FIGURES

Porcellana Platycheles: sensitivity to microplastics and ecotoxicological interest

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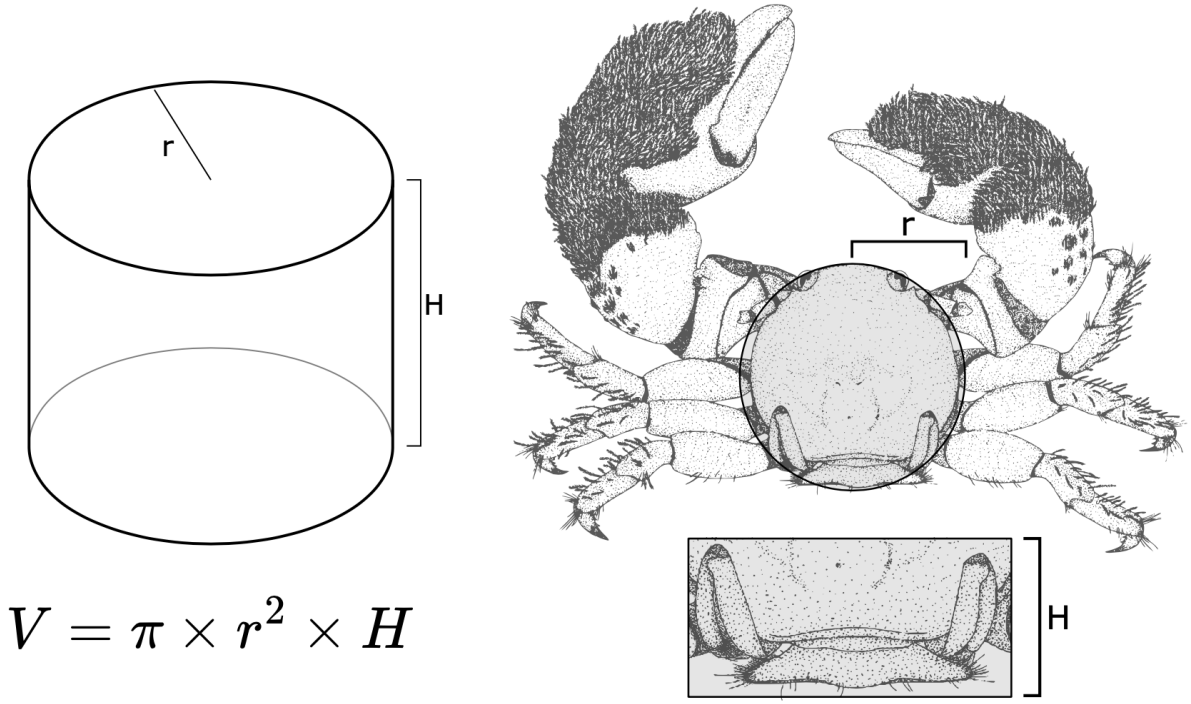
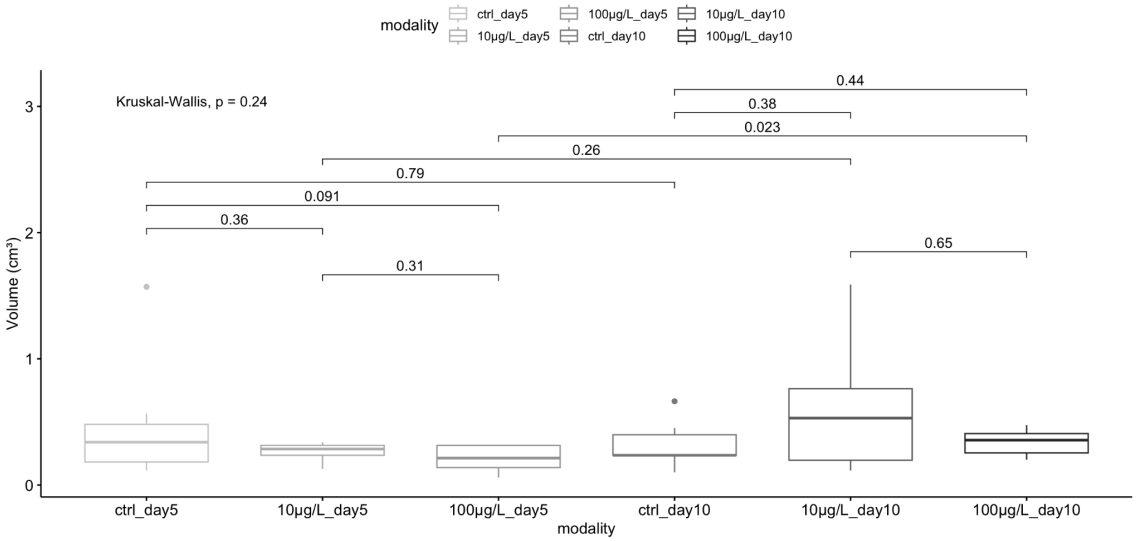
SCHEME OF MORPHOMETRIC MEASUREMENTS



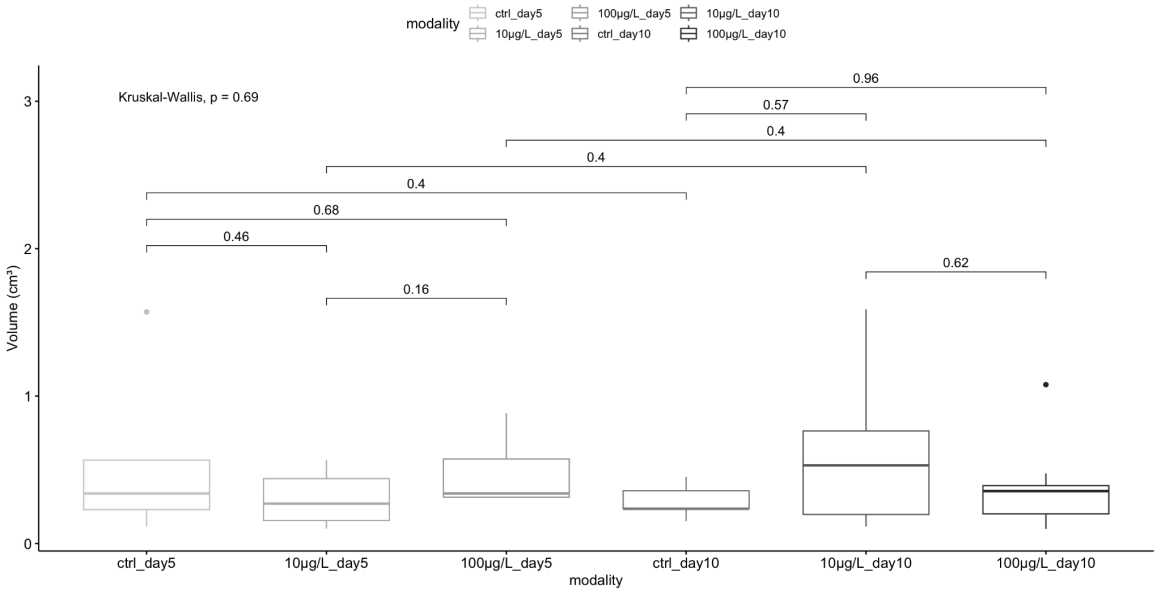
$$V = \pi \times r^2 \times H$$

Figure ?. Scheme of morphometric measurements carried out on *P.platycheles*. The two measurements correspond to the height and width of the cephalothorax.

