

Table S1. MAPK activation frequencies

Genotype	Sperm (Y/N)	MAPK positive oocytes per gonad	<i>n</i> (% gonads stained)
1. <i>fog-2(q71)</i>	N	0.05	83 (04)
2. <i>itr-1(sa73); fog-2(q71)</i>	N	0.10	79 (09)
3. wild-type	Y	1.32	72 (74)
4. <i>itr-1(sa73)</i>	Y	2.85	33 (84)
5. <i>unc-24(e138)</i>	Y	1.20	35 (78)
6. <i>itr-1(sy290gf) unc-24(e138)</i>	Y	0.33	52 (27)
7. <i>fog-3(q443)</i>	N	0.03	67 (03)
8. <i>itr-1(sy290gf) unc-24(e138); fog-3(q443)</i>	N	0.08	53 (08)
9. <i>rrf-1(pk1417)</i>	Y	1.16	51 (57)
10. <i>itr-1</i> RNAi	Y	2.08	37 (84)
11. <i>itr-1</i> RNAi <i>rrf-1(pk1417)</i>	Y	1.85	59 (78)
12. <i>nmr-1(ak4); fog-2(q71)</i>	N	0.27	88 (23)
13. <i>nmr-1(ak4)</i>	Y	1.25	42 (57)
14. <i>unc-43(n1186); fog-3(q443)</i>	N	0.05	43 (05)
15. <i>unc-43(n1186)</i>	Y	0.93	40 (63)
16. <i>unc-43(n498gf); fog-3(q443)</i>	N	0.63	38 (31)
17. <i>vab-1(dx31)*</i>	Y	2.57	37 (84)
18. <i>vab-1(dx31); itr-1(sy290gf) unc-24(e138)</i>	Y	0.26	72 (21)

All alleles are loss-of-function, unless otherwise noted as gain-of-function (gf).

*New data that was originally described in Miller et al. 2003.

Table S2. Basal sheath contraction rates in *rrf-1(pk1417) and *fem-3(q20)[†]* mutants**

Genotype	Sperm (Y/N)	Contractions per minute	<i>n</i>
1. Wild type	Y	9.8±1.4	25
2. <i>nmr-1</i> RNAi	Y	18.3±3.6	12
3. <i>unc-43</i> RNAi	Y	19.3±3.5	11
4. <i>rrf-1(pk1417)*</i>	Y	9.6±1.6	11
5. <i>nmr-1</i> RNAi <i>rrf-1(pk1417)</i>	Y	9.2±1.5	15
6. <i>unc-43</i> RNAi <i>rrf-1(pk1417)</i>	Y	9.8±1.1	11
7. <i>fem-3(q20)[†]</i>	Y	18.1±5.1	17
8. <i>nmr-1</i> RNAi <i>fem-3(q20)</i>	Y	26.7±6.5	9
9. <i>unc-43</i> RNAi <i>fem-3(q20)</i>	Y	29.3±6.9	10

**rrf-1(pk1417)* mutants are resistant to RNAi in somatic cells, but sensitive to RNAi in the germ line (Sijen et al., 2001).

[†]*fem-3(q20)* mutant gonads grown at 25°C generate sperm and sheath cells, but not oocytes (Barton et al., 1987). The basal contraction rate of these mutants is higher than wild type, suggesting that an oocyte-dependent pathway negatively regulates contraction.