Supplemental Table 1: summary statistics of all aging experiments.

Mean lifespan, restricted mean survival time. SEM, standard error of the mean. N, total number of animals in the indicated experimental group. Censored, number of censored observations. *P* values determined with the log-rank test, adjusted with the Bonferroni-Holm method to control for multiple comparisons. "*P* vs. control" are comparisons with the indicated control group in each experiment. "*P* vs. 50 mM NaCl" are comparisons between groups which only differ by NaCl concentration (genotype, FUdR treatment, etc. are identical). "*P* vs. no FUdR" are comparisons between groups which only differ by FUdR concentration (genotype, NaCl concentration, etc. are identical).

	Experimental group	Mean lifespan (days)	SEM	Lifespan percentiles (days) 25%	50%	75%	95%	N (censored)	*P* vs. control	*P* vs. 50 mM NaCl	*P* vs. no FUdR
Experiment 1, shown in Figure 1A and Figure S1. 1 replicate, 25° C, 400 µM FUdR.	50 mM	14.8	0.2	13	15	16	18	69(0)	control		
	150 mM	17.7	0.4	16	19	20	21	69(0)	<0.0001		
	250 mM	20.8	0.5	19	21.5	23	26	50(0)	<0.0001		
	350 mM	20.8	0.4	19	21	24	26	57(0)	<0.0001		
	450 mM	16.0	0.6	13	16	19	24	48(0)	0.0017		
Experiment 2, shown in Figure 1B. 1 replicate, 25° C, 400 µM FUdR.	50 mM NaCl	15.5	0.2	14	17	17	19	96(1)	control		
	300 mM NaCl	20.5	0.4	18	20	23	27	104(1)	<0.0001		
	250 mM KCl	19.1	0.5	16	20	23	25	60(0)	<0.0001		
	500 mM glycerol	20.7	0.4	18	20	23	25	67(0)	<0.0001		
	500 mM sorbitol	21.6	0.5	18	20	25	30	106(0)	<0.0001		
Experiment 3, shown in Figure 2A. 2 pooled replicates, 20° C, 0 or 400 µM FUdR.	50 mM	16.6	0.4	11	16	20	25	193(60)	control		
	100 mM	14.0	0.4	10	14	18	22	178(40)	0.0001		
	200 mM	11.1	0.3	8	10	11	18	194(34)	<0.0001		
	300 mM	10.0	0.2	8	10	11	16	194(24)	<0.0001		
	400 mM	9.5	0.2	8	10	11	14	193(23)	<0.0001		
	500 mM	2.7	0.1	2	2	2	6	202(2)	<0.0001		
	50 mM + FUdR	16.0	0.3	14	18	18	20	188(40)	0.2123		
	100 mM + FUdR	17.9	0.3	16	18	20	22	192(22)	1.0000	<0.0001	<0.0001
	200 mM + FUdR	19.9	0.3	18	20	22	27	197(5)	<0.0001	<0.0001	<0.0001
	300 mM + FUdR	19.2	0.2	18	20	22	25	192(4)	0.0082	<0.0001	<0.0001
	400 mM + FUdR	17.0	0.4	14	18	20	24	196(9)	1.0000	0.0046	<0.0001
	500 mM + FUdR	2.7	0.2	2	2	2	4	196(0)	<0.0001	<0.0001	1.0000