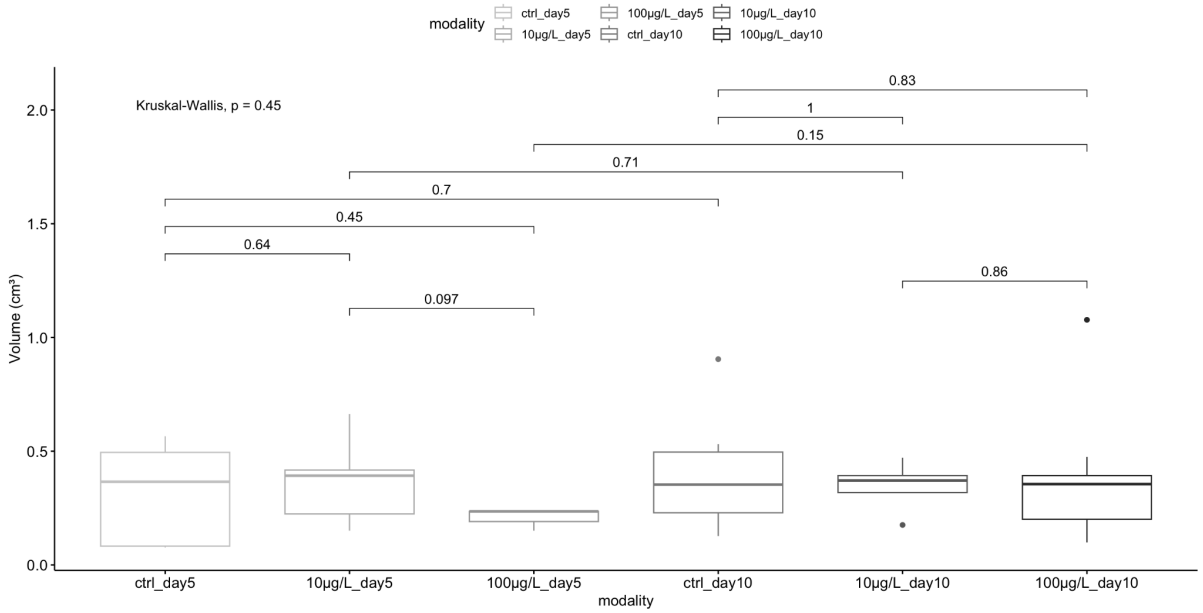
Morphométrie SOD



Morphométrie CATALASE



Morphométrie GPX



Morphométrie MDA

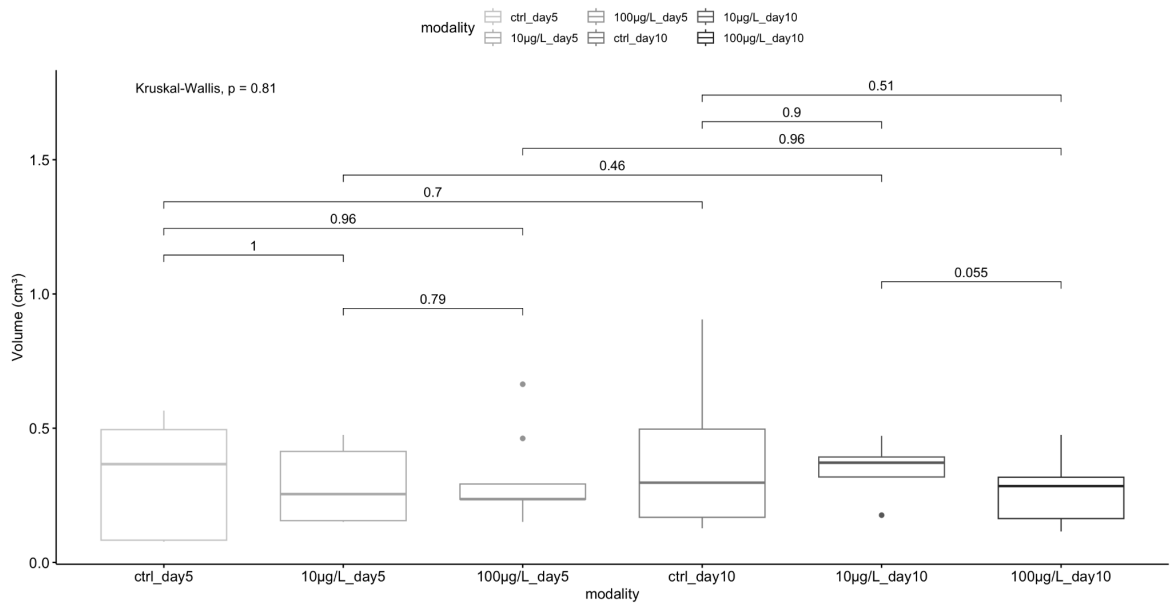
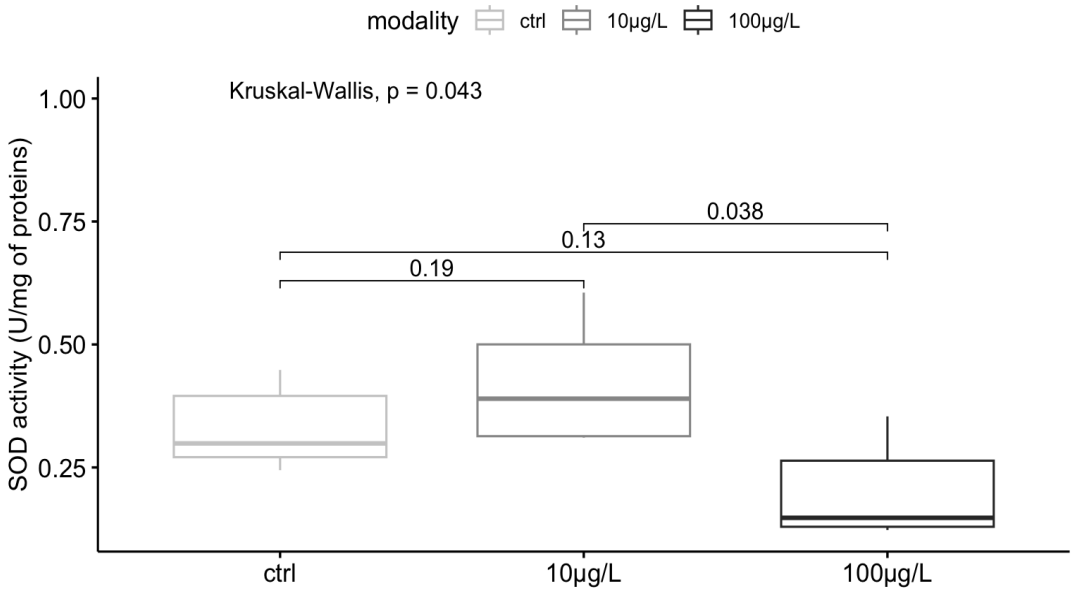


Figure ????. Volume in cm³ of cephalothorax of individuals used for the 4 oxidative stress biomarkers (A) SOD, (B) catalase, (C) GPx, (D) MDA, lipid peroxidation.

