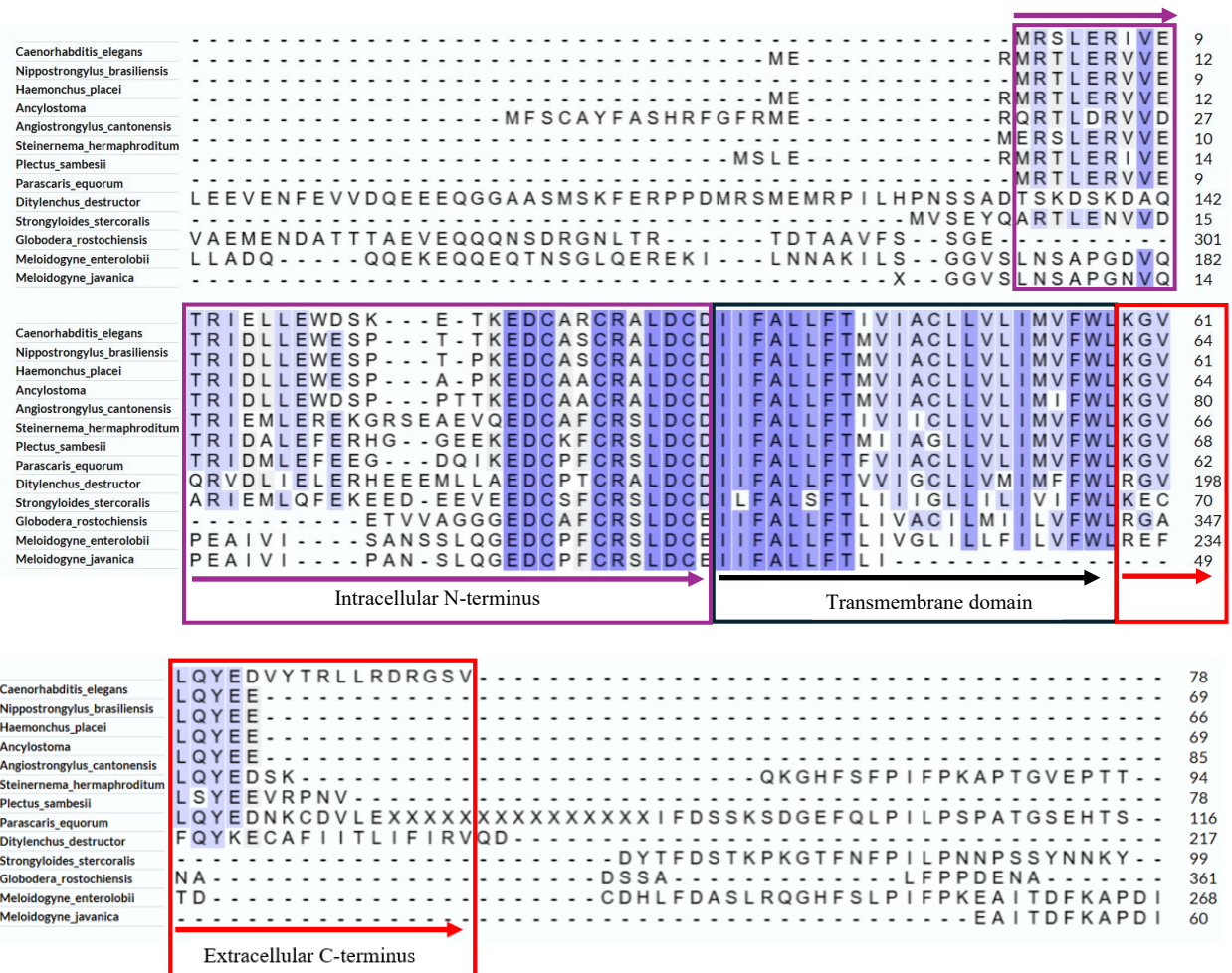


Supplementary 2: Movement of *C. elegans* and *G. rostochiensis* in M9 (video recording)

