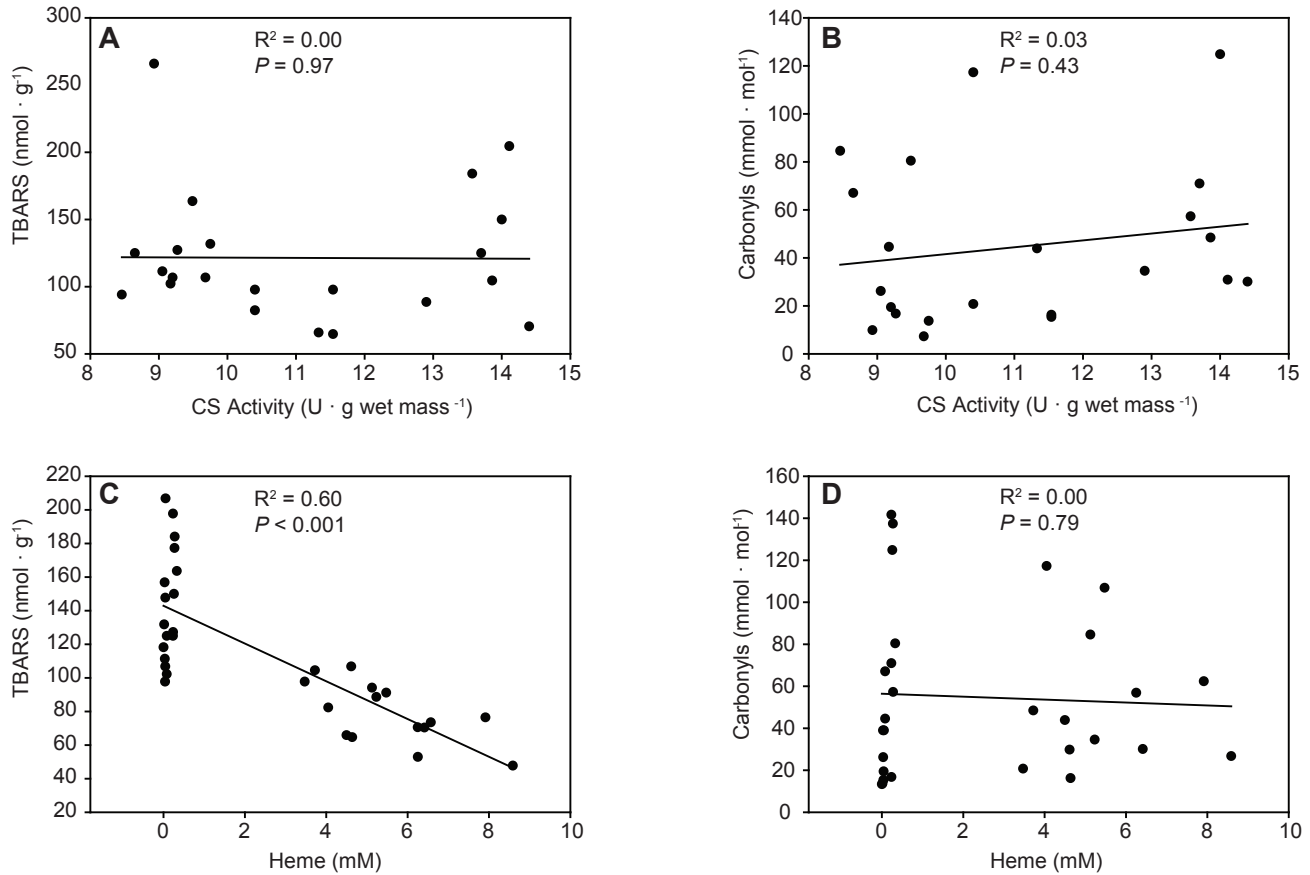# HEART VENTRICLE

Fig. S1. Linear regression of pro-oxidants and levels of oxidized lipids (TBARS; 1A,C) and