**Supplementary File 2 List of parameter values used for adopting the “parallel cluster model”.** Note that we used slightly different values for *F*0, *d*, and *k*m from those in the literature.

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| **Symbol** | **Definition** | **Value** |
| *k*01 | A rate from unbound to weakly bound state | 40 [s-1] |
| *k*10 | A rate from weakly bound to unbound state | 2 [s-1] |
| *k*12 | A rate from weakly bound to post-power-stroke state | 1,000 [s-1] |
| *k*21 | A rate from post-power-stroke to weakly bound state | 1,000 [s-1] |
| *k*20 | A rate from post-power-stroke to unbound state | 20 [s-1] |
| *F*0 | Force dependence | 5.04×10-12 [N] |
| *E*pp | Free energy bias toward the post-power-stroke state | -60×10-21 [J] |
| *E*ext | External energy contribution | 0 [J] |
| *d* | Step size | 7×10-9 [m] |
| *k*m | Spring constant of the neck linkers | 1×10-3 [N/m] |