***eLife’s* transparent reporting form**

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**Sample-size estimation**

* You should state whether an appropriate sample size was computed when the study was being designed
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* If no explicit power analysis was used, you should describe how you decided what sample (replicate) size (number) to use

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Sample numbers, replicate numbers and associated statistical analysis, where appropriate, are indicated in the figure captions or in main text.

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No data was excluded in this study. All experiments were repeated multiple times and gave consistent results. These are cell mechanics measurements and validations carried over multiple biological replicates. Details of sample numbers and statistical tests, where appropriate, are included in figure captions or in main text.

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* Statistical analysis methods should be described and justified
* Raw data should be presented in figures whenever informative to do so (typically when N per group is less than 10)
* For each experiment, you should identify the statistical tests used, exact values of N, definitions of center, methods of multiple test correction, and dispersion and precision measures (e.g., mean, median, SD, SEM, confidence intervals; and, for the major substantive results, a measure of effect size (e.g., Pearson's r, Cohen's d)
* Report exact p-values wherever possible alongside the summary statistics and 95% confidence intervals. These should be reported for all key questions and not only when the p-value is less than 0.05.

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Origin software (OriginLab, version 9) and Matlab (MathWorks, R2018b) were used for statistical analysis. The intensity values were analyzed using the autocorrelation (autocorr) function of Matlab (MathWorks, R2018b). Images were analysed using Fiji/Image J (NIH, USA). Statistical analysis is stated in figure captions. P-values are stated wherever required in figure captions or in main text and method used is described in Materials and Methods.

(For large datasets, or papers with a very large number of statistical tests, you may upload a single table file with tests, Ns, etc., with reference to sections in the manuscript.)

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