

Table S2: Mechanical parameters varied in the model for testing the robustness of model results

Parameter	Range varied
Angular spring constant (k_b)	$10^{-18} - 10^{-16}$ N.m
Spring constant of substrate attachment (k_a)	0 – 2000 pN/ μ m
Drag coefficient between cell surface and substrate environment	$9 \times 10^{-5} - 9 \times 10^{-3}$ kg/s
Bond breaking length ($L_{\max}$)	0.25 – 1.0 μ m