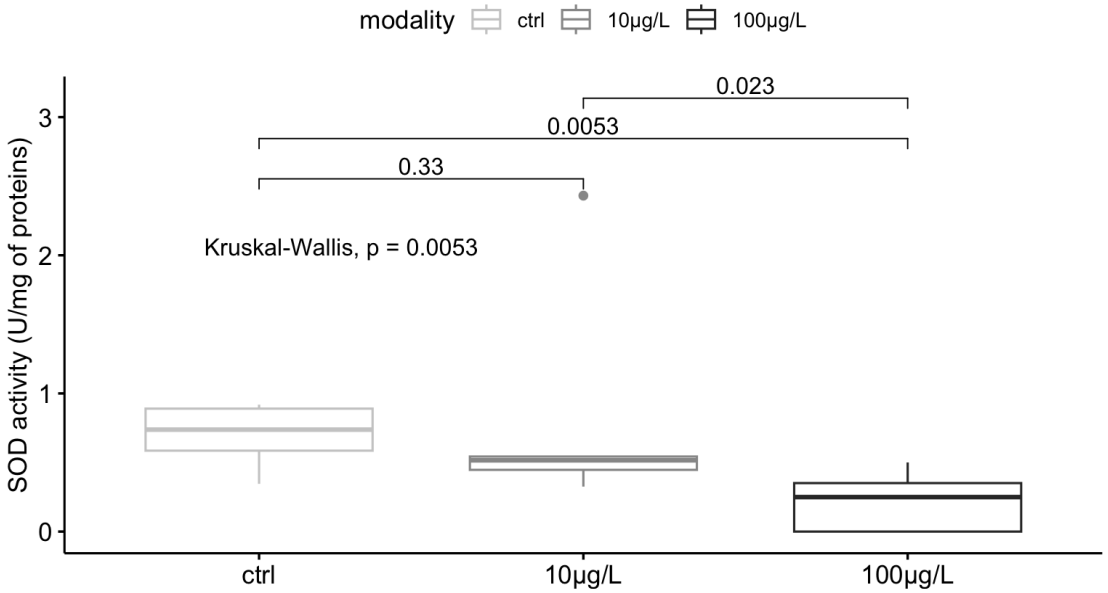
A = D5 ; B= D10 ; C = Méthode de ratio

SOD

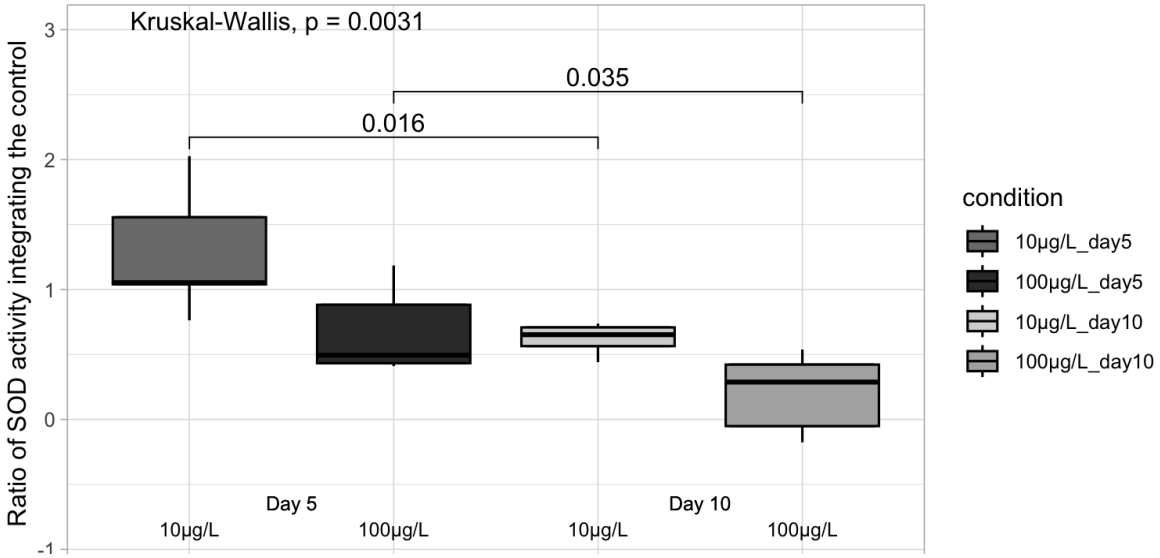
A



B

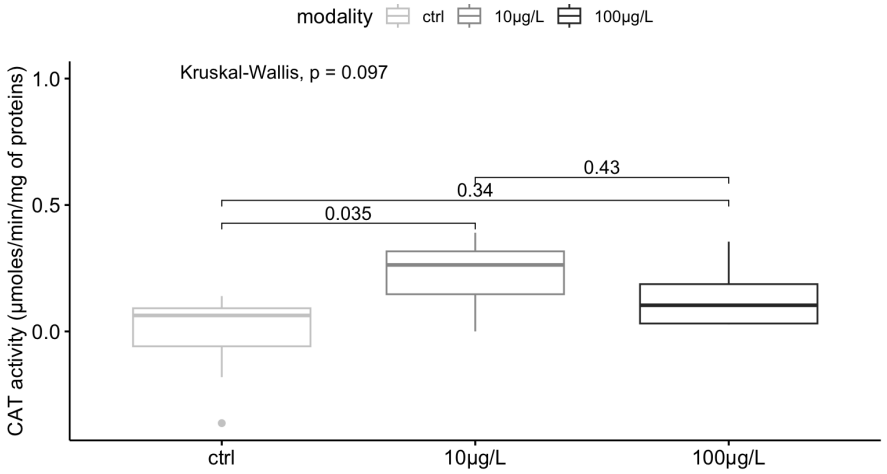


C

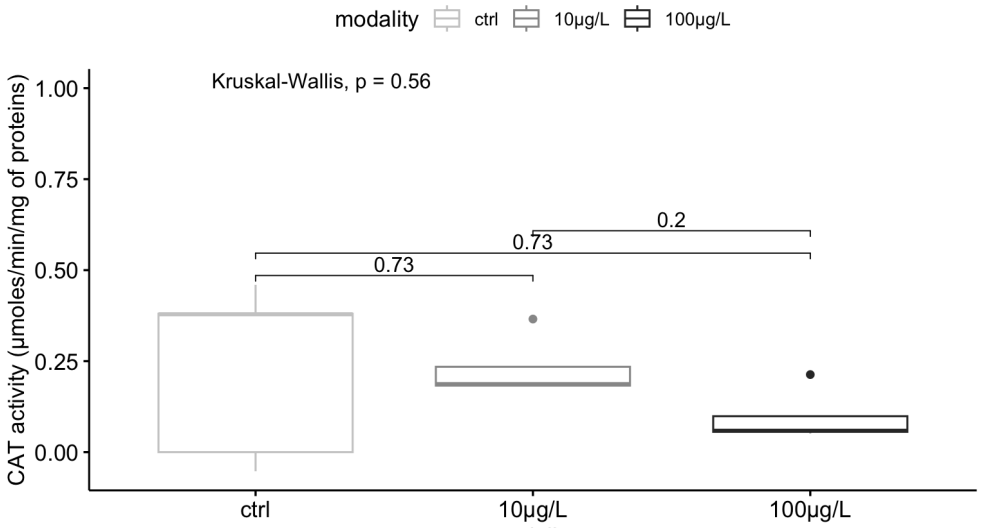

Kruskal-Wallis, p = 0.0031
0.035
0.016
Ratio of SOD activity integrating the control
3
2
1
0
-1
Day 5
Day 10
10µg/L
100µg/L
10µg/L
100µg/L
condition
10µg/L_day5
100µg/L_day5
10µg/L_day10
100µg/L_day10

CAT

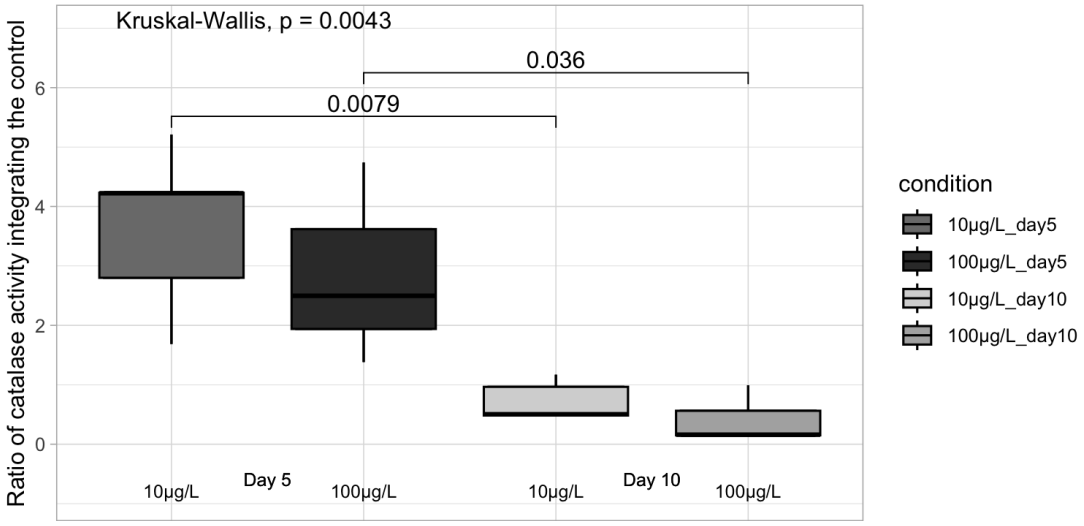
A


modality ctrl 10µg/L 100µg/L
Kruskal-Wallis, p = 0.097
