Table S1 – supplier specs and purity

Table S1 Supplier specifications and purity analysis of NTP-provided chemicals

Molecular Weight	Chemical Name	CAS	Conc. (mM)	Supplier	Lot Number	CoA Purity (%)	Determined Purity (%)	Volume (mL)	Method
485.80	2,2',4,4'-Tetrabromodiphenyl ether	5436-43-1	20.0	Cerilliant Corp.	35081-43	98	100	5	HTS CIPS GC/MS Pkt 190
564.69	2,2',4,4',5-Pentabromodiphenyl ether	60348-60-9	20.0	Cerilliant Corp.	35081-70	96	100	5	HTS CIPS GC/MS Pkt 190
350.59	Chlorpyrifos (Dursban)	2921-88-2	20.0	Toronto Research Chemicals	3-ABY-19-1	98	99.8	5	CIPS CHEM11782 MRI2242 110730

Vial Type: 11 mL, 3 dram, Amber, Teflon lined screw cap

Table S2 - Summary of cohorts and animal numbers

Table S2 Larval activity testing

Exposure treatments, cohorts per treatment, and fish numbers

Treatment	Cohort	Fish per cohort	Fish per treatment
0.1% DMSO	1	30	92
	2	24	
	3	30	
	4	8	
0.3 µM CPF	1	30	90
	2	22	
	3	30	
	4	8	
0.01 µM BDE-47	4	8	8
0.03 µM BDE-47	4	8	8
0.1 µM BDE-47	2	23	57
	3	26	
	4	8	
0.003 µM BDE-99	1	35	98
	2	26	
	3	29	
	4	8	
0.03 µM BDE-99	2	26	61
	3	27	
	4	8	
0.3 µM BDE-99	1	31	90
	2	24	
	3	27	
	4	8	
1 µM BDE-99	6	31	31
3 µM BDE-99	6	33	65
	7	32	
10 µM BDE-99	7	32	32
20 µM BDE-99	7	32	32

Table S3 - Summary of cohorts and animal numbers

Table S3 Adult behavior battery

Exposure treatments, cohorts per treatment, and fish numbers

Treatment	Cohort	Fish per cohort	Fish per treatment
0.1% DMSO	1 5	15 5	21
0.3 µM CPF	1 5	6 7	13
0.01 µM BDE-47	4 5	3 8	11
0.03 µM BDE-47	5	9	9
0.1 µM BDE-47	5	12	12
0.003 µM BDE-99	1 5	12 16	28
0.3 µM BDE-99	1 4 5	16 4 6	26

Table S4 - survival

Table S4 Survival and dysmorphogenesis at 6 dpf

Treatment	Cohort	Number of embryos exposed	% survival	Average % survival	Comments
0.1% DMSO	1	40	75	82.8	
	2	40	90		
	3	40	92.5		
	4	30	76.7		
	5	25	80		
0.3 µM CPF	1	40	75	75	
	2	40	55		
	3	40	85		
	4	30	80		
	5	25	80		
0.01 µM BDE-47	4	30	66.7	59.4	
	5	25	52		Most died in first 24h
0.03 µM BDE-47	4	30	86.7	69.4	
	5	25	52		Most died in first 24h
0.1 µM BDE-47	2	40	75	74.9	
	3	40	75		
	4	30	73.3		
	5	25	76.2		
0.3 µM BDE-47	1	40	82.5	27.5	
	2	40	0		All developed spinal curvature
	3	40	0		
0.003 µM BDE-99	1	40	87.5	83	
	2	40	80		
	3	40	87.5		
	4	30	80		
	5	25	80		
0.03 µM BDE-99	1	40	0	77.6	Most died in first 24h
	2	40	80		
	3	40	75		
	4	30	83.3		
	5	25	72		
0.3 µM BDE-99	1	40	77.5	75.6	
	2	40	80		
	3	40	75		
	4	30	73.3		
	5	25	72		
1 µM BDE-99	6	40	77.5	77.5	
3 µM BDE-99	6	40	82.5	82.5	
	7	40	82.5		
10 µM BDE-99	7	40	97.5	97.5	
20 µM BDE-99	7	40	85	85	