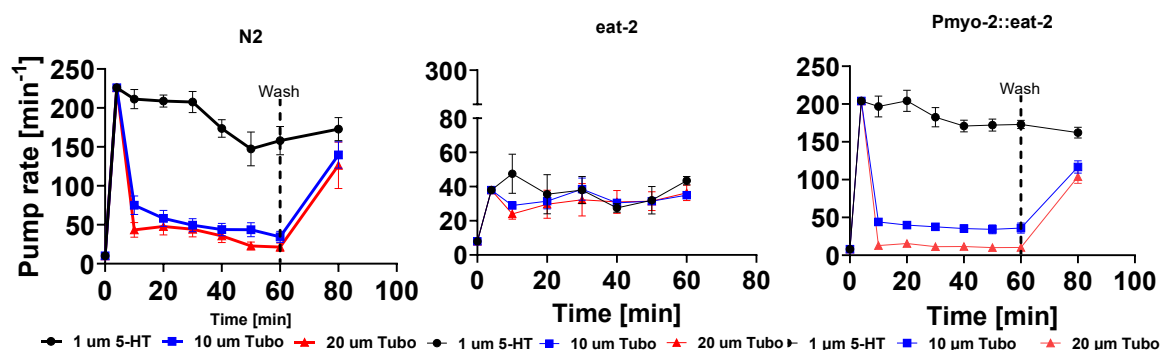
Supplementary 3: Pharyngeal pumping and Stylet thrusting in 5-HT stimulated worms (video recording)



Percentage identity

1: <i>Caenorhabditis elegans</i>	100.00
2: <i>Nippostrongylus brasiliensis</i>	86.36
3: <i>Haemonchus placei</i>	84.85
4: <i>Ancylostoma</i>	84.85
5: <i>Angiostrongylus cantonensis</i>	81.82
6: <i>Steinernema hermaphroditum</i>	77.94
7: <i>Plectus sambesii</i>	70.42
8: <i>Parascaris equorum</i>	67.95
9: <i>Ditylenchus destructor</i>	47.44
10: <i>Strongyloides stercoralis</i>	54.10
11: <i>Globodera rostochiensis</i>	59.09
12: <i>Meloidogyne enterolobii</i>	40.68
13: <i>Meloidogyne javanica</i>	43.90

Supplementary 4: EAT-18 transcript alignment for multiple nematode species. The sequence alignment revealed a high degree of conservation of EAT-18 among free living, animal parasitic and plant parasitic nematodes with high identity percentages.



Supplementary 5: Effect of tubocurarine on exposed *C. elegans* pharyngeal muscles. 5-HT induced pharyngeal pumping on cut-head worms in wildtype (WT) worms. This pump was blocked by tubocurarine. This block recovered after a 10 minute wash and re-exposure to 5-HT. Tubocurarine had no effect on *eat-2* mutant. Rescued *eat-2* mutants recovered sensitivity to tubocurarine.

Table 1. 96 compounds screened

	Substance (CSN)	CLASS	Originating project	Relevant background
1	CSAA422600	Project 1	Project 1	Project 1 - novel neonic type compounds with different receptor selectivity
2	CSDK280445	Project 1 Lead class 2	Project 1	Project 2 - cyanotropans, cyanopyridines & tropane ethers
3	CSDK360450	Project 1 Lead class 2	Project 1	Project 3 - low MW synthetic mimics of spinosyns
4	CSDK360451	Project 1 Lead class 2	Project 1	
5	CSDK481447	Project 1 Lead class 3	Project 1	
6	CSDK481481	Project 1 Lead class 3	Project 1	
7	CSDK481483	Project 1 Lead class 3	Project 1	
8	CSDK501075	Project 1 Lead 4 class	Project 1	
9	CSDK504144	Project 1 Lead class 3	Project 1	
10	CSDK504740	Project 1 Lead class 2	Project 1	
11	CSDK513708	Project 1	Project 1	
12	CSDK514177	Project 1 Lead 4 class	Project 1	
13	CSDK518727	Project 1 Lead class 3	Project 1	