CAT activity (µmoles/min/mg of proteins)
1.0
0.5
0.0
0.43
0.34
0.035
ctrl
10µg/L
100µg/L

B

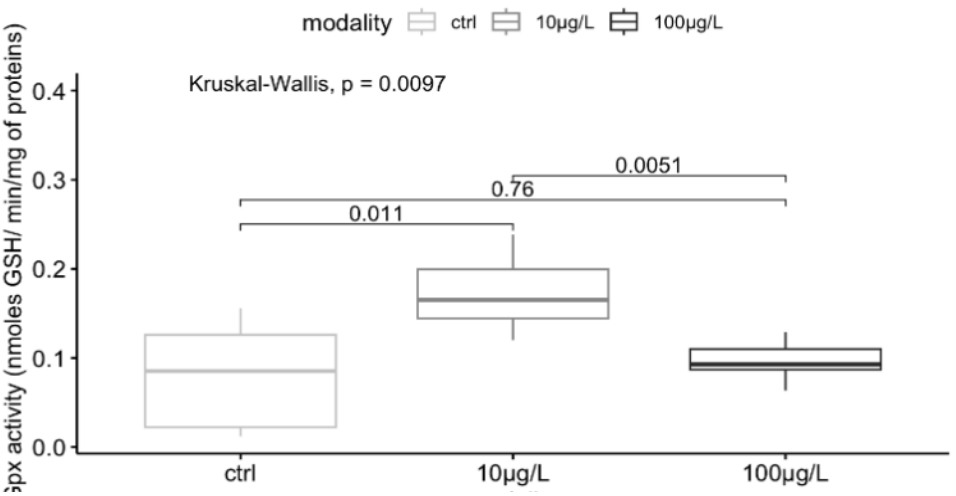

modality ctrl 10µg/L 100µg/L
Kruskal-Wallis, p = 0.56
CAT activity (µmoles/min/mg of proteins)
1.00
0.75
0.50
0.25
0.00
0.2
0.73
0.73
ctrl
10µg/L
100µg/L

C

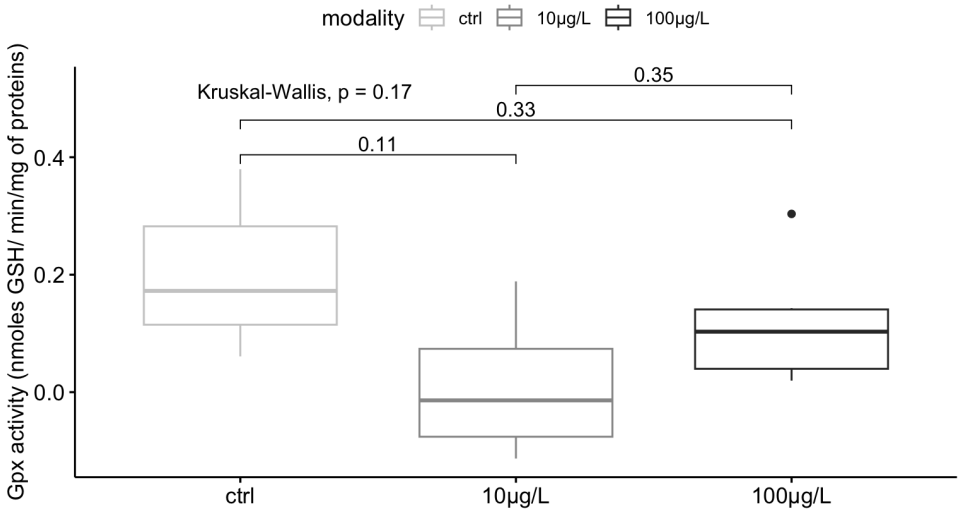

Kruskal-Wallis, p = 0.0043
0.036
0.0079
Ratio of catalase activity integrating the control
0
2
4
6
10µg/L
100µg/L
10µg/L
100µg/L
Day 5
Day 10
condition
10µg/L_day5
100µg/L_day5
10µg/L_day10
100µg/L_day10