proteins (carbonyls; 1B,D) in heart ventricles of 5 species of notothenioids. n=22-32.
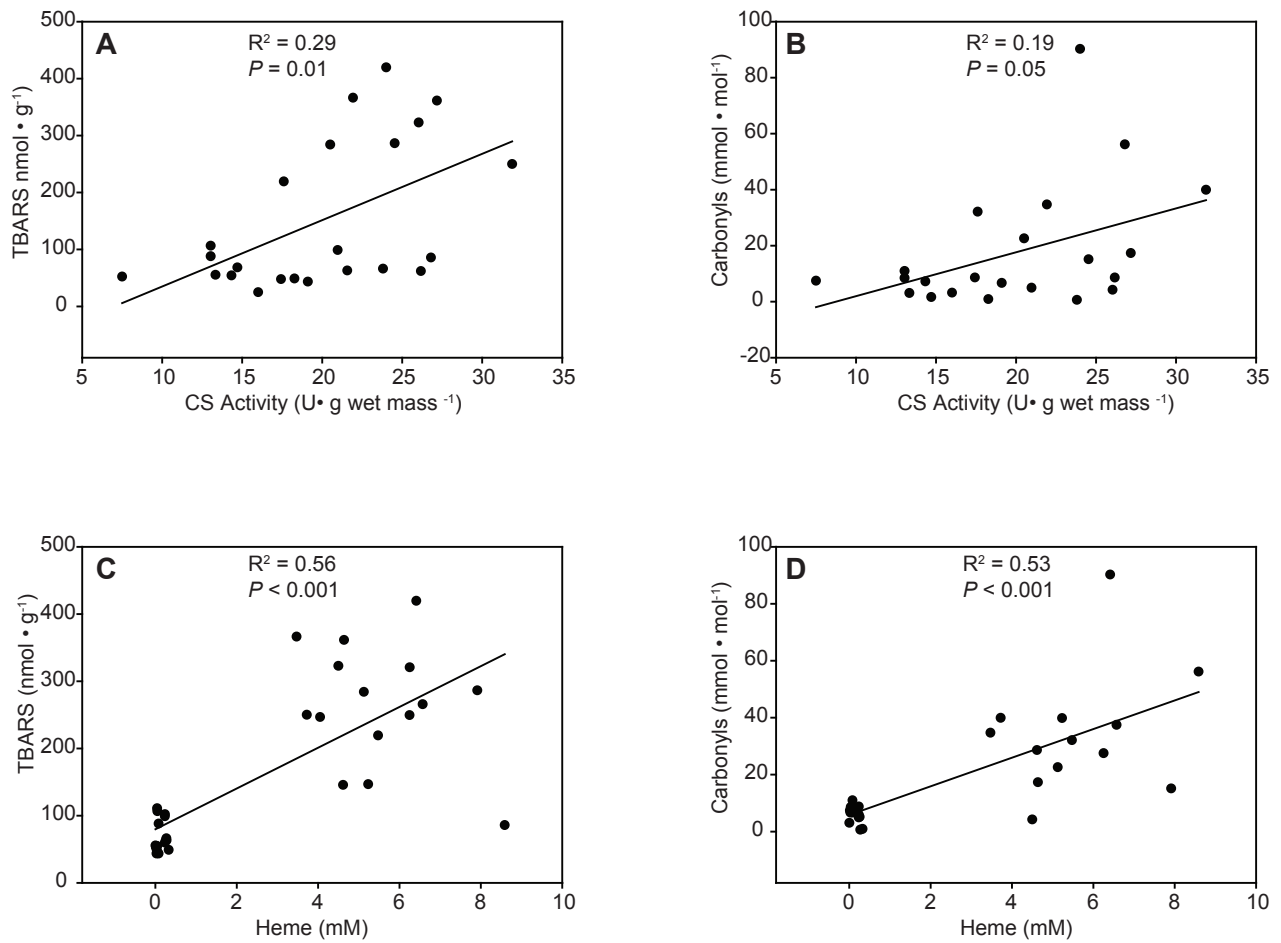
PECTORAL ADDUCTOR