	Experimental group	Mean lifespan (days	SEM	Lifespan percentiles (days) 25%	50%	75%	95%	N (censored)	*P* vs. control	*P* vs. 50 mM NaCl	*P* vs. no FUdR
Experiment 4, shown in Figure 2B. 3 pooled replicates, 20° C, 0, 8, 40 or 400 µM FUdR. **Experiment 7**, shown in Figure 2B. 3 pooled replicates, 20° C, 0, 8, 40 or 400 µM FUdR.	50 mM, 0 µM FUdR	17.1	0.5	13	17	21	27	226(73)	control		
	50 mM, 8 µM FUdR	19.7	0.5	14	19	27	31	228(53)	0.0006		
	50 mM, 40 µM FUdR	18.6	0.4	14	17	23	28	226(16)	0.1555		
	50 mM, 400 µM FUdR	18.6	0.3	17	17	21	24	232(88)	0.2186		
	300 mM, 0 µM FUdR	13.0	0.3	11	11	15	21	241(93)	<0.0001		
	300 mM, 8 µM FUdR	13.3	0.3	11	13	15	21	232(9)	<0.0001	<0.0001	1.0000
	300 mM, 40 µM FUdR	15.6	0.3	13	15	19	24	239(18)	0.0057	<0.0001	<0.0001
	300 mM, 400 µM FUdR	21.7	0.3	19	22	24	28	232(11)	<0.0001	<0.0001	<0.0001
Experiment 5, shown in Figure 2C. 3 pooled replicates, 25° C, 400 µM FUdR.	N2 50 mM	12.0	0.1	11	12	14	14	279(5)	control		
	N2 300 mM	17.0	0.3	12	17	21	25	281(2)	<0.0001		
	osm-11 50 mM	13.6	0.2	11	14	17	20	348(7)	<0.0001		
	osm-11 300 mM	15.4	0.3	12	16	20	24	290(6)	<0.0001	<0.0001	
Experiment 6, shown in Figure 2C. 3 pooled replicates, 25° C, 400 µM FUdR.	N2 50 mM	12.7	0.1	12	13	14	15	277(3)	control		
	N2 300 mM	16.2	0.3	12	17	21	24	296(0)	<0.0001		
	osm-7 50 mM	14.5	0.2	12	14	17	19	273(4)	<0.0001		
	osm-7 300 mM	16.9	0.4	11	16	23	30	278(0)	<0.0001	<0.0001	
Experiment 7, shown in Figure 2D. 2 pooled replicates, 20° C, 0 or 400 µM FUdR.	N2 50 mM	17.1	0.4	14	16	21	25	149(26)	control		
	N2 300 mM	10.0	0.2	8	9	10	16	149(23)	<0.0001		
	N2 50 mM + FUdR	17.0	0.3	16	18	19	21	151(37)	0.3949		
	N2 300 mM + FUdR	19.8	0.3	18	19	23	25	150(1)	0.0016	<0.0001	<0.0001
	osm-7; osm-11 50 mM	12.7	0.4	10	12	14	18	145(92)	<0.0001		
	osm-7; osm-11 300 mM	9.5	0.2	8	10	10	14	153(40)	<0.0001	<0.0001	
	osm-7; osm-11 50 mM + FUdR	22.3	0.5	18	23	27	32	147(12)	<0.0001		<0.0001
	osm-7; osm-11 300 mM + FUdR	21.0	0.6	16	21	25	32	140(5)	<0.0001	0.4717	<0.0001

	Experimental group	Mean lifespan (days)	SEM	Lifespan percentiles (days) 25%	50%	75%	95%	N (censored)	*P* vs. control	*P* vs. 50 mM NaCl	*P* vs. no FUdR
Experiment 8, shown in Figure 3A. 3 pooled replicates, 20° C, 0 or 400 µM FUdR.	*control(RNAi)* 50 mM	13.9	0.4	11	13	18	22	149(2)	control		
	control(RNAi) 300 mM	8.3	0.3	6	8	11	13	151(6)	<0.0001		
	control(RNAi) 50 mM + FUdR	16.1	0.4	13	18	20	22	151(3)	0.0129		
	control(RNAi) 300 mM + FUdR	21.5	0.3	20	22	25	27	150(6)	<0.0001	<0.0001	<0.0001
	tyms-1(RNAi) 50 mM	15.7	0.4	13	16.5	20	22	148(10)	0.0521		
	tyms-1(RNAi) 300 mM	21.2	0.4	20	22	25	27	150(0)	<0.0001	<0.0001	
	tyms-1(RNAi) 50 mM + FUdR	17.6	0.4	13	18	20	25	151(0)	<0.0001		0.0070
	tyms-1(RNAi) 300 mM + FUdR	24.6	0.3	22	25	27	29	150(0)	<0.0001	<0.0001	<0.0001
Experiment 9, shown in Figure 3B. 3 pooled replicates, 20° C, 0 or 400 µM FUdR.	N2 50 mM	17.4	0.3	12	18	22	26	314(41)	control		
	N2 300	8.9	0.2	8	8	10	14	322(80)	<0.0001		
	N2 50 mM + FUdR	16.1	0.3	12	16	20	24	318(27)	0.0003		
	N2 300 mM + FUdR	24.0	0.3	20	24	28	32	322(14)	<0.0001	<0.0001	<0.0001
	nth-1 50 mM	18.6	0.4	14	20	22	28	315(34)	0.0405		
	nth-1 300 mM	8.6	0.1	8	8	10	14	313(50)	<0.0001	<0.0001	
	nth-1 50 mM + FUdR	17.0	0.3	14	18	22	24	316(36)	0.0612		<0.0001
	nth-1 300 mM + FUdR	17.7	0.3	14	18	20	24	313(4)	0.2443	0.2443	<0.0001
Experiment 10, shown in Figure 5C. 3 pooled replicates, 25° C, 400 µM FUdR.	N2 50 mM	12.4	0.2	11	13	14	16	279(2)	control		
	N2 300 mM	18.0	0.4	13	19	22	26	253(0)	<0.0001		
	sir-2.1 50 mM	14.0	0.1	12	14	15.5	18	296(0)	<0.0001		
	sir-2.1 300 mM	18.3	0.3	15	19	21	25	277(0)	<0.0001	<0.0001	
	sir-2.2 50 mM	12.3	0.1	11	12	14	15	334(0)	0.2825		
	sir-2.2 300 mM	15.2	0.3	12	15	19	21	292(0)	<0.0001	<0.0001	
	sir-2.3 50 mM	11.6	0.1	11	12	13	14	297(1)	<0.0001		
	sir-2.3 300 mM	14.7	0.2	11	15	18	22	299(2)	<0.0001	<0.0001	
	sir-2.4 50 mM	12.4	0.1	11	13	14	16	315(0)	0.6232		
	sir-2.4 300 mM	16.5	0.3	13	17	20	24	296(1)	<0.0001	<0.0001	