GPX

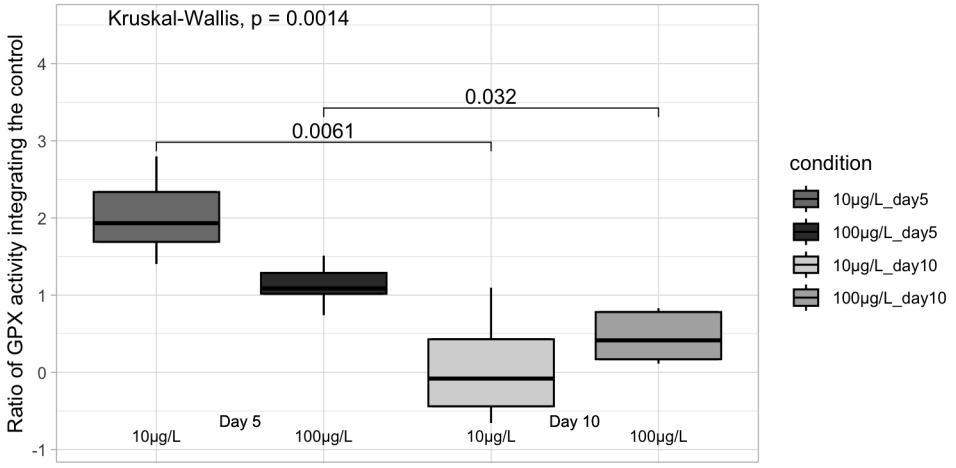
A


modality
ctrl
10µg/L
100µg/L
Kruskal-Wallis, p = 0.0097
0.0051
0.76
0.011
0.4
0.3
0.2
0.1
0.0
ctrl
10µg/L
100µg/L

B

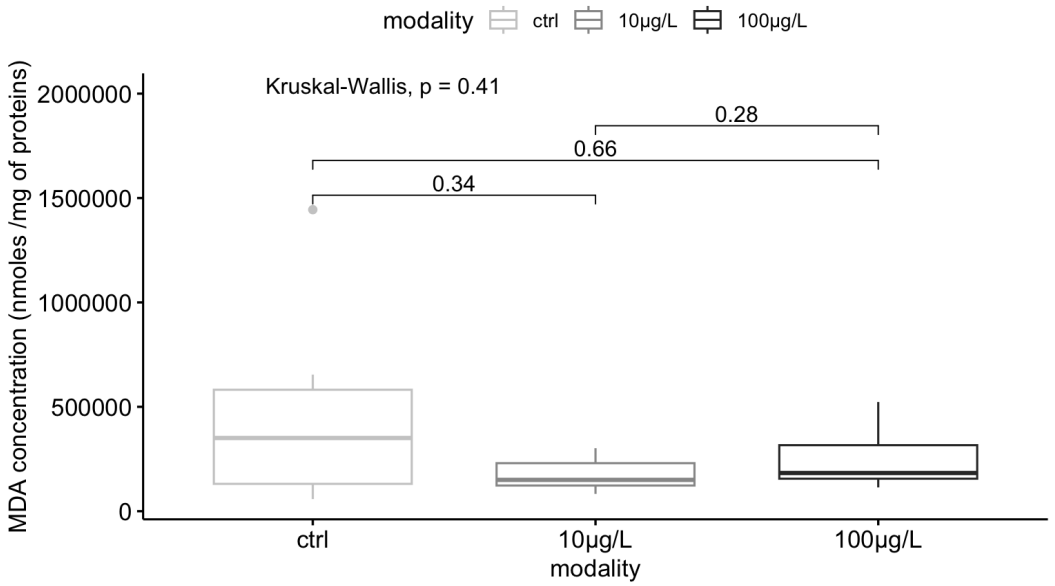

modality
ctrl
10µg/L
100µg/L
Kruskal-Wallis, p = 0.17
0.35
0.33
0.11
Gpx activity (nmoles GSH/ min/mg of proteins)
0.4
0.2
0.0
ctrl
10µg/L
100µg/L

C

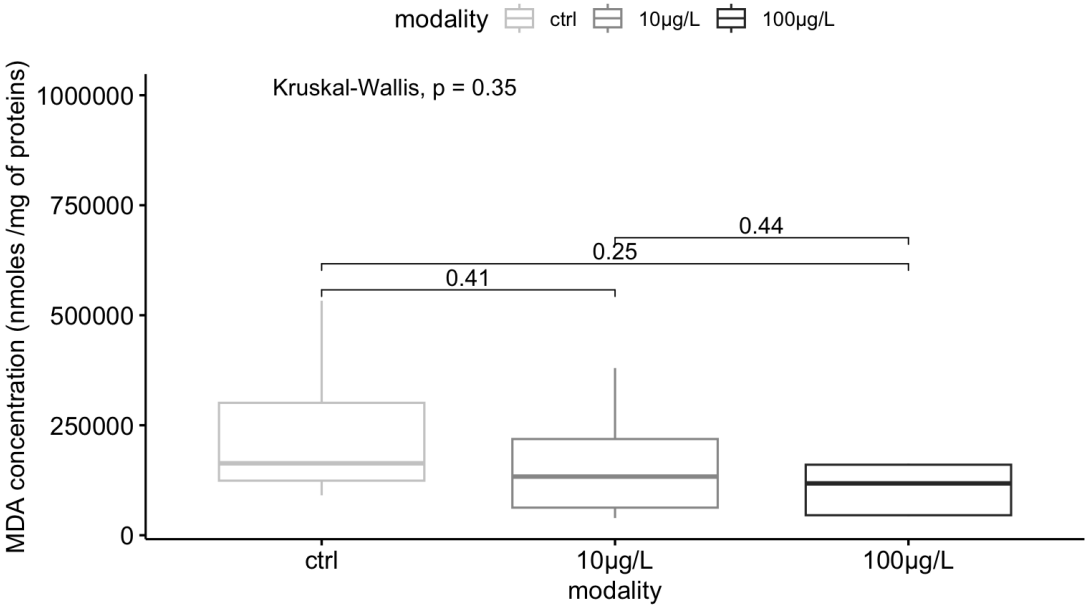

Kruskal-Wallis, p = 0.0014
Ratio of GPX activity integrating the control
4
3
2
1
0
-1
0.032
0.0061
Day 5
Day 10
10µg/L
100µg/L
10µg/L
100µg/L
condition
10µg/L_day5
100µg/L_day5
10µg/L_day10
100µg/L_day10

