

**Supplementary Table 1. Data collection and refinement statistics**

<b>Data collection (highest resolution shell)</b>	
Space group	I4
No. molecules in asymmetric unit	1
Unit cell dimensions	
<i>a, b, c</i> (Å)	121.87, 121.87, 67.35
$\alpha, \beta, \gamma$ (degrees)	90, 90, 90
Wavelength (Å)	1.54
Resolution (Å)	50-2.24 (2.32-2.24)
Linear R-factor <sup>a</sup>	5.9 (21.1)
Square R-factor <sup>b</sup>	5.1 (20.7)
Mean $I/\sigma$ <sup>c</sup>	56.8 (14.4)
Completeness (%)	99.5 (95.4)
Redundancy	7.3 (7.2)
<b>Refinement</b>	
Resolution (Å)	20-2.24 (2.32-2.24)
Reflections (working/test)	19436/974
R-cryst/R-free (%) <sup>d</sup>	22.9/23.6
Non-hydrogen atoms	
Protein	2497
GDP/SO <sub>4</sub>	28/5
Water	246
R.m.s. deviations	
Bonds	0.0072
Angles	1.15
Average B-factor	32.6
Ramachandran plot (%)	
Most-favored regions	91.7
Allowed regions	8.3
Disallowed regions	0.0

<sup>a</sup>Linear R =  $\sum(|I - \langle I \rangle|) / \sum(I)$

<sup>b</sup>Square R =  $\sum(I - \langle I \rangle)^2 / \sum(I)^2$

<sup>c</sup> $\langle I/\sigma \rangle$ , Mean signal to noise, where  $I$  is the integrated intensity of a measured reflection and  $\sigma$  is the estimated error in the measurement

<sup>d</sup> $\sum |F_P - F_{P(\text{calc})}| / \sum F_P$ , where  $F_P$  and  $F_{P(\text{calc})}$  are the observed and calculated structure factor amplitudes, respectively. R-free is calculated similarly using test set reflections never used during refinement

## Supplementary Table 2.

### Peak spindle pole velocities from spindle severing experiments

genotype	n	A ( $\mu\text{m}/\text{sec}$ )	P ( $\mu\text{m}/\text{sec}$ )	versus wild-type, 25°C		versus wild-type, 16°C	
				(A)	(P)	(A)	(P)
wild-type, 25°C	13	0.64 $\pm$ 0.07 <sup>1</sup>	1.03 $\pm$ 0.08 <sup>1</sup>	-	-	P<0.001	P<0.001
wild-type, 16°C	12	0.56 $\pm$ 0.06	0.80 $\pm$ 0.07	P<0.001	P<0.001	-	-
<i>gpa-16(RNAi)</i> , 25°C	15	0.60 $\pm$ 0.07 <sup>1</sup>	0.65 $\pm$ 0.07 <sup>1</sup>	P~0.1	P<0.001	ND	ND
<i>gpa-16(RNAi)</i> , 16°C	10	0.32 $\pm$ 0.05	0.38 $\pm$ 0.06	ND	ND	P<0.001	P<0.001
<i>goa-1(RNAi)</i> , 25°C	8	0.50 $\pm$ 0.09	0.80 $\pm$ 0.12	P<0.001 <sup>2</sup>	P<0.001 <sup>2</sup>	ND	ND
<i>goa-1(RNAi)</i> , 16°C	8	0.34 $\pm$ 0.05	0.46 $\pm$ 0.06	ND	ND	P<0.001	P<0.001
<i>goa-1(RNAi)</i> <i>gpa-16(RNAi)</i> , 25°C	15	0.21 $\pm$ 0.04 <sup>3</sup>	0.22 $\pm$ 0.03 <sup>3</sup>	P<0.001 <sup>3</sup>	P<0.001 <sup>3</sup>	ND	ND
<i>goa-1(RNAi)</i> <i>gpa-16(it143)</i> , 25°C	9	0.18 $\pm$ 0.05	0.24 $\pm$ 0.05	P<0.001	P<0.001	ND	ND
<i>gpa-16(it143)</i> , 25°C	10	0.58 $\pm$ 0.07 <sup>2</sup>	0.65 $\pm$ 0.09 <sup>2</sup>	P~0.1	P<0.001	P<0.001 <sup>2</sup>	P<0.001 <sup>2</sup>
<i>gpa-16(it143)</i> , 16°C	11	0.67 $\pm$ 0.06	0.81 $\pm$ 0.10	ND	ND	P>0.5	P<0.001
<i>goa-1(RNAi)</i> <i>gpa-16(it143)</i> , 16°C	9	0.16 $\pm$ 0.05	0.25 $\pm$ 0.05	ND	ND	P<0.001	P<0.001

Average peak velocities of the anterior (A) and posterior (P) spindle poles were determined as described in Experimental Procedures ;  $\pm$  corresponds to standard deviation

<sup>1</sup> From Afshar *et al.* (2004) *Cell*, vol. 119, pgs. 219-230.

<sup>2</sup> From Afshar *et al.* (2005) *Development*, vol. 132, pgs. 4449-4459.

<sup>3</sup> From Colombo *et al.* (2003) *Science*, vol. 300, pgs. 1957-1961.