and age in *Acanthochromis polyacanthus* and *Amphiprion melanopus* embryos. Results are given on a log scale. Bold text indicates  $\Pr(>|z|)$  values of significance ( $\alpha = 0.05$ ).

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