Fig. S2. Linear regression of pro-oxidants and levels of oxidized lipids (TBARS; 2A,C) and proteins (carbonyls; 2B,D) in oxidative pectoral adductor of 5 species of notothenioids. n=23-32.
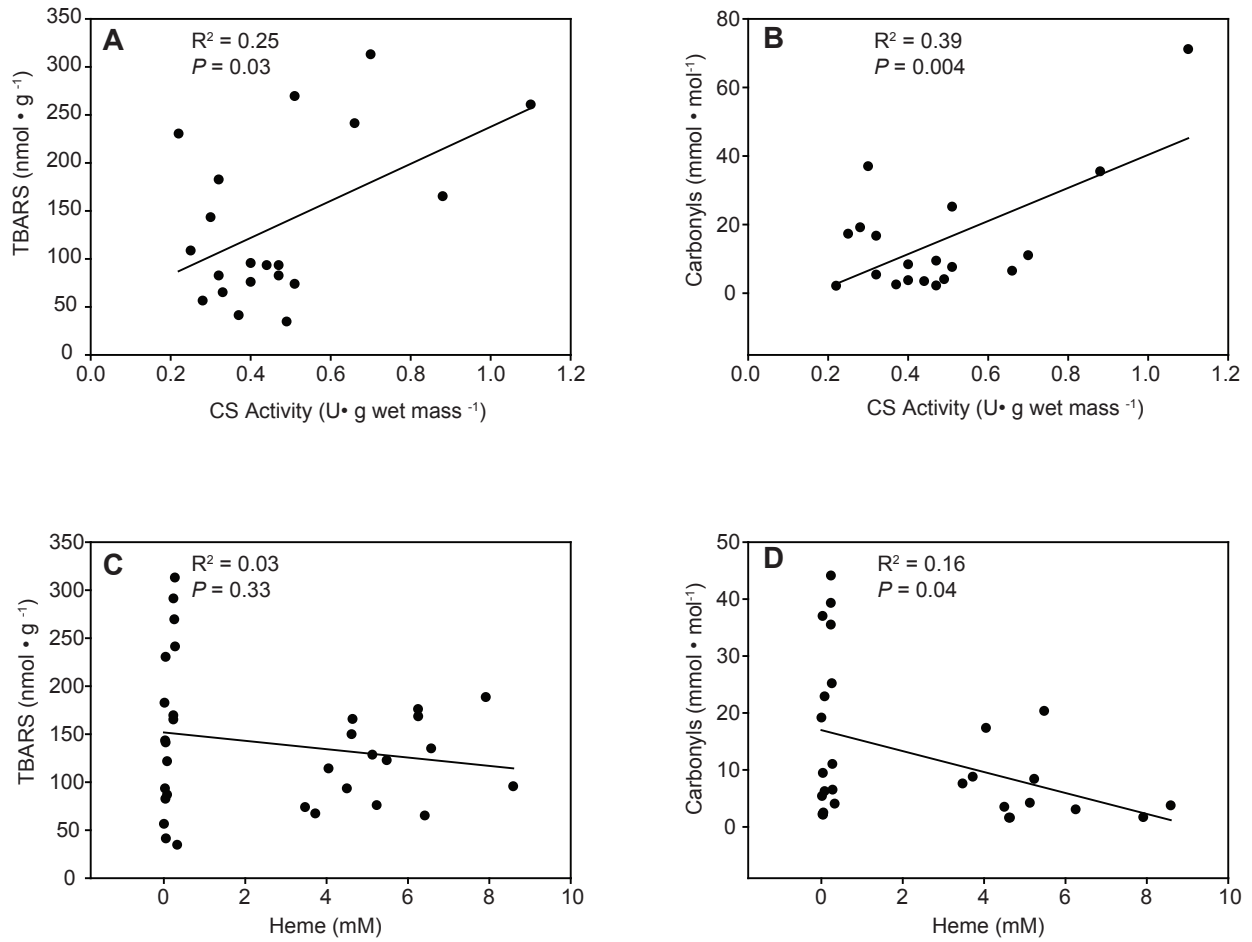
LIVER

Fig. S3. Linear regression of pro-oxidants and levels of oxidized lipids (TBARS; 3A,C) and proteins (carbonyls; 3B,D) in livers of 5 species of notothenioids. n=20-31.

Table S1. Hierarchical clustering for heart ventricle

Antioxidant	V statistic*	Group Mean ± S.D.	Overall Mean ± S.D.	P value
Group 1 **(*C. gunnari, C. aceratus, C. rastrospinosus*)**				
GSH	-3.60	177.25 ± 51.97	218.99 ± 82.69	< 0.001
CAT	-3.76	220.17 ± 67.90	284.13 ± 121.35	< 0.001
Ferritin	-4.04	14.48 ± 10.90	46.37 ± 56.34	< 0.001
GR	-4.20	231.14 ± 57.76	293.61 ± 106.16	< 0.001
SOD	-4.45	1777.36 ± 287.82	2055.84 ± 446.23	< 0.001
TAP	-4.64	6.40 ± 0.72	7.11 ± 1.09	< 0.001
Group 2 (*G. gibberifrons*)				
GR	4.84	435.09 ± 67.98	293.61 ± 106.16	<0.001
Ferritin	4.61	117.87 ± 64.56	46.37 ± 56.34	<0.001
SOD	3.64	2502.90 ± 371.13	2055.84 ± 446.23	<0.001
TAP	2.33	7.81 ± 0.51	7.11 ± 1.09	0.020
Group 3 (*N. coriiceps*)				
CAT	4.63	497.48 ± 94.06	284.13 ± 121.35	< 0.001
GSH	4.24	352.12 ± 91.78	218.99 ± 82.69	< 0.001
TAP	3.47	8.54 ± 0.70	7.11 ± 1.09	< 0.001

Overall significance of species for group belonging: X^2 (8, n=38), $P <0.001$
* The standardized difference between the group and overall means, which follows a standard normal distribution under Ho. Ferritin levels from Kuhn et al., 2016).

