

SUPPLEMENTARY MATERIAL

**Single Acute Sublethal Fipronil Concentration Induces Behavioral Toxicity and Suggests Endocrine-Disrupting Properties in Zebrafish (*Danio rerio*)**

**Table S1-** Statistical data

**Normality – Open field**

**Locomotion**

	<b>Control</b>	<b>Fipronil</b>
Test for normal distribution		
D'Agostino & Pearson test		
K2	1,632	2,915
P value	0,4422	0,2329
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Anderson-Darling test		
A2*	0,7027	0,7751
P value	0,0451	0,0287
Passed normality test (alpha=0.05)?	No	No
P value summary	*	*
Shapiro-Wilk test		
W	0,8224	0,8129
P value	0,0271	0,0208
Passed normality test (alpha=0.05)?	No	No
P value summary	*	*
Kolmogorov-Smirnov test		
KS distance	0,2183	0,2578
P value	>0,1000	0,0584
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Number of values	10	10

**ROUT Q 5% - ID outliers**

	Control	Fipronil
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	0	2

**Normality after ID outliers**

	Control	Fipronil
Test for normal distribution		
D'Agostino & Pearson test		
K2	1,632	1,124
P value	0,4422	0,5700
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Anderson-Darling test		
A2*	0,7027	0,3076
P value	0,0451	0,4796
Passed normality test (alpha=0.05)?	No	Yes
P value summary	*	ns
Shapiro-Wilk test		
W	0,8224	0,9182
P value	0,0271	0,4151
Passed normality test (alpha=0.05)?	No	Yes
P value summary	*	ns
Kolmogorov-Smirnov test		
KS distance	0,2183	0,1792
P value	>0,1000	>0,1000
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Number of values	10	8

**Immobility**

	Control	Experimental
Test for normal distribution		
D'Agostino & Pearson test		
K2	3,367	3,595
P value	0,1857	0,1657
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Anderson-Darling test		
A2*	1,314	0,9463
P value	0,0008	0,0099
Passed normality test (alpha=0.05)?	No	No
P value summary	***	**
Shapiro-Wilk test		
W	0,6601	0,7718
P value	0,0008	0,0066
Passed normality test (alpha=0.05)?	No	No
P value summary	***	**
Kolmogorov-Smirnov test		
KS distance	0,3914	0,2491
P value	0,0007	0,0790
Passed normality test (alpha=0.05)?	No	Yes
P value summary	***	ns
Number of values	8	10

**ROUT Q5% - ID outliers**

	Control	Experimental
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	8	10
Outliers	2	2

**Normality after ID outliers**

	Control	Experimental
Test for normal distribution		
D'Agostino & Pearson test		
K2	N too small	1,445
P value		0,4856
Passed normality test (alpha=0.05)?		Yes
P value summary		ns
Anderson-Darling test		
A2*	N too small	0,5872
P value		0,0835
Passed normality test (alpha=0.05)?		Yes
P value summary		ns
Shapiro-Wilk test		
W	0,8131	0,8442
P value	0,0768	0,0832
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Kolmogorov-Smirnov test		
KS distance	0,2769	0,2699
P value	>0,1000	0,0889
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Number of values	6	8

**Normality anxiety****Time light side**

	<b>Control</b>	<b>Fipronil</b>
Test for normal distribution		
D'Agostino & Pearson test		
K2	5,004	2,733
P value	0,0819	0,2550
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Anderson-Darling test		
A2*	1,236	1,064
P value	0,0016	0,0048
Passed normality test (alpha=0.05)?	No	No
P value summary	**	**
Shapiro-Wilk test		
W	0,7234	0,7819
P value	0,0017	0,0087
Passed normality test (alpha=0.05)?	No	No
P value summary	**	**
Kolmogorov-Smirnov test		
KS distance	0,3575	0,3157
P value	0,0007	0,0055
Passed normality test (alpha=0.05)?	No	No
P value summary	***	**
Number of values	10	10

**ROUT – ID outliers**

	<b>Control</b>	<b>Fipronil</b>
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	2	1