14	CSDK518728	Project 1 Lead 4 class	Project 1	
15	CSDK520963	Project 1 Lead class 3	Project 1	
16	CSDK521168	Project 1 Lead class 3	Project 1	
17	CSDK521259	Project 1 Lead class 3	Project 1	
18	CSDK522687	Project 1 Lead class 3	Project 1	
19	CSDK522994	Project 1 Lead class 3	Project 1	
20	CSDK533515	Project 1 Lead 4 class	Project 1	
21	CSDK533950	Project 1 Lead class 3	Project 1	
22	CSDK534908	Project 1 Lead 4 class	Project 1	
23	CSDK534910	Project 1 Lead 4 class	Project 1	
24	CSDK534912	Project 1 Lead 4 class	Project 1	
25	CSDK534914	Project 1 Lead 4 class	Project 1	
26	CSDK534934	Project 1 Lead 4 class	Project 1	
27	CSDK535009	Project 1 Lead 6 class	Project 1	
28	CSDK537272	Project 1 Lead 4 class	Project 1	
29	CSDK545259	Project 1 Lead class 8	Project 1	
30	CSDK545260	Project 1 Lead class 8	Project 1	
31	CSDK546280	Project 1 Lead 4 class	Project 1	
32	CSDK546281	Project 1 Lead 4 class	Project 1	
33	CSDK546282	Project 1 Lead 4 class	Project 1	
34	CSDK546289	Project 1 Lead 4 class	Project 1	
35	CSDK547167	Project 1 Lead 4 class	Project 1	
36	CSDK549301	Project 1 Lead 6 class	Project 1	
37	CSDK549304	Project 1 Lead 6 class	Project 1	
38	CSDK549680	Project 1	Project 1	

39	CSDK553216	Project 1 Lead class 8	Project 1	
40	CSDK555436	Project 1 Lead class 3	Project 1	
41	CSDK555655	Project 1 Lead class 3	Project 1	
42	CSDK556214	Project 1 Lead class 3	Project 1	
43	CSDK556897	Project 1	Project 1	
44	CSDK558485	Project 1 Lead class 3	Project 1	
45	CSDK559680	Project 1 Lead 4 class	Project 1	
46	CSDK559710	Project 1 Lead class 3	Project 1	
47	CSDK561603	Project 1 Lead class 3	Project 1	
48	CSDK563606	Project 1 Lead class 3	Project 1	
49	CSDK564218	Project 1 Lead class 3	Project 1	
50	CSDK564224	Project 1 Lead class 3	Project 1	
51	CSDK564275	Project 1 Lead class 3	Project 1	
52	CSDK567963	Project 1	Project 1	
53	CSCA644082	Cyanotropane	Project 2	
54	CSCA145879	tropane ethers	Project 2	
55	CSCA145919	Tropane ethers	Project 2	
56	CSCA146072	Tropane ethers	Project 2	
57	CSCA147216	Tropane ethers	Project 2	
58	CSCA147278	Tropane ethers	Project 2	
59	CSCA642229	tropane ethers	Project 2	
60	CSCC905802	Tropane ethers	Project 2	
61	CSCA647677	Cyanotropane	Project 2	
62	CSCA144260	Tropane ethers	Project 2	
63	CSCA144476	Tropane ethers	Project 2	
64	CSCA144549	Tropane ethers	Project 2	
65	CSCA642719	tropane ethers	Project 2	
66	CSCA144279	Tropane ethers	Project 2	
67	CSCA643626	Cyanotropane	Project 2	
68	CSCA148876	Tropane ethers	Project 2	
69	CSCC875738	Cyanotropane	Project 2	
70	CSCA644692	Cyanotropane	Project 2	
71	CSCC843120	Tropenes	Project 2	
72	CSCA647417	Cyanotropane	Project 2	
73	CSCA643672	Cyanotropane	Project 2	

74	CSCA646688	Cyanotropane	Project 2	
75	CSCA651232	Tropenes	Project 2	
76	CSCA652565	Tropenes	Project 2	
77	CSAA735151	Cyanotropane	Project 2	
78	CSAA719439	Cyanotropane	Project 2	
79	CSAA719437	Cyanotropane	Project 2	
80	CSCC825319	Tropane ethers	Project 2	
81	CSCA652541	Tropenes	Project 2	
82	CSCD008251	Tropenes	Project 2	
83	CSCA645483	cyanopyridine	Project 2	
84	CSCC841342	Tropenes	Project 2	
85	CSCA642262	Tropane ethers	Project 2	
86	CSAA375588	Neonicotinoids		
87	CSCA643009	Spinosyns		
88	CSCC151725	Nereistoxins		
89	CSCV767341	Tebanicline		
90	CSAA045292	Nicotinoids		
91	CSDF690580		Project 3	
92	CSAA241833	Neonicotinoids		
93	CSCD676431	Sulfoximines		
94	CSCC818722			
95	CSAA434568	Spinosyns		
96	CSDH053139			