

Phase	c_α [Pa]	c_β [Pa]	α	β	e_0 [$k_B T$]	ν
MDCK						
Interphase	8.84 ± 1.75	0.81 ± 0.41	0.35 ± 0.03	0.81 ± 0.04	9.88 ± 1.54	-0.62 ± 0.04
Prophase	3.75 ± 0.43	0.92 ± 0.12	0.38 ± 0.06	0.84 ± 0.04	5.18 ± 0.78	-0.69 ± 0.04
Metaphase	2.64 ± 2.26	1.31 ± 0.41	0.29 ± 0.08	0.77 ± 0.04	4.30 ± 0.60	-0.65 ± 0.04
Anaphase	6.77 ± 1.46	1.27 ± 0.30	0.39 ± 0.04	0.91 ± 0.05	6.45 ± 0.84	-0.65 ± 0.05
Telophase	8.69 ± 2.38	1.49 ± 0.61	0.34 ± 0.15	0.82 ± 0.04	7.75 ± 2.04	-0.59 ± 0.06
HeLa						
Interphase	6.49 ± 1.10	0.23 ± 0.41	0.40 ± 0.10	0.88 ± 0.06	12.09 ± 1.42	-0.78 ± 0.05
Prophase	1.31 ± 0.43	0.10 ± 0.34	0.47 ± 0.12	0.88 ± 0.12	4.79 ± 0.70	-0.57 ± 0.11
Metaphase	1.80 ± 0.40	0.25 ± 0.14	0.42 ± 0.06	0.86 ± 0.05	3.27 ± 0.91	-0.57 ± 0.16
Anaphase	3.34 ± 2.52	0.22 ± 0.25	0.42 ± 0.04	0.87 ± 0.04	3.68 ± 1.72	-0.54 ± 0.04
Telophase	3.11 ± 3.18	0.42 ± 0.86	0.38 ± 0.05	0.83 ± 0.05	4.74 ± 0.99	-0.64 ± 0.08

Table S1: **Parameters for the two-material viscoelastic fits.** Median values $\pm$ SE for MDCK and HeLa cells for different phases of the cell cycle. Parameters of fit to $G^*(f) = c_\alpha \cdot (i2\pi f)^\alpha + c_\beta \cdot (i2\pi f)^\beta$ for mechanical parameters and $E_a(f) = e_0 f^\nu$ for the active energy.