MDA

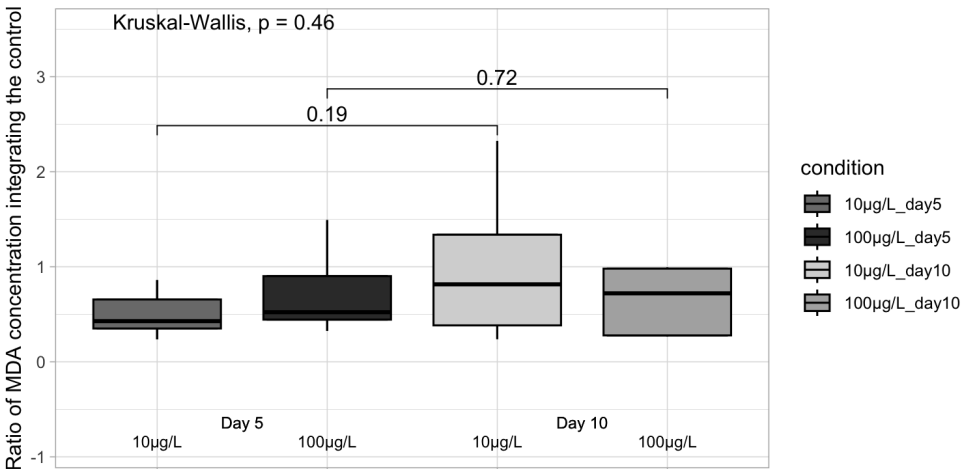
A


modality ctrl 10µg/L 100µg/L
Kruskal-Wallis, p = 0.41
0.28
0.66
0.34
MDA concentration (nmoles /mg of proteins)
2000000
1500000
1000000
500000
0
ctrl
10µg/L
100µg/L
modality

B


modality ctrl 10µg/L 100µg/L
Kruskal-Wallis, p = 0.35
0.44
0.25
0.41
MDA concentration (nmoles /mg of proteins)
1000000
750000
500000
250000
0
ctrl
10µg/L
100µg/L
modality

C


Kruskal-Wallis, p = 0.46
0.72
0.19
Ratio of MDA concentration integrating the control
3
2
1
0
-1
Day 5
Day 10
10µg/L
100µg/L
10µg/L
100µg/L
condition
10µg/L_day5
100µg/L_day5
10µg/L_day10
100µg/L_day10

ACETYLCHOLINESTERASE

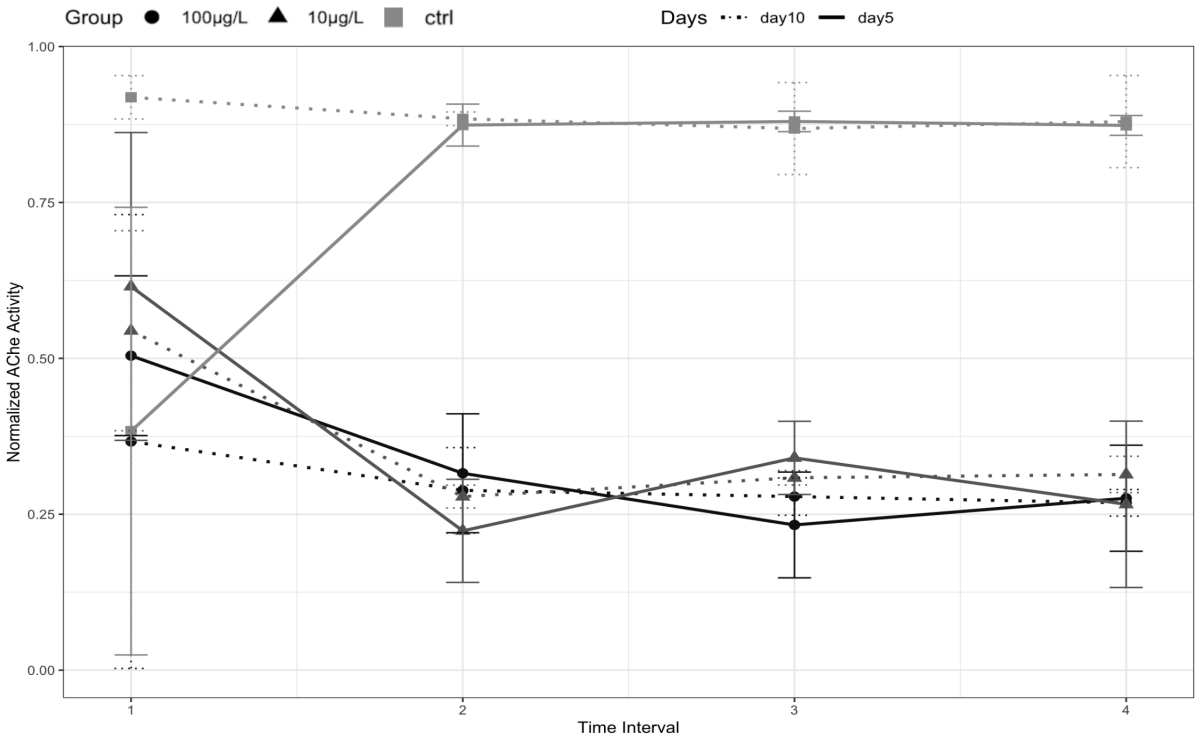
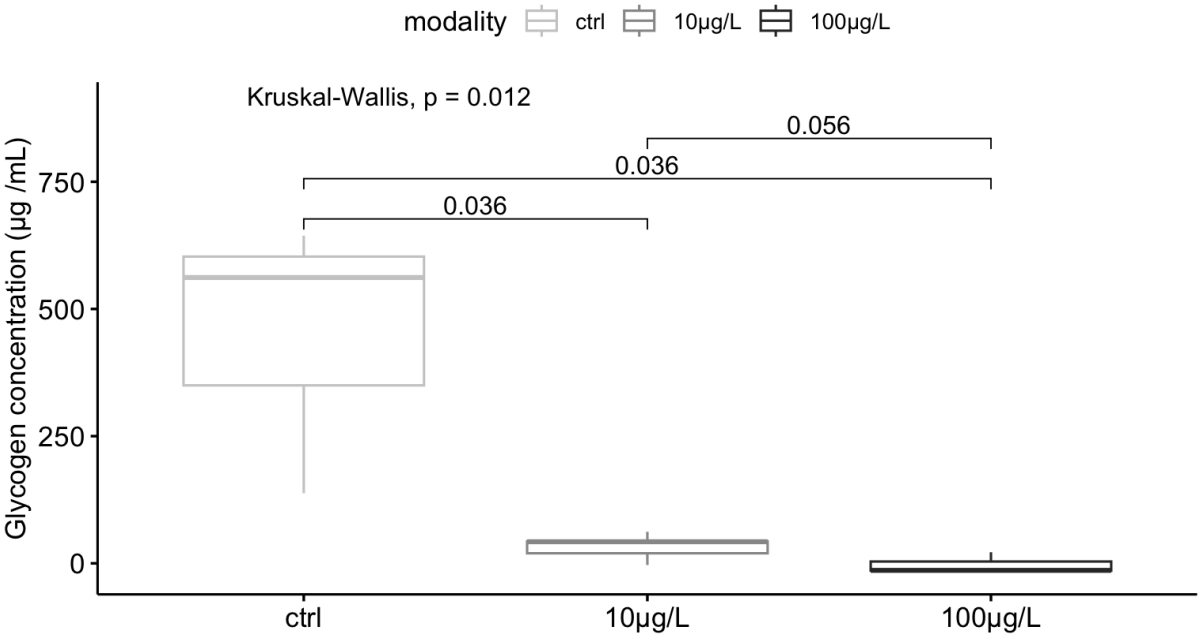


Table ??. . Enzyme activity averages, standard deviations and p-values for the different acetylcholinesterase assay groups.