**Normality after ID outliers**

	Control	Fipronil
Test for normal distribution		
D'Agostino & Pearson test		
K2	6,150	4,098
P value	0,0462	0,1288
Passed normality test (alpha=0.05)?	No	Yes
P value summary	*	ns
Anderson-Darling test		
A2*	0,7863	1,175
P value	0,0233	0,0022
Passed normality test (alpha=0.05)?	No	No
P value summary	*	**
Shapiro-Wilk test		
W	0,7852	0,7339
P value	0,0199	0,0035
Passed normality test (alpha=0.05)?	No	No
P value summary	*	**
Kolmogorov-Smirnov test		
KS distance	0,2914	0,3426
P value	0,0441	0,0031
Passed normality test (alpha=0.05)?	No	No
P value summary	*	**
Number of values	8	9

**Crossings**

## Normality

	<b>Control</b>	<b>Fipronil</b>
Test for normal distribution		
D'Agostino & Pearson test		
K2	8,176	7,201
P value	0,0168	0,0273
Passed normality test (alpha=0.05)?	No	No
P value summary	*	*
Anderson-Darling test		
A2*	1,737	1,121
P value	<0,0001	0,0033
Passed normality test (alpha=0.05)?	No	No
P value summary	****	**
Shapiro-Wilk test		
W	0,6405	0,7409
P value	0,0002	0,0028
Passed normality test (alpha=0.05)?	No	No
P value summary	***	**
Kolmogorov-Smirnov test		
KS distance	0,3807	0,2836
P value	0,0002	0,0220
Passed normality test (alpha=0.05)?	No	No
P value summary	***	*
Number of values	10	10

**ROUT – ID outliers**

	<b>Control</b>	<b>Fipronil</b>
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	0	1

**Normality after ID outliers**

	Control	Fipronil
Test for normal distribution		
D'Agostino & Pearson test		
K2	8,176	4,222
P value	0,0168	0,1211
Passed normality test (alpha=0.05)?	No	Yes
P value summary	*	ns
Anderson-Darling test		
A2*	1,737	1,198
P value	<0,0001	0,0019
Passed normality test (alpha=0.05)?	No	No
P value summary	****	**
Shapiro-Wilk test		
W	0,6405	0,7136
P value	0,0002	0,0020
Passed normality test (alpha=0.05)?	No	No
P value summary	***	**
Kolmogorov-Smirnov test		
KS distance	0,3807	0,3049
P value	0,0002	0,0157
Passed normality test (alpha=0.05)?	No	No
P value summary	***	*
Number of values	10	9

**Immobility time**

## Normality

	Control	Fipronil
Test for normal distribution		
D'Agostino & Pearson test		
K2	28,56	2,707
P value	<0,0001	0,2583
Passed normality test (alpha=0.05)?	No	Yes
P value summary	****	ns
Anderson-Darling test		
A2*	3,208	0,8120
P value	<0,0001	0,0228
Passed normality test (alpha=0.05)?	No	No
P value summary	****	*
Shapiro-Wilk test		
W	0,3657	0,8188
P value	<0,0001	0,0245
Passed normality test (alpha=0.05)?	No	No
P value summary	****	*
Kolmogorov-Smirnov test		
KS distance	0,5241	0,2252
P value	<0,0001	>0,1000
Passed normality test (alpha=0.05)?	No	Yes
P value summary	****	ns
Number of values	10	10

**ROUT ID outliers**

	Control	Fipronil
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	1	0

**Normality after ID outliers**

	<b>Control</b>	<b>Fipronil</b>
Test for normal distribution		
D'Agostino & Pearson test		
K2	Invalid input data	2,707
P value		0,2583
Passed normality test (alpha=0.05)?		Yes
P value summary		ns
Anderson-Darling test		
A2*	Invalid input data	0,8120
P value		0,0228
Passed normality test (alpha=0.05)?		No
P value summary		*
Shapiro-Wilk test		
W	Invalid input data	0,8188
P value		0,0245
Passed normality test (alpha=0.05)?		No
P value summary		*
Kolmogorov-Smirnov test		
KS distance	1,000	0,2252
P value	<0,0001	>0,1000
Passed normality test (alpha=0.05)?	No	Yes
P value summary	****	ns
Number of values	9	10