	Experimental group	Mean lifespan (days)	SEM	Lifespan percentiles (days) 25%	50%	75%	95%	N (censored)	*P* vs. control	*P* vs. 50 mM NaCl	*P* vs. no FUdR
Experiment 11, shown in Figure 5D. 3 pooled replicates, 25° C, 400 µM FUdR.	N2 50 mM	14.1	0.1	14	14	14	16	261(1)	control		
	N2 300 mM	18.0	0.4	13	18	20	26	193(6)	<0.0001		
	sir-2.1; *sir-2.2*; *sir-2.4* 50 mM	14.2	0.1	14	14	16	19	286(4)	0.7255		
	sir-2.1; *sir-2.2*; *sir-2.4* 300 mM	14.6	0.2	11	15	18	22	316(0)	0.0001	0.0002	
	sir-2.1; *sir-2.3*; *sir-2.4* 50 mM	14.9	0.1	14	14	16	19	331(0)	<0.0001		
	sir-2.1; *sir-2.3*; *sir-2.4* 300 mM	16.4	0.3	13	18	20	22	307(0)	<0.0001	<0.0001	
Experiment 12, shown in Figure 6C. 2 pooled replicates, 20° C, 0 or 400 µM FUdR	N2 50 mM	16.4	0.4	14	16	21	27	164(41)	control		
	N2 300 mM	10.1	0.2	8	10	10	16	161(24)	<0.0001		
	N2 50 mM + FUdR	17.3	0.3	16	18	18	21	167(40)	1.0000		
	N2 300 mM + FUdR	20.0	0.3	18	21	22	25	167(3)	0.0001	<0.0001	<0.0001
	daf-16 50 mM	14.4	0.3	12	14	18	21	165(45)	0.0002		
	daf-16 300 mM	8.8	0.2	8	8	10	14	162(33)	<0.0001	<0.0001	
	daf-16 50 mM + FUdR	14.8	0.2	14	16	16	18	170(22)	0.0006		1.0000
	daf-16 300 mM + FUdR	13.9	0.2	14	14	14	18	165(4)	<0.0001	0.0002	<0.0001
Experiment 13, shown in Figure S2. 20° C, 0 or 400 µM FUdR	50 mM NaCl	11.3	0.5	6	11	16	18	89(1)	control		
	50 mM NaCl + FUdR	11.0	0.6	6	11	16	21	90(0)	1.0000		
	300 mM NaCl	8.1	0.5	4	8	11	16	88(2)	<0.0001		
	300 mM NaCl + FUdR	14.9	0.6	11	15	18	25	90(0)	0.0001	0.0006	<0.0001
	50 mM NaCl + 250 mM KCl	12.3	0.5	8	14	16	21	88(0)	1.0000		
	50 mM NaCl + 250 mM KCl + FUdR	17.8	0.5	14	18	21	25	90(0)	<0.0001	<0.0001	<0.0001
	50 mM NaCl + 500 mM glycerol	10.1	0.5	6	8	14	18	90(0)	0.8639		
	50 mM NaCl + 500 mM glycerol + FUdR	17.4	0.6	14	18	23	25	90(0)	<0.0001	<0.0001	<0.0001
	50 mM NaCl + 500 mM sorbitol	8.7	0.5	4	8	14	16	90(0)	0.0075		
	50 mM NaCl + 500 mM sorbitol + FUdR	16.5	0.7	11	16	21	28	90(0)	<0.0001	<0.0001	<0.0001

