

Figure S1. Undisturbed f_H of *S. aurata* in the morning at 07:00 during the five-day exposure protocol, when either in a tank (blue) or respirometer (red). The dashed line represents the moment when fish were exchanged from one holding condition to the other. Each black line corresponds to one fish. The bigger dots, linked by dashed lines, represent the mean \pm SE values for each holding condition. Asterisks under x-axis denote significant differences between the tank and the respirometers on that day ($p < 0.001$). The experimental sequences that each fish followed are displayed in Tab S1.

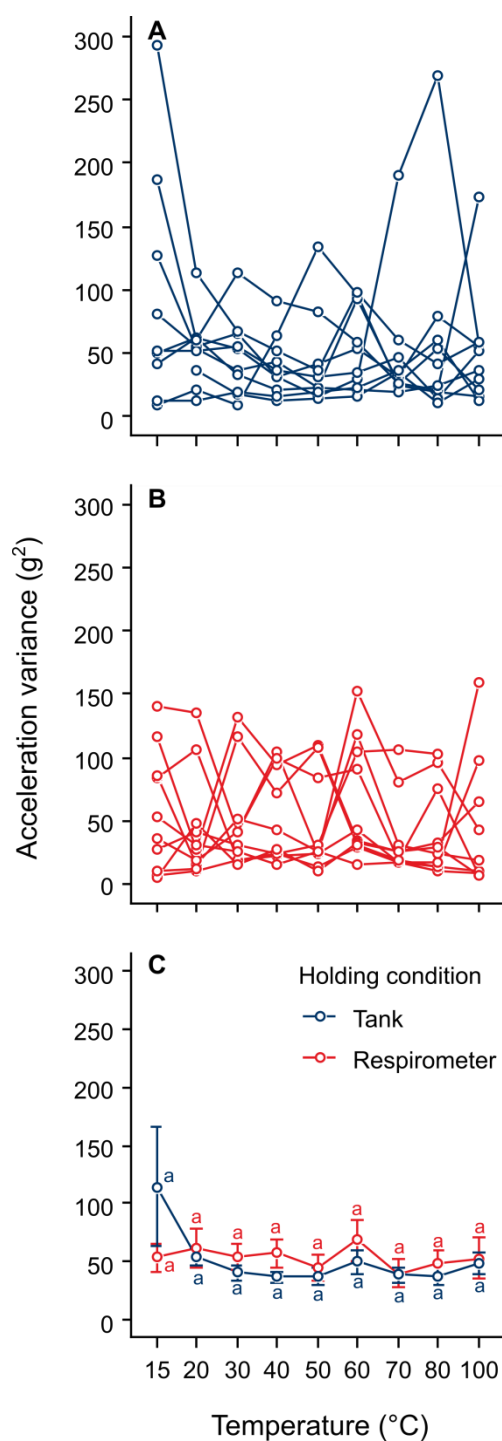


Figure S2. The effect of progressive hypoxia on VAR_m of *S. aurata* (n = 10) showing individual responses when in a tank (A) or box (B), and the mean (\pm SD) response in both holding conditions (C). In (C) a common superscript indicates no significant difference in the mean (please see text for details of statistical tests used).

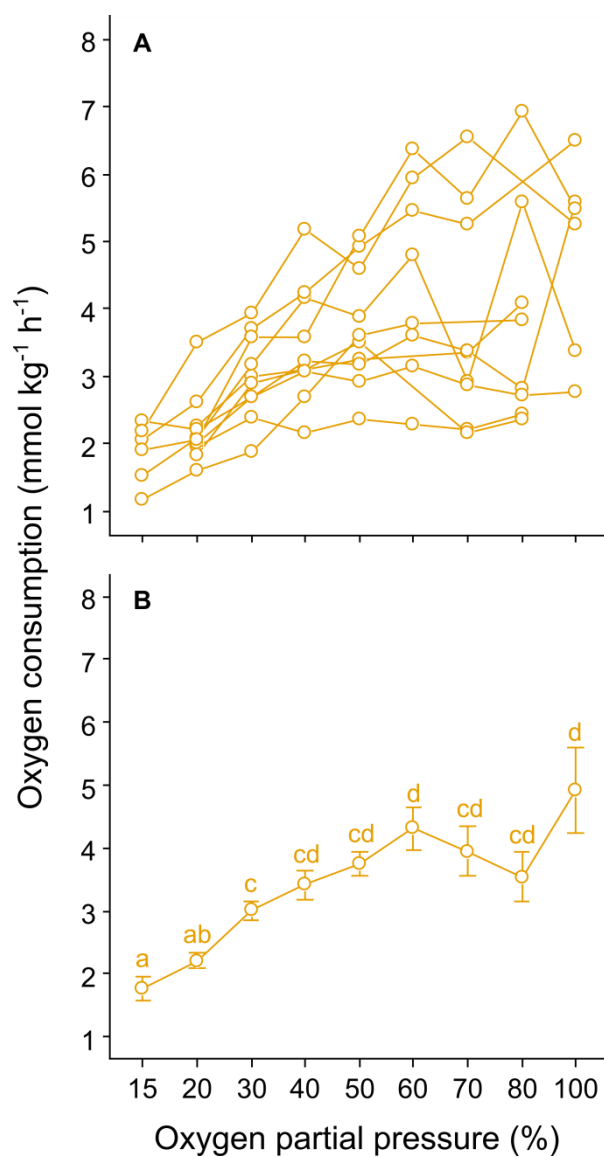


Figure S3. The effect of progressive hypoxia on oxygen consumption of *S. aurata* (n = 10) showing individual responses (A) and the mean (± SD) response in both holding conditions (B). In (B) a common superscript indicates no significant difference in the mean (please see text for details of statistical tests used).