Table S5 Linear regression parameters for novel tank distance from bottom

Parameter	0.1% DMSO	0.3 µM CPF	0.01 µM BDE-47	0.03 µM BDE-47	0.1 µM BDE-47
Best-fit values ± SEM					
Slope	0.3667 ± 0.0676	0.2581 ± 0.06394	0.1773 ± 0.1016	0.07673 ± 0.14	-0.0002003 ± 0.07383
X-intercept	-1.606	-6.461	-9.382	-31.3	12624
95% Confidence Intervals					
Slope	0.2324 to 0.5011	0.1301 to 0.3861	-0.02699 to 0.3817	-0.2066 to 0.3601	-0.148 to 0.1476
Are the slopes different from DMSO control?		No*	No*	Yes	Yes
F		1.23	2.572	4.449	12.83
DFn		1	1	1	1
DFd		146	136	126	146
P value		0.2692	0.1111	0.0369	0.0005

***Elevations are significantly different

Table S6 Linear regression parameters for post-tap activity

Parameter	0.1% DMSO	0.3 µM CPF	0.01 µM BDE-47	0.03 µM BDE-47	0.1 µM BDE-47	0.003 µM BDE-99	0.3 µM BDE-99
Best-fit values ± SEM							
Slope	-1.017 ± 0.2503	-0.184 ± 0.3137	0.2159 ± 0.1979	-0.01993 ± 0.2454	-0.4503 ± 0.2699	-0.01448 ± 0.195	-0.3554 ± 0.1722
X-intercept	19.16	72.48	-33.5	438.8	26.52	754.1	35.37
95% Confidence Intervals							
Slope	-1.511 to -0.5235	-0.8052 to 0.4372	-0.1764 to 0.6081	-0.5075 to 0.4677	-0.9847 to 0.08421	-0.3983 to 0.3694	-0.6944 to -0.0164
Are the slopes different from DMSO control?		Yes	Yes	Yes	No	Yes	Yes
F		4.303	11.6	6.176	2.213	10.2	5.075
DFn		1	1	1	1	1	1
DFd		303	296	276	306	466	466
P value		0.0389	0.0008	0.0135	0.1379	0.0015	0.0248

