Biophysical Journal, Volume 97

Supporting Material

On the origin of kinesin limping

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SUPPORTING MATERIAL for:

On the origin of kinesin limping

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