**Attempts to the light side****Normality**

	<b>Control</b>	<b>Fipronil</b>
Test for normal distribution		
D'Agostino & Pearson test		
K2	7,899	18,97
P value	0,0193	<0,0001
Passed normality test (alpha=0.05)?	No	No
P value summary	*	****
Anderson-Darling test		
A2*	1,494	1,356
P value	0,0003	0,0008
Passed normality test (alpha=0.05)?	No	No
P value summary	***	***
Shapiro-Wilk test		
W	0,6780	0,6652
P value	0,0005	0,0003
Passed normality test (alpha=0.05)?	No	No
P value summary	***	***
Kolmogorov-Smirnov test		
KS distance	0,2955	0,3439
P value	0,0135	0,0014
Passed normality test (alpha=0.05)?	No	No
P value summary	*	**
Number of values	10	10

**ROUT ID outliers**

	<b>Control</b>	<b>Fipronil</b>
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	0	1

**Normality after ID outliers**

	Control	Fipronil
Test for normal distribution		
D'Agostino & Pearson test		
K2	7,899	0,7462
P value	0,0193	0,6886
Passed normality test (alpha=0.05)?	No	Yes
P value summary	*	ns
Anderson-Darling test		
A2*	1,494	0,8450
P value	0,0003	0,0174
Passed normality test (alpha=0.05)?	No	No
P value summary	***	*
Shapiro-Wilk test		
W	0,6780	0,8054
P value	0,0005	0,0235
Passed normality test (alpha=0.05)?	No	No
P value summary	***	*
Kolmogorov-Smirnov test		
KS distance	0,2955	0,2716
P value	0,0135	0,0545
Passed normality test (alpha=0.05)?	No	Yes
P value summary	*	ns
Number of values	10	9

**Social compartment****Normality**

	<b>Controle</b>	<b>Fipronil</b>
Test for normal distribution		
Shapiro-Wilk test		
W	0,9054	0,9072
P value	0,2507	0,2620
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Number of values	10	10

**ROUT ID outliers**

	<b>Controle</b>	<b>Fipronil</b>
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	0	0

**Neutral compartment****Normality**

	<b>Controle</b>	<b>Fipronil</b>
Test for normal distribution		
D'Agostino & Pearson test		
K2	3,037	0,7938
P value	0,2190	0,6724
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Anderson-Darling test		
A2*	0,5283	0,2129
P value	0,1317	0,7963
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Shapiro-Wilk test		
W	0,8861	0,9520
P value	0,1531	0,6928
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Kolmogorov-Smirnov test		
KS distance	0,2365	0,1398
P value	>0,1000	>0,1000
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Number of values	10	10

**ROUT ID outliers**

	<b>Controle</b>	<b>Fipronil</b>
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	0	0

**Non-social compartment****Normality**

	<b>Controle</b>	<b>Fipronil</b>
Test for normal distribution		
D'Agostino & Pearson test		
K2	1,326	3,016
P value	0,5152	0,2214
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Anderson-Darling test		
A2*	0,4959	0,3565
P value	0,1620	0,3800
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Shapiro-Wilk test		
W	0,8750	0,9130
P value	0,1143	0,3019
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Kolmogorov-Smirnov test		
KS distance	0,2358	0,1559
P value	>0,1000	>0,1000
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Number of values	10	10

**Root ID outliers**

	<b>Controle</b>	<b>Fipronil</b>
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	0	0

**Sexual preferences****Female compartment****Normality**

	<b>Controle</b>	<b>Fipronil</b>
Test for normal distribution		
D'Agostino & Pearson test		
K2	0,4765	8,260
P value	0,7880	0,0161
Passed normality test (alpha=0.05)?	Yes	No
P value summary	ns	*
Anderson-Darling test		
A2*	0,2498	0,5249
P value	0,6639	0,1346
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Shapiro-Wilk test		
W	0,9423	0,8713
P value	0,5789	0,1034
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Kolmogorov-Smirnov test		
KS distance	0,1488	0,2063
P value	>0,1000	>0,1000
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Number of values	10	10

**ROUT ID outliers**

	<b>Controle</b>	<b>Fipronil</b>
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	0	0