Figure S1 – Larval activity

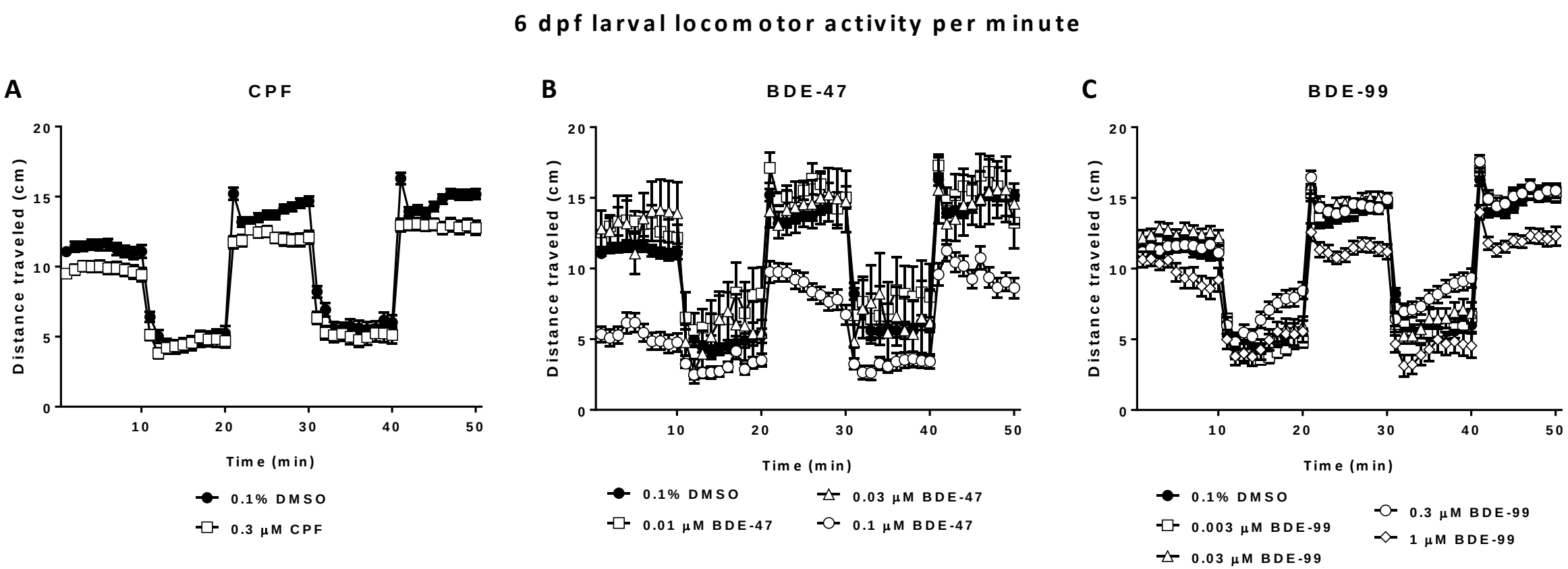

Figure S2 - Tap

