**The inositol pyrophosphate kinase Asp1 modulates chromosome segregation fidelity and spindle function in *S. pombe***

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**Supplementary Figure S1**

**Serial dilution patch tests of *S. pombe* strains.**

**(A)** Serial dilution patch tests ($10^5 – 10^1$ cells) of the indicated strains on YE5S plates with (+TBZ) or without (-TBZ) 10 µg/ml TBZ. The plates were incubated for 4 days at 25 °C. **(B)** Serial dilution patch tests ($10^5 – 10^1$ cells) of the indicated strains on MM plates with (+TBZ) or without (-TBZ) 12 µg/ml TBZ. The plates were incubated for 5 or 6 days at 25 °C.

**Supplementary Figure S2**

**Serial dilution patch tests of *S. pombe* strains.**

**(A)-(C)** Serial dilution patch tests ($10^4 – 10^1$ cells) of the indicated strains grown on YE5S plates incubated at 25 °C for 4 days. In (**C**) 4 µg/ml TBZ (+TBZ) were used.

**Supplementary Figure S3**

**Ark1-GFP signals in *asp1* variant cells**

**(A)** Fluorescence images of $asp1^{+}$ and $asp1^{D333A}$ mitotic cells expressing Ark1-GFP Sid4-mCherry. **(B)** Representative examples of Ark1-GFP kinetochore signals in cells with separated Sid4-mCherry signals (not shown). **(C)** Quantification of the relative signal intensity of kinetochore-localized Ark1-GFP. For N/strain= 20 cells. ***: $p < 0.0005$, two-sample t-Test. Quantification of signal: fluorescence of the entire region shown minus the background fluorescence.

**Supplementary Figure S4**

**Entry into anaphase B occurs earlier in *asp1*$^{H397A}$ cells than *asp1*$^{+}$ cells**

Diagrammatic representation of the time needed for spindle phases I and II as determined for *asp1*$^{+}$ (average time 19.2 $\pm$ 2.2 min; N=23) and *asp1*$^{H397A}$ (average time 17.2 $\pm$ 1.6 min; N=19) cells expressing Sad1-mCherry cen1-GFP. ***: p<0.005 (t-test).

**Supplementary Movie S1**

Live cell imaging of a mitotic *S. pombe* wild-type cell expressing *SV40::gfp-atb2*$^{+}$. 40 sec. interval between each picture. 5 frames/sec.. Bar, 2 µm.

**Supplementary Movie S2**

Live cell imaging of a mitotic *S. pombe asp1*$^{D333A}$ cell expressing *SV40::gfp-atb2*$^{+}$ showing the thin spindle midzone phenotype. 40 sec. interval between each picture. 5 frames/sec.. Bar, 2 µm.

**Supplementary Movie S3**

Live cell imaging of a mitotic *S. pombe asp1*$^{D333A}$ cell expressing *nmt81::gfp-atb2*$^{+}$ showing the broken spindle phenotype. 10 sec. interval between each picture. 5 frames/sec.. Bar, 2 µm.

**Supplementary Movie S4**

Live cell imaging of a mitotic *S. pombe asp1*$^{D333A}$ cell expressing *sad1-mCherry* cen1-GFP showing the broken spindle phenotype. 35 sec. interval between each picture. 5 frames/sec.. Bar, 2 µm.