Writing the manuscript abstract
Adapted from Nature: Adapted from: https://go.nature.com/2S21YV6.

One or two sentences providing a basic introduction to the field, comprehensible to a scientist in any discipline.

During cell division, mitotic spindles are assembled by microtubule-based motor proteins.

Two to three sentences of more detailed background, comprehensible to scientists in related disciplines.

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.

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

However, the precise roles of kinesin-5 during this process are unknown.

One sentence summarizing the main result (with the words "here we show" or their equivalent).

Here we show that the vertebrate kinesin-5 Eg5 drives the sliding of microtubules depending on their relative orientation.

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.

We found in controlled in vitro assays that Eg5 has the remarkable capability of simultaneously moving at approximately 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 approximately 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.

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

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.

Two or three sentences to provide a broader perspective, readily comprehensible to a scientist in any discipline, may be included in the first paragraph if the editor considers that the accessibility of the paper is significantly enhanced by their inclusion. Under these circumstances, the length of the paragraph can be up to 300 words. (This example is 190 words without the final section, and 250 words with it).

We anticipate our assay to be a starting point for more sophisticated in vitro models of mitotic spindles. For example, the individual and combined action of multiple mitotic motors could be tested, including minus-end-directed motors opposing Eg5 motility. Furthermore, Eg5 inhibition is a major target of anti-cancer drug development, and a well-defined and quantitative assay for motor function will be relevant for such developments.

Kapitein et al., Nature (2005), doi: 10.1038/nature03503.