	Experimental group	Mean lifespan (days)	SEM	Lifespan percentiles (days) 25%	50%	75%	95%	N (censored)	*P* vs. control	*P* vs. 50 mM NaCl	*P* vs. no FUdR
Experiment 14, shown in Figure S4A. 1 replicate, 20° C, 0 or 400 µM FUdR.	N2 50 mM	16.1	0.7	12	14	22	27	74(21)	control		
	N2 300 mM	9.7	0.3	8	10	10	16	71(7)	<0.0001		
	N2 50 mM + FUdR	17.3	0.4	16	18	20	22	76(24)	1.0000		
	N2 300 mM + FUdR	20.7	0.4	20	22	22	27	77(2)	0.0006	<0.0001	<0.0001
	mes-1 50 mM GC+	15.5	0.6	12	14	20	24	74(13)	1.0000		
	mes-1 300 mM GC+	9.7	0.3	8	10	10	14	72(16)	<0.0001	<0.0001	
	mes-1 50 mM + FUdR GC+	17.1	0.4	14	16	20	22	75(6)	1.0000		1.0000
	mes-1 300 mM + FUdR GC+	20.3	0.5	18	20	24	27	74(11)	0.0021	0.0001	<0.0001
	mes-1 50 mM GC-	22.7	1.2	14	20	31	37	78(29)	0.0001		
	mes-1 300 mM GC-	10.7	0.4	10	10	12	18	69(2)	<0.0001	<0.0001	
	mes-1 50 mM + FUdR GC-	25.9	1.2	20	27	32	39	68(16)	<0.0001		1.0000
	mes-1 300 mM + FUdR GC-	26.6	1.0	22	27	32	37	70(5)	<0.0001	1.0000	<0.0001
Experiment 15, shown in Figure S4B. 1 replicate, 20° C, 0 or 400 µM FUdR.	N2 50 mM, live OP50	14.5	0.6	10	14	18	23	97(31)	control		
	N2 300 mM, live OP50	10.5	0.4	8	10	11	18	96(17)	<0.0001		
	N2 50 mM + FUdR, live OP50	17.3	0.4	14	18	21	21	100(50)	0.0182		
	N2 300 mM + FUdR, live OP50	19.8	0.4	18	21	21	26	99(0)	<0.0001	0.0003	<0.0001
	N2 50 mM, dead OP50	23.1	0.5	21	23	26	28	97(38)	<0.0001		
	N2 300 mM, dead OP50	16.6	0.3	16	16	18	21	93(25)	0.3139	<0.0001	
	N2 50 mM + FUdR, dead OP50	17.0	0.3	14	16	18	23	98(13)	0.0398		<0.0001
	N2 300 mM + FUdR, dead OP50	20.6	0.3	18	21	21	26	99(1)	<0.0001	<0.0001	<0.0001

	Experimental group	Mean lifespan (days)	SEM	Lifespan percentiles (days) 25%	50%	75%	95%	N (censored)	*P* vs. control	*P* vs. 50 mM NaCl	*P* vs. no FUdR
Experiment 16, shown in Figure S8C. 20° C, no FUdR.	Control 50 mM	11.8	0.6	8	11	16	21	88(0)	Control		
	Control 300 mM	7.8	0.5	4	6	11	14	90(0)	<0.0001		
	sir-2.1(OE) 50 mM	11.6	0.5	8	11	16	18	90(1)	1.0000		
	sir-2.1(OE) 300 mM	7.3	0.5	4	6	11	16	90(0)	<0.0001	<0.0001	
Experiment 17, shown in Figure S8D. 4 pooled replicates, 20° C, no FUdR.	Control 50 mM	14.2	0.2	12	14	16	20	265(13)	control		
	Control 300 mM	7.1	0.2	6	8	8	12	298(3)	<0.0001		
	sir-2.1OE; sir-2.2OE; sir-2.3 OE 50 mM	13.3	0.3	10	14	16	20	231(40)	0.0353		
	sir-2.1OE; sir-2.2OE; sir-2.3 OE 300 mM	8.6	0.2	6	8	12	18	277(0)	<0.0001	<0.0001	
Experiment 18, shown in Figure S10. 3 pooled replicates, 25° C, 400 μM FUdR.	N2 50 mM	14.8	0.2	13	15	16	19	259(4)	control		
	N2 300 mM	19.1	0.3	15	20	22	26	255(18)	<0.0001		
	daf-16 50 mM	11.6	0.1	11	12	12	14	265(3)	<0.0001		
	daf-16 300 mM	10.0	0.1	8	11	11	12	280(5)	<0.0001	<0.0001	
	osm-7; *osm-11*; *daf-16* 50 mM	10.7	0.1	10	11	12	15	256(1)	<0.0001		
	osm-7; *osm-11*; *daf-16* 300 mM	8.7	0.1	7	9	10	12	275(2)	<0.0001	<0.0001	