Supplemental Information:

Table S1: Information on development and size of colonies used in this study. The number of workers sampled from different colonies for each of the different analyses is indicated in parentheses.

Colony	Sample size	Gynes Produced	Males Produced	# Workers Produced
1	Cold tolerance (435), ovaries, size and mass (231)	Never	Week 13	674
2	Cold tolerance (485), ovaries, size and mass (241)	Never	Week 13	759
3	Cold tolerance (233), lipids (26)	Week 6 (n=59)	Week 8	233
4	Cold tolerance (752), lipids (33)	Never	Week 7	752
5 (wild)	Cold tolerance (136), lipids (14)	Week 8 (n=30)	Week 12	230
6 (wild)	Cold tolerance (375), lipids (17)	Never	Week 13	444
7	Egg laying (118)	Week 10 (n=57)	Week 9	150
8	Egg laying (124)	Week 9 (n=75)	Week 9	650
9	Egg laying (144)	Week 10 (n=175)	Week 10	500
10	Egg laying (58), Gene expression (2)	Week 8 (n=94)	Unknown	Unknown
11	Gene expression (3)	Unknown	Unknown	Unknown
12	Gene expression (3)	Unknown	Unknown	Unknown
13	Gene expression (3)	Unknown	Unknown	Unknown
14	Gene expression (3)	Unknown	Unknown	Unknown
15	Gene expression (3)	Unknown	Unknown	Unknown

Table S2. The correlation between the numbers of days workers survived in 3-5°C and worker's age, body mass and oocyte size. In two of the colonies, workers were tagged and their age upon mortality was known. Body mass and ovaries were measured in workers after their death and tested against the individual survival data of workers.

Analysis	**Individual Age**	**Body mass**	**Ovary activation**
1	*Not examined*	r=0.13, n=322, p=0.02	r=0.05, n=278, p=0.32
2	*Not examined*	r=0.00, n=344, p=0.93	r=0.04, n=308, p=0.44
3	r= -0.14, n=232, p=0.03	r=0.22, n=233, p<0.001	r=0.03, n=28, p=0.85
4	r=-0.21, n=743, p<0.001	r=0.00, n=752, p=0.58	r=-0.02, n=43, p=0.86
5	*Not examined*	r=0.06, n=136, p=0.48	r=0.167, n=51, p=0.24
6	*Not examined*	r=0.04, n=376, p=0.43	r=0.07 n=58, p=0.62

Table S3. List of genes examined in this study, their accession numbers, and primer sequences

Gene	Accession Numbers	Forward primer	Reverse Primer
Arginine kinase (HKG)	XM_012391881.2	GTTGGTAGGGCAGAAGGTCA	AGGTCTACCGTCGTCTGGTG
Phospholipase A2 (HKG)	XM_003491149.3	CATTTCCGCAAGTGGTAGGT	GGTCACACCGAAACCAGATT
Forkhead transcription factor (*foxo*)	XM_024366034.1 XR_002946280.1 XR_001102115.2 XR_001102114.2 XM_012382794.2	CTCCCATCAATTGTCCCATC	CAACAACAATCGCAAACAGG
Hexamerin1 (*hex1*)	XM_012390757.2	GAATTGCCAAATCGAGAGGA	TCATTCAATTGCCACCCCCA
Heat shock protein 70 (*hsp70*)	XM_003491915.3 XM_012389299.2	TCATTGTCTGGTCGCAGGTC	ACCTATGGATGAAGAAAGGCGT
Menin (*menin*)	XM_003488543.3	AACCGATCACTGGCAACCAT	GATCACGCCTGGGTGGTTTA
Methyl farneosoate epoxidase (*mfe*)	XM_003484680.3	CAGCCGCCAATATGATACCT	GATCACGCCTGGGTGGTTTA
Phosphoenolpyruvate carboxykinase (*pepck)*	XM_012381009.2	GTTGGTAGGGCAGAAGGTCA	GCTCTACGCGACCATCTCTC
Vitellogenin (*vg*)	XM_003492229	CAGCCGCCAATATGATACCT	CCCTCCGTTCGAAGTGATAA