Guidelines for SAIP abstracts

The abstract should, at the least, provide the reader with a short but clear summary of:

- **The context of the work, within its field**
- **What was done, and how**
- **The results obtained and their significance**

If the abstract does not cover all of these areas, it might not be accepted.

The example below (188 words) may assist as a guideline. Abstracts may also be in past tense. They should be a single paragraph of about 150-250 words. Do not include references (or, if one is essential, write it in the text). Do not be unnecessarily brief if the maximum word-count has not been exceeded.

This example was adapted from the author information for the journal *Nature* (www.nature.com/nature/authors/gta).

*A sentence providing a **basic introduction** to the field, comprehensible to a scientist in any discipline.*

*One or two sentences of **more detailed background**, comprehensible to scientists in related disciplines.*

*One sentence clearly stating the **general problem** being addressed by this particular study.*

*Summary of the the main results (e.g. with the words "**Here it is shown**" or their equivalent).*

*Two or three sentences explaining what the **main result** reveals in direct comparison to what was thought to be the case previously, or how the main result adds to previous knowledge.*

*One or two sentences to put the results into a more **general context**.*

During cell division, mitotic spindles are assembled by microtubule-based motor proteins. The bipolar organization of spindles is essential for proper segregation of chromosomes and requires plus-end-directed homotetrameric motor proteins of the widely conserved kinesin-5 (BimC) family. Hypotheses for bipolar spindle formation include the 'push−pull mitotic muscle' model, in which kinesin-5 and opposing motor proteins act between overlapping microtubules. However, the precise roles of kinesin-5 during this process are unknown. Here it is shown that the vertebrate kinesin-5 Eg5 drives the sliding of microtubules depending on their relative orientation. We found in controlled *in vitro* assays that Eg5 has the remarkable capability of simultaneously moving at ~ 20 nm s^{-1} towards the plus-ends of each of the two microtubules it crosslinks. For anti-parallel microtubules, this results in relative sliding at ~40 nm s^{-1}, comparable to spindle pole separation rates *in vivo*. Furthermore, we found that Eg5 can tether microtubule plus-ends, suggesting an additional microtubule-binding mode for Eg5. Our results demonstrate how members of the kinesin-5 family are likely to function in mitosis, pushing apart interpolar microtubules as well as recruiting microtubules into bundles that are subsequently polarized by relative sliding.