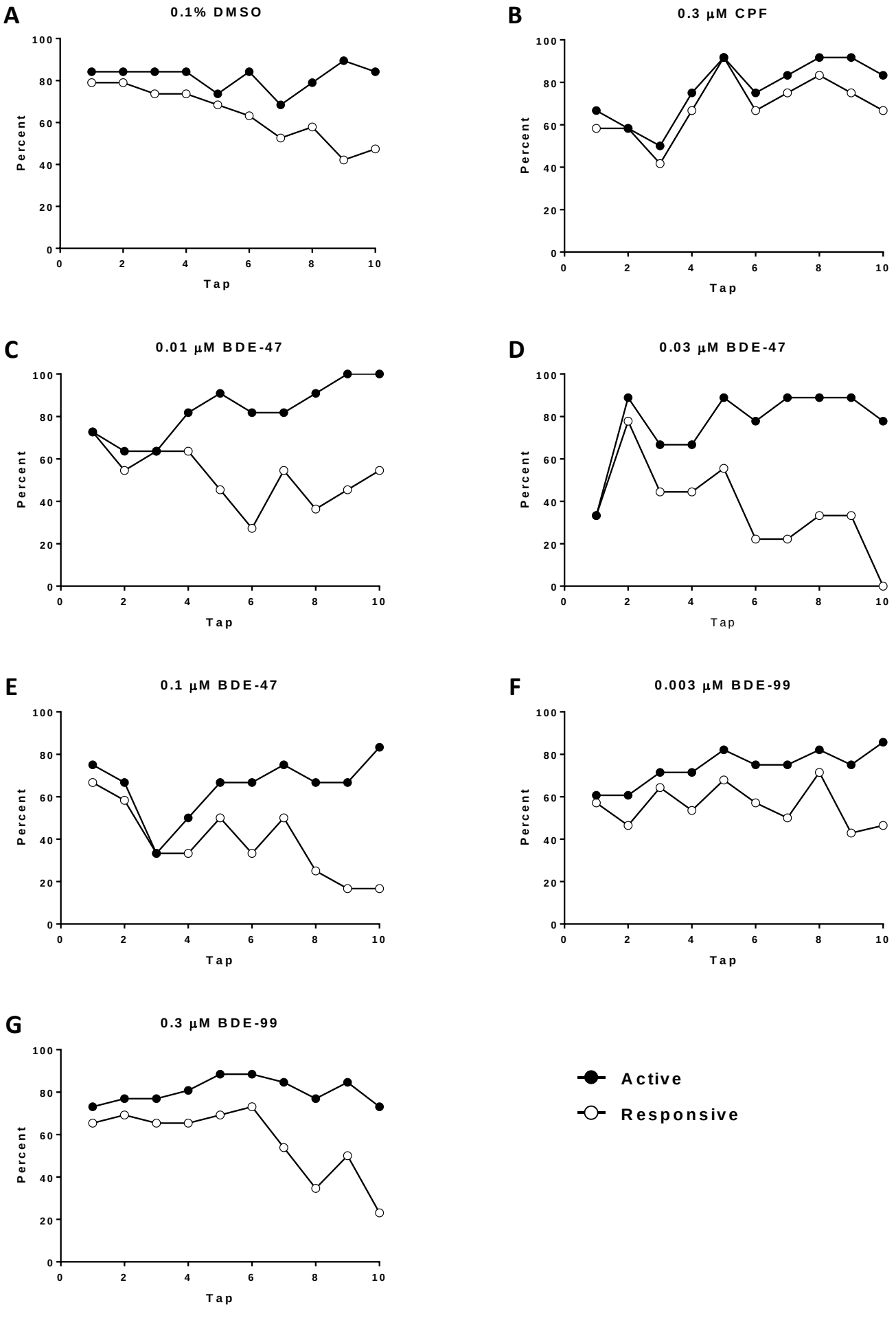

Figure S3 - shoaling