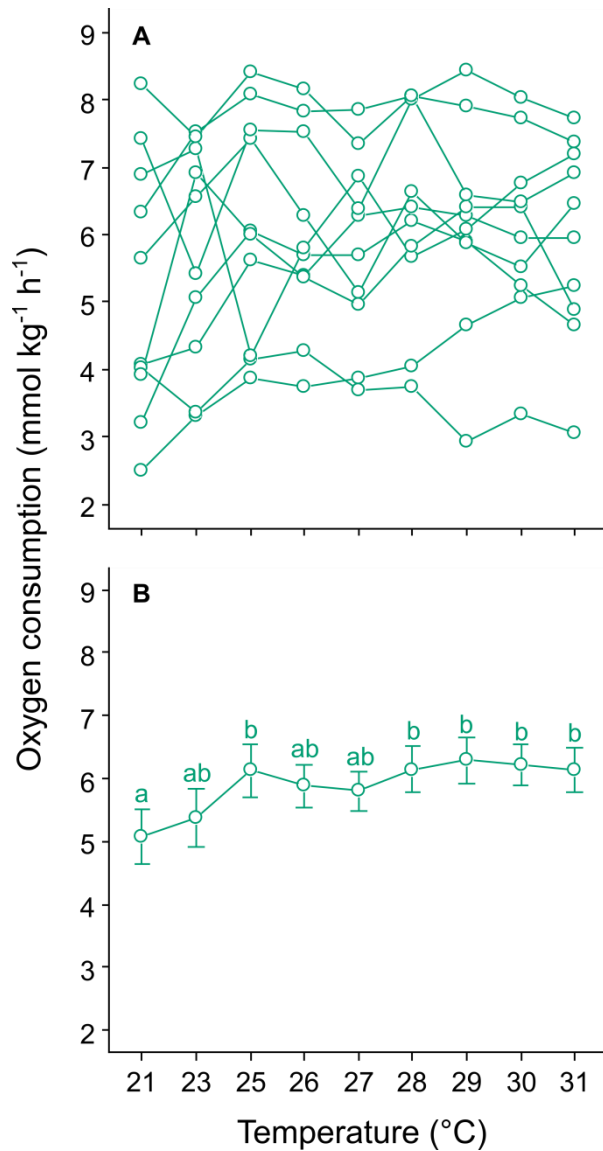


Figure S4. The effect of progressive warming on $\dot{M}O_2$ of *S. aurata*, showing individual responses (A) and the mean (\pm SD) response in both holding conditions (B). In (B) a common superscript indicates no significant difference in the mean (please see text for details of statistical tests used)

Table S1. Sequence of trials for each fish during the five day exposure protocol. W, Warming; H, Hypoxia; T, Tank; R, Respirometer. Trial number refers to the chronological order of the trial.

Fish number	Trial 1	Trial 2	Trial 3	Trial 4
1 (480 g)	W - T	H - T	W - R	H - R
2 (590 g)	W - R	H - R	W - T	H - T
3 (580 g)	W - R	H - R	W - T	H - T
4 (801 g)	W - R	H - T	W - T	H - R
5 (468 g)	W - T	H - T	H - R	W - R
6 (523 g)	W - R	H - R	H - T	W - T
7 (527 g)	W - T	H - T	H - R	W - R
8 (500 g)	W - R	H - R	H - T	W - T
9 (589 g)	W - R	H - R	H - T	W - T
10 (509 g)	W - T	H - T	H - R	W - R

Table S2. Slope, intercept p-value and R^2 associated to the linear regression between $\dot{V}O_2$ and $\dot{V}f_H$ for each fish.

Fish number	1	2	3	4	5	6	7	8	9	10
p_value	$3e^{-7}$	0.00044	$5.6e^{-5}$	0.00019	$7.8e^{-5}$	$3.3e^{-9}$	0.0004	$5.6e^{-7}$	$6.4e^{-5}$	$5.3e^{-4}$
R^2	0.84	0.63	0.73	0.68	0.61	0.92	0.58	0.91	0.64	0.51
Slope	0.035	0.045	0.047	0.03	0.052	0.058	0.05	0.058	0.048	0.038
Intercept	0.67	-0.94	-1.4	0.48	-0.14	-0.098	-0.68	-1.27	-0.77	1