**Male compartment****Normality**

	<b>Controle</b>	<b>Fipronil</b>
Test for normal distribution		
D'Agostino & Pearson test		
K2	0,5377	0,3223
P value	0,7642	0,8512
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Anderson-Darling test		
A2*	0,2040	0,1680
P value	0,8246	0,9086
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Shapiro-Wilk test		
W	0,9626	0,9746
P value	0,8152	0,9301
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Kolmogorov-Smirnov test		
KS distance	0,1270	0,1370
P value	>0,1000	>0,1000
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Number of values	10	10

**ROUT ID outliers**

	<b>Controle</b>	<b>Fipronil</b>
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	0	0

**Female interaction****Normality**

	<b>Controle</b>	<b>Fipronil</b>
Test for normal distribution		
D'Agostino & Pearson test		
K2	3,275	1,029
P value	0,1944	0,5978
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Anderson-Darling test		
A2*	0,6553	0,3182
P value	0,0607	0,4748
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Shapiro-Wilk test		
W	0,8446	0,9281
P value	0,0501	0,4294
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Kolmogorov-Smirnov test		
KS distance	0,2466	0,1845
P value	0,0858	>0,1000
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Number of values	10	10

**ROUT ID outliers**

	<b>Controle</b>	<b>Fipronil</b>
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	0	0

**Male interaction****Normality**

	<b>Controle</b>	<b>Fipronil</b>
Test for normal distribution		
D'Agostino & Pearson test		
K2	1,079	1,218
P value	0,5831	0,5440
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Anderson-Darling test		
A2*	0,3450	0,2468
P value	0,4063	0,6750
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Shapiro-Wilk test		
W	0,9231	0,9523
P value	0,3834	0,6960
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Kolmogorov-Smirnov test		
KS distance	0,1805	0,1595
P value	>0,1000	>0,1000
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Number of values	10	10

**ROUT ID outliers**

	<b>Controle</b>	<b>Fipronil</b>
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	0	0

**Female interaction attempts****Normality**

	<b>Controle</b>	<b>Fipronil</b>
Test for normal distribution		
D'Agostino & Pearson test		
K2	1,649	12,16
P value	0,4385	0,0023
Passed normality test (alpha=0.05)?	Yes	No
P value summary	ns	**
Anderson-Darling test		
A2*	0,2321	1,208
P value	0,7292	0,0019
Passed normality test (alpha=0.05)?	Yes	No
P value summary	ns	**
Shapiro-Wilk test		
W	0,9450	0,7192
P value	0,6098	0,0015
Passed normality test (alpha=0.05)?	Yes	No
P value summary	ns	**
Kolmogorov-Smirnov test		
KS distance	0,1459	0,3234
P value	>0,1000	0,0039
Passed normality test (alpha=0.05)?	Yes	No
P value summary	ns	**
Number of values	10	10

**ROUT ID outliers**

	<b>Controle</b>	<b>Fipronil</b>
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	0	2

**Normality after ID outliers**

	<b>Controle</b>	<b>Fipronil</b>
Test for normal distribution		
D'Agostino & Pearson test		
K2	1,649	11,54
P value	0,4385	0,0031
Passed normality test (alpha=0.05)?	Yes	No
P value summary	ns	**
Anderson-Darling test		
A2*	0,2321	0,6947
P value	0,7292	0,0419
Passed normality test (alpha=0.05)?	Yes	No
P value summary	ns	*
Shapiro-Wilk test		
W	0,9450	0,7981
P value	0,6098	0,0273
Passed normality test (alpha=0.05)?	Yes	No
P value summary	ns	*
Kolmogorov-Smirnov test		
KS distance	0,1459	0,2328
P value	>0,1000	>0,1000
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Number of values	10	8

**Male interaction attempts****Normality**

	Controle	Fipronil
Test for normal distribution		
D'Agostino & Pearson test		
K2	1,504	0,6889
P value	0,4713	0,7086
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Anderson-Darling test		
A2*	0,3092	0,2515
P value	0,5022	0,6577
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Shapiro-Wilk test		
W	0,9259	0,9508
P value	0,4090	0,6783
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Kolmogorov-Smirnov test		
KS distance	0,1983	0,1673
P value	>0,1000	>0,1000
Passed normality test (alpha=0.05)?	Yes	Yes
P value summary	ns	ns
Number of values	10	10

**ROUT ID outliers**

	Controle	Fipronil
Method		
ROUT (Q = 5%)		
Number of points		
# Y values analyzed	10	10
Outliers	0	0