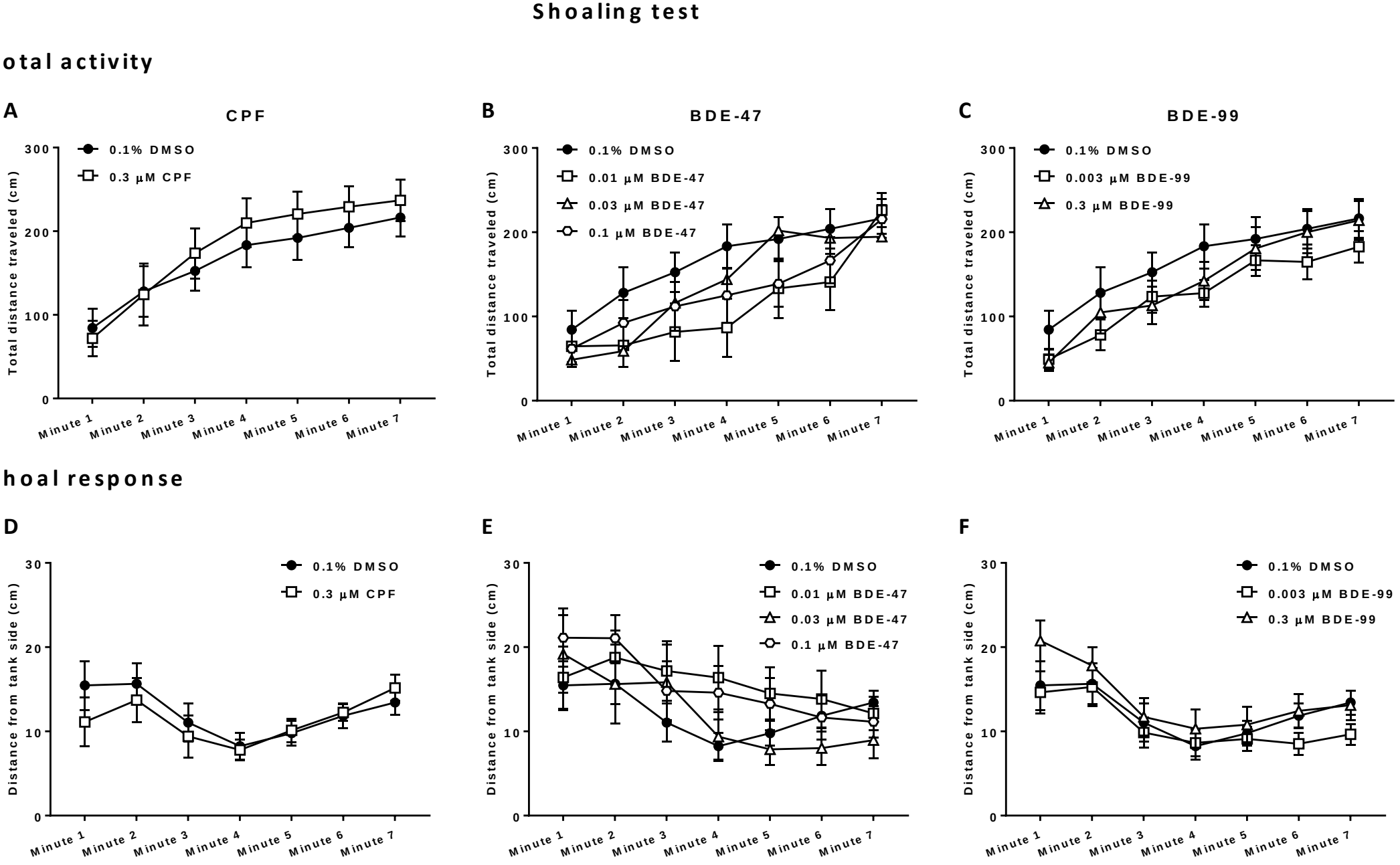
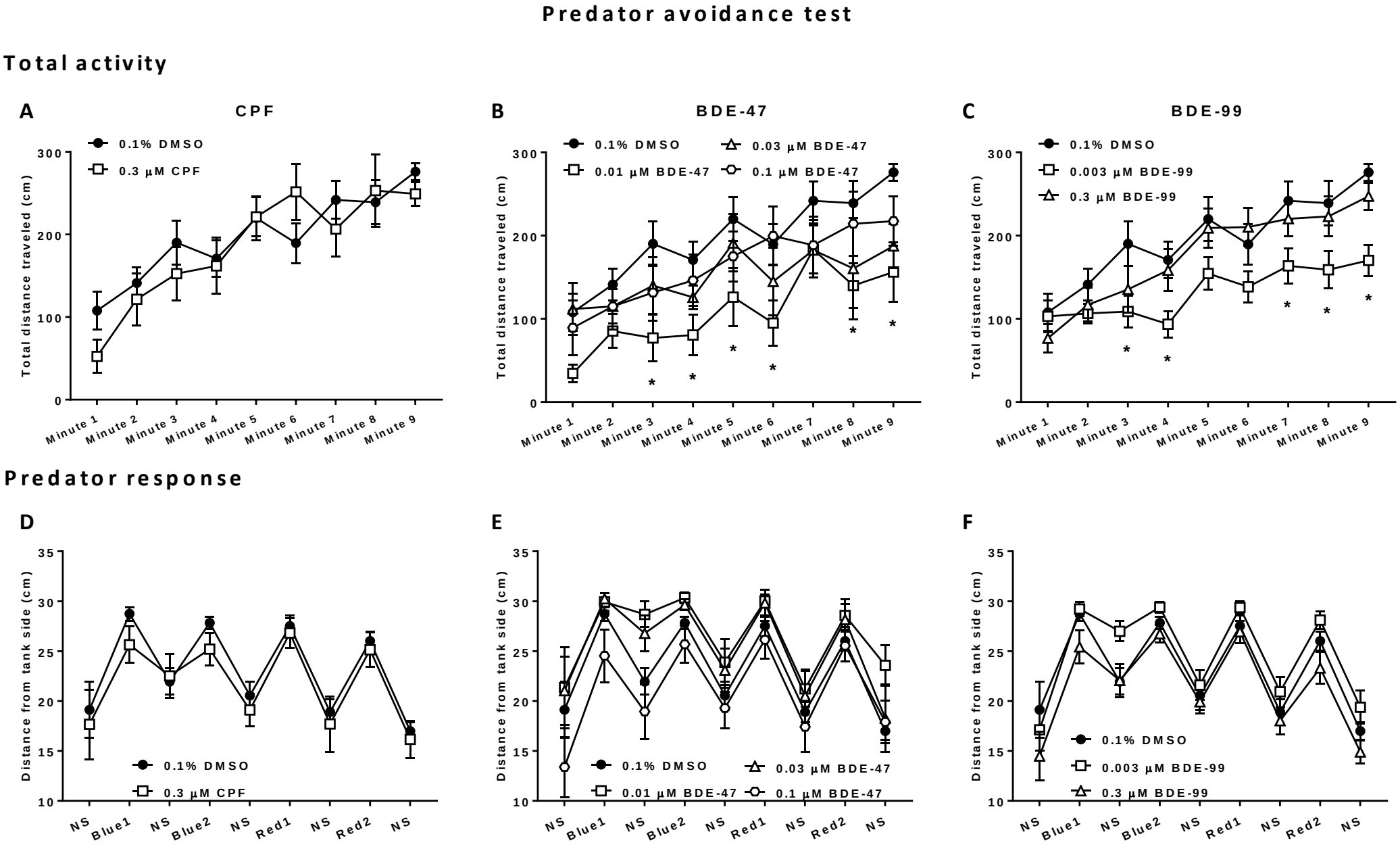
Figure S4 - predator