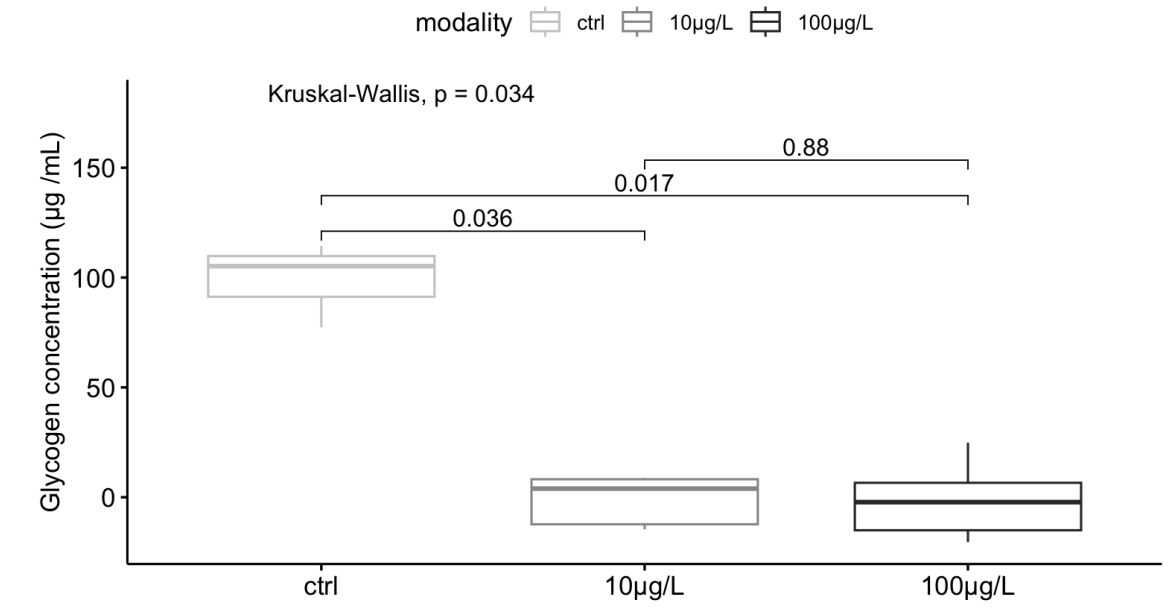
Group	Mean Activity	Standard Deviation	p-value
10µg/L	0.5257	1.4369	0.0061
100µg/L	0.6838	1.3987	0.0031
Ctrl	-1.4839	5.0301	

GLYCOGEN

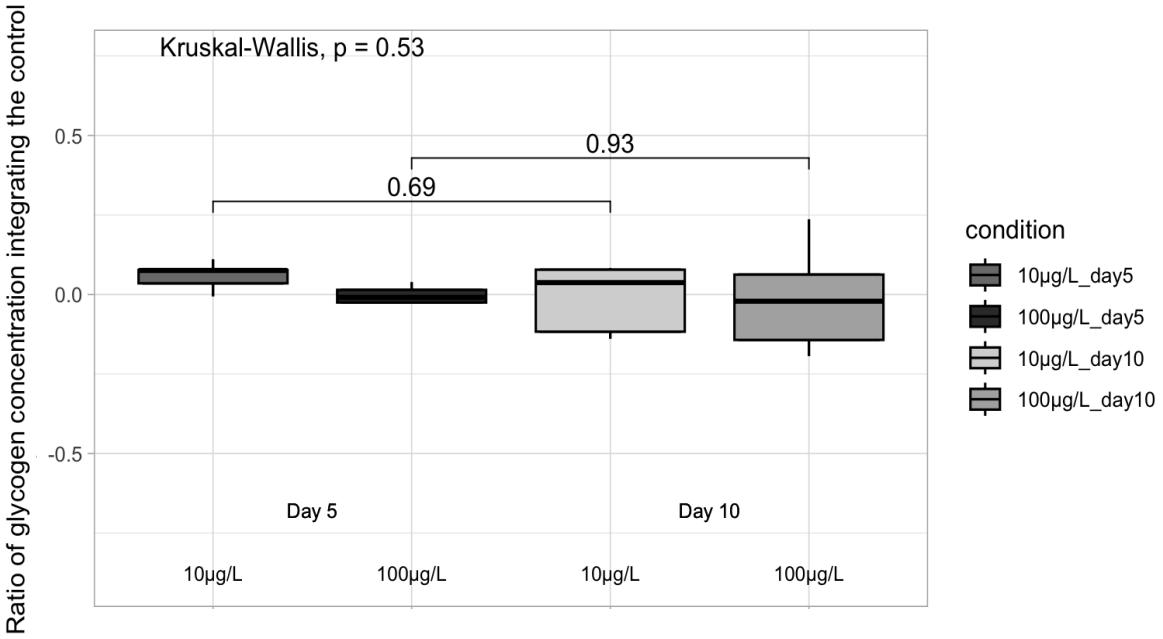
A


modality
ctrl
10µg/L
100µg/L
Kruskal-Wallis, p = 0.012
0.056
0.036
0.036
Glycogen concentration (µg /mL)
750
500
250
0
ctrl
10µg/L
100µg/L

B


modality
ctrl
10µg/L
100µg/L
Kruskal-Wallis, p = 0.034
0.88
0.017
0.036
Glycogen concentration (µg /mL)
150
100
50
0
ctrl
10µg/L
100µg/L

C


Ratio of glycogen concentration integrating the control
Kruskal-Wallis, p = 0.53
0.93
0.69
0.5
0.0
-0.5
Day 5
Day 10
10µg/L
100µg/L
10µg/L
100µg/L
condition
10µg/L_day5
100µg/L_day5
10µg/L_day10
100µg/L_day10