Table S2. Hierarchical clustering for pectoral adductor

Antioxidant	V statistic*	Group Mean ± S.D.	Overall Mean ± S.D.	*P* value
Group 1 **(*C. aceratus, C. rastrospinosus*)**				
CAT	-2.67	203.86 ± 100.10	261.09 ± 105.27	0.010
GPX1	-2.69	0.48 ± 0.23	0.61 ± 0.25	0.010
GR	-2.93	128.47 ± 32.1	170.33 ± 70.22	<0.001
Ferritin	-3.45	6.69 ± 5.98	24.42 ± 25.27	<0.001
GST	-3.51	0.94 ±0.35	1.32 ± 0.53	<0.001
SOD	-4.09	1614.47 ± 428.28	2036.74 ±506.55	<0.001
GPX4	-5.11	12.39 ± 3.18	20.26 ± 7.57	<0.001
Group 2 **(*C. gunnari*)**				
SOD	3.50	2493.27 ± 256.72	2036.74 ± 506.55	<0.001
GPX1	2.40	0.77 ± 0.19	0.61 ± 0.25	0.020
TAP	-2.33	4.37 ± 0.76	5.08 ± 1.19	0.020
Group 3 **(*N. coriiceps*)**				
GR	5.20	286.48 ± 45.37	170.33 ± 70.22	<0.001
CAT	4.42	409.24 ± 52.66	261.09 ± 105.27	<0.001
GPX4	2.99	27.45 ± 3.09	20.26 ± 7.57	<0.001
Ferritin	2.06	41.02 ± 24.11	24.42 ± 25.27	0.040
Group 4 **(*G. gibberifrons*)**				
Ferritin	4.09	73.94 ± 15.43	24.42 ± 25.27	<0.001
GST	3.30	2.16 ± 0.36	1.32 ± 0.53	<0.001
TAP	2.65	6.60 ± 0.48	5.08 ± 1.19	0.010
GPX4	2.17	28.14 ± 3.84	20.26 ± 7.57	0.030
GSH	2.08	197.72 ± 20.59	161.47 ± 36.37	0.040

Overall significance of species for group belonging: X^2 (12, n=38), *P* <0.001
* The standardized difference between the group and overall means, which follows a standard normal distribution under Ho.

Table S3. Hierarchical clustering for liver

Antioxidant	V statistic*	Group Mean ± S.D.	Overall Mean ± S.D.	*P* value
Group 1 **(*C. aceratus, C. rastrospinosus*)**				
TAP	-2.66	4.42 ± 2.22	5.85 ± 2.37	0.010
Ferritin	-3.35	9.73 ± 6.03	39.94 ± 39.51	<0.001
GST	-3.43	12.60 ± 5.37	18.91 ± 8.05	<0.001
SOD	-4.71	5030.46 ± 1058.52	7192.55 ± 2013.93	<0.001
CAT	-4.86	1631.33 ± 604.50	3703.37 ± 1871.42	<0.001
Group 2 **(*C. gunnari*)**				
SOD	3.67	9542.63 ± 894.76	7192.55 ± 2013.93	< 0.001
GR	-3.72	116.66 ± 49.66	256.15 ± 117.76	< 0.001
Group 3 **(*N. coriiceps*)**				
TAP	2.60	7.54 ± 1.47	5.85 ± 2.37	0.010
CAT	2.53	5007.53 ± 1415.39	3703.37 ± 1871.42	0.010
Group 4 **(*G. gibberifrons*)**				
GSH	4.50	281.40 ± 58.54	170.33 ± 71.34	<0.001
GST	3.99	30.02 ± 4.34	18.91 ± 8.05	<0.001
GR	3.48	398.07 ± 89.17	256.15 ± 117.76	<0.001
Ferritin	3.19	83.49 ± 39.91	39.94 ± 39.51	<0.001
CAT	2.85	5547.79 ± 780.98	3703.37 ± 1871.42	<0.001
SOD	2.14	8684.14 ± 468.28	7192.55 ± 2013.93	0.030

Overall significance of species for group belonging: X^2 (12, n=38), *P* <0.001
* The standardized difference between the group and overall means, which follows a standard normal distribution under Ho.