





Table s1.

Chi-squared tests were performed on pairs of genotypes from Table 1, to determine which percentages are statistically different from each other. Degrees of freedom = 1 for all comparisons.

<u>Genotypes compared</u>	<u>% multinucleate cells</u>	<u><math>\chi^2</math></u>	<u>p value</u>
wild type with no plasmid at 30°C	0.2 (1 of 403)	72.3	<0.001
<i>dhc1</i> $\Delta$ with no plasmid at 30°C	17.3 (60 of 347)		
wild type with no plasmid at 30°C	0.2 (1 of 403)	72.74	<0.001
wild type with <i>dhc1</i> (G-E) plasmid at 30°C	17.4 (59 of 339)		
<i>dhc1</i> $\Delta$ with no plasmid at 30°C	17.3 (60 of 347)	0.002	0.97
wild type with <i>dhc1</i> (G-E) plasmid at 30°C	17.4 (59 of 339)		
wild type with <i>dhc1</i> (G-E) plasmid at 30°C	17.4 (59 of 339)	25.75	<0.001
wild type with <i>dhc1</i> (G-E) plasmid at 16°C	3.2 (7 of 219)		
<i>dhc1</i> $\Delta$ with no plasmid at 30°C	17.3 (60 of 347)	4.00	0.045
<i>dhc1</i> $\Delta$ with <i>dhc1</i> (G-E) plasmid at 30°C	23.2 (90 of 387)		

Table s2. Percent embryonic lethality in *dhc-1* embryos at different temperatures.

Maternal genotype	16°C	18.4°C	19°C	20°C
<i>dhc-1(ct76)/+</i>	17	100	100	100
<i>dhc-1(ct77)/+</i>	11	44	56	100
<i>dhc-1(or195)</i>	3	ND	ND	ND

n>800 for each sample

Table s3. Quantification of events in wild-type and *dhc-1* mutant embryos.

Maternal genotype	Rate of fast phase of oocyte pronuclear migration ( $\mu\text{m}/\text{sec}$ )	% Embryo length at which pronuclei met <sup>a</sup>	Distance between centrosomes ( $\mu\text{m}$ )	Time from NEB to initiation of anaphase (sec)	Time of P <sub>1</sub> centrosome separation (min) <sup>b</sup>	Distance of posterior spindle pole from posterior of embryo ( $\mu\text{m}$ )	Rate of posterior centrosome movement ( $\mu\text{m}/\text{sec}$ ) <sup>c</sup>
wild type	0.26 $\pm$ 0.03	69 $\pm$ 4%	13.1 $\pm$ 0.6 <sup>d</sup> 21.6 $\pm$ 0.7 <sup>e</sup>	238 $\pm$ 38 (16°C) 158 $\pm$ 37 (25°C)	5.4 $\pm$ 2.7	23.6 $\pm$ 0.8 <sup>f</sup> 9.9 $\pm$ 0.6 <sup>g</sup>	0.067 $\pm$ 0.005
<i>dhc-1</i> ( <i>ct76</i> )/+	0.13 $\pm$ 0.06 <i>p</i> =7.5E-05	58 $\pm$ 3% <i>p</i> =5.05E-06	11.3 $\pm$ 0.7 <sup>d</sup> <i>p</i> =0.002 15.2 $\pm$ 4.1 <sup>e</sup> <i>p</i> =0.017	284 $\pm$ 51 (16°C) <i>p</i> =0.03 583 $\pm$ 174 (25°C) <i>p</i> =0.009	17.3 $\pm$ 1.8	23.8 $\pm$ 1.2 <sup>f</sup> <i>p</i> =0.67 11.2 $\pm$ 1.3 <sup>g</sup> <i>p</i> =0.08	0.056 $\pm$ 0.010 <i>p</i> =0.035
<i>dhc-1</i> ( <i>or195</i> )	0.21 $\pm$ 0.03 <i>p</i> =1.4E-03	59 $\pm$ 4% <i>p</i> =5.8E-05	ND	340 $\pm$ 110 (25°C) <i>p</i> =0.013	ND	22.5 $\pm$ 2.2 <sup>f</sup> <i>p</i> =0.21 10.3 $\pm$ 1.2 <sup>g</sup> <i>p</i> =0.42	0.048 $\pm$ 0.013 <i>p</i> =0.004
<i>dhc-1</i> ( <i>ct42</i> )/+	0.20 $\pm$ 0.02 <i>p</i> =8.6E-05	58 $\pm$ 2% <i>p</i> =4.3E-06	10.4 $\pm$ 0.8 <sup>d</sup> <i>p</i> =1.4E-07 17.5 $\pm$ 1.2 <sup>e</sup> <i>p</i> =1.5E-08	ND	ND	23.7 $\pm$ 2.7 <sup>f</sup> <i>p</i> =0.93 10.5 $\pm$ 1.7 <sup>g</sup> <i>p</i> =0.40	0.048 $\pm$ 0.010 <i>p</i> =2.1E-04

Measurements  $\pm$  standard error were determined in 1-cell embryos obtained from mothers shifted to 25°C as L4 larvae, unless otherwise noted. All events were monitored by DIC microscopy; pronuclei and centrosomes are visible as granule-free spheres. *n*=10 for all measurements, except *n*=5 for *ct76* distance between centrosomes (the other five *ct76* embryos did not display discernable centrosome separation), *n*=6 for the right four *ct76* columns, and *n*=8 for the right two *or195* columns. *p* values were generated using a two-sample (wild type vs. *dhc-1*) unequal variance, two-tailed student t-test. *p* values of less than 0.05 are considered statistically significant.

<sup>a</sup> Anterior is 0%.

<sup>b</sup> Time of initiation of P<sub>1</sub> centrosome separation after the end of P<sub>0</sub> spindle pole separation at 16°C.

<sup>c</sup> Average rate of posterior centrosome movement toward the posterior cortex after NEB until the end of anaphase. Only embryos that underwent P<sub>0</sub> centrosome separation were analyzed.

<sup>d</sup> Average distance at NEB. Only *ct76* embryos that underwent P<sub>0</sub> centrosome separation were analyzed.

<sup>e</sup> Average distance at the end of spindle pole separation.

<sup>f</sup> Average distance at the end of pronuclear migration and centration, measured from the point of contact between the two pronuclei to the posterior cortex. Only embryos that underwent P<sub>0</sub> centrosome separation were analyzed.

<sup>g</sup> Average distance at late anaphase, measured from the center of the posterior centrosome to the posterior cortex.