EXPERIMENTAL DESIGN

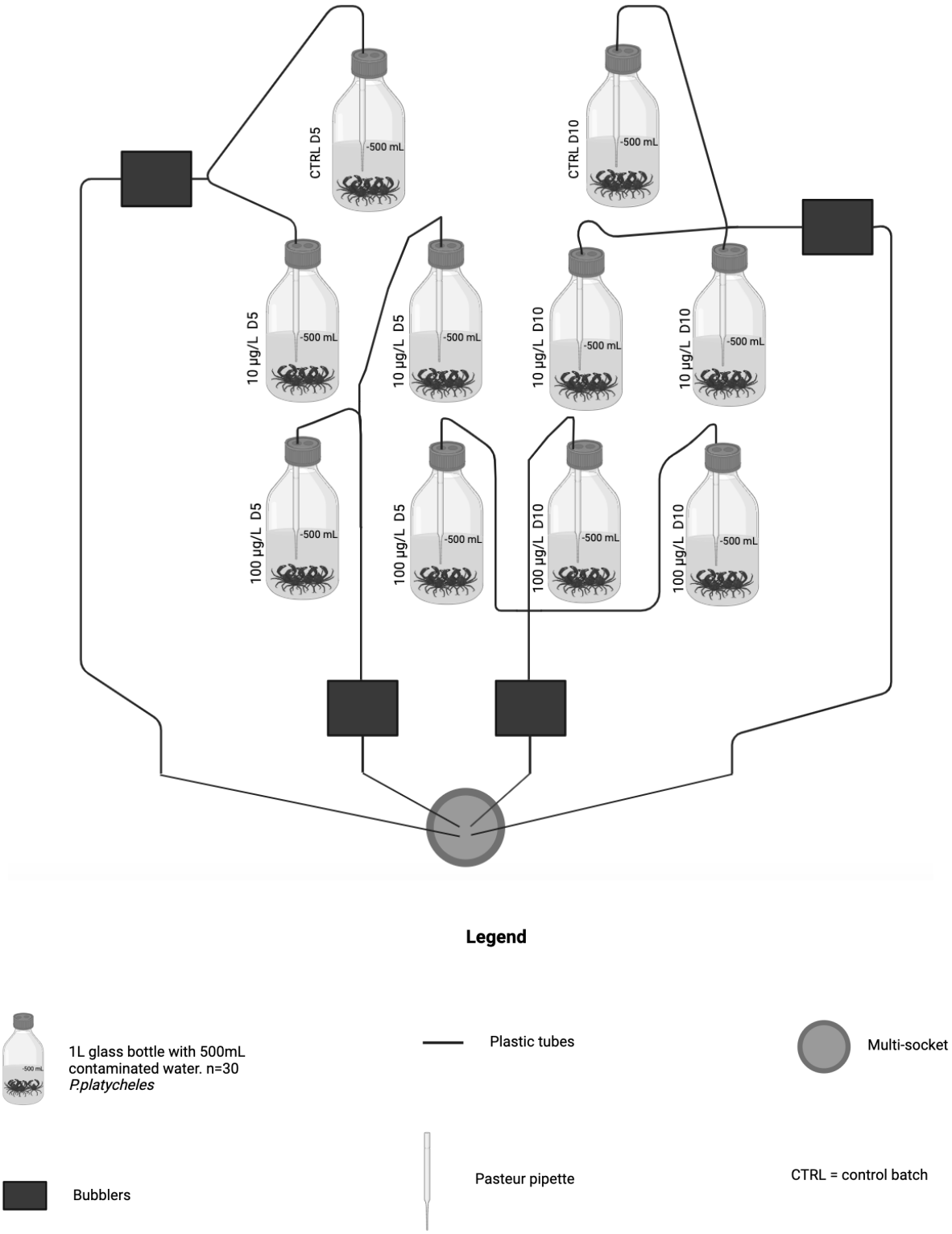


Figure ???: Scheme of the experimental design created during the contamination phase. Animals are placed in 1L bottles. At each time point (D5 and D10), contamination concentrations are 10µg/L and 100µg/L.

COMPOSITION OF THE MICROPLASTIC MIXTURE

Polycyclic Aromatic Hydrocarbons (PAHs) (µg.g^{-1})	Naphthalene	<LOQ	-	-	6.924
	Acenaphthylene	0.178	-	-	-
	Acenaphthene	0.066	-	-	-
	Fluorene	0.255	-	-	-
	Phenanthrene	0.659	-	-	-
	Anthracene	0.537	-	-	-
	Fluoranthene	0.471	-	-	-
	Pyrene	0.835	-	-	-
	Benzo[a]anthracene	0.041	-	-	-
	Chrysene	0.053	-	-	-
	Benzo[b]fluoranthene	0.358	-	-	-
	Benzo[k]fluoranthene	0.090	-	-	-
	Benzo[a]pyrene	0.356	-	-	-
	Indeno[1,2,3]pyrene	0.695	-	-	-
	Dibenzo[a,h]anthracene	0.233	-	-	-
	Benzo[g,h,i]perylene	2.097	-	-	-
Alkylphenols (µg.g^{-1})	Bisphenol A	0.013	-	-	2.988
	4-Nonylphenol	2.349	-	-	-
	Nonylphenol monoethoxylate	0.451	-	-	-
	Nonylphenol diethoxylate	0.093	-	-	-
	Nonyphenol carboxylic acid	<LOD	-	-	-
	Octylphenol	0.012	-	-	-
	Octylphenol monoethoxylate	0.062	-	-	-
	Octylphenol diethoxylate	0.008	-	-	-
Phthalic Acid Esters (µg.g^{-1})	Dimethyl phthalate	2.508	-	-	211.362
	Diethyl phthalate	7.527	-	-	-
	Diisobutyl phthalate	13.657	-	-	-
	Dibutyl phthalate	126.612	-	-	-
	Bis(2methoxyethyl) phthalate	5.706	-	-	-
	Bis(4-methyl-2-pentyl) phthalate	0.633	-	-	-
	Bis(2ethoxyethyl) phthalate	2.080	-	-	-
	Di-n-pentyl phthalate	0.060	-	-	-
	Butylbenzyl phthalate	6.905	-	-	-
	Di-n-hexyl phthalate	5.698	-	-	-
	Bis(2-butoxyethyl) phthalate	2.365	-	-	-
	Dicyclohexyl phthalate	0.900	-	-	-
	Bis(2-ethylhexyl) phthalate	34.766	-	-	-
	di-n-octyl-phtalate	0.694	-	-	-
	Diisononly phthalate	1.251	-	-	-

Table ?????. Table showing the mass composition of the microplastic mixture in the study and the content of 5 metallic trace elements, 16 polycyclic aromatic hydrocarbons, 8 alkylphenols and 11 phthalates expressed in µg.g-1 microplastics.

MP Mixture	PE	PP	PVC	PET	Total ($\mu g.g^{-1}$)
Mass Composition	40	40	10	10	-
Metallic Trace Elements ($\mu g.g^{-1}$)	Cu	2.0	3.5	4.7	13.8
	Pb	4.9	9.0	786.0	19.5
	Zn	9.0	4169.8	432.3	52.6
	Cd	6.0	123.2	<LOQ	<LOQ
	Cr	<LOQ	77.9	23.1	359.5

Tab ????. Composition and concentration of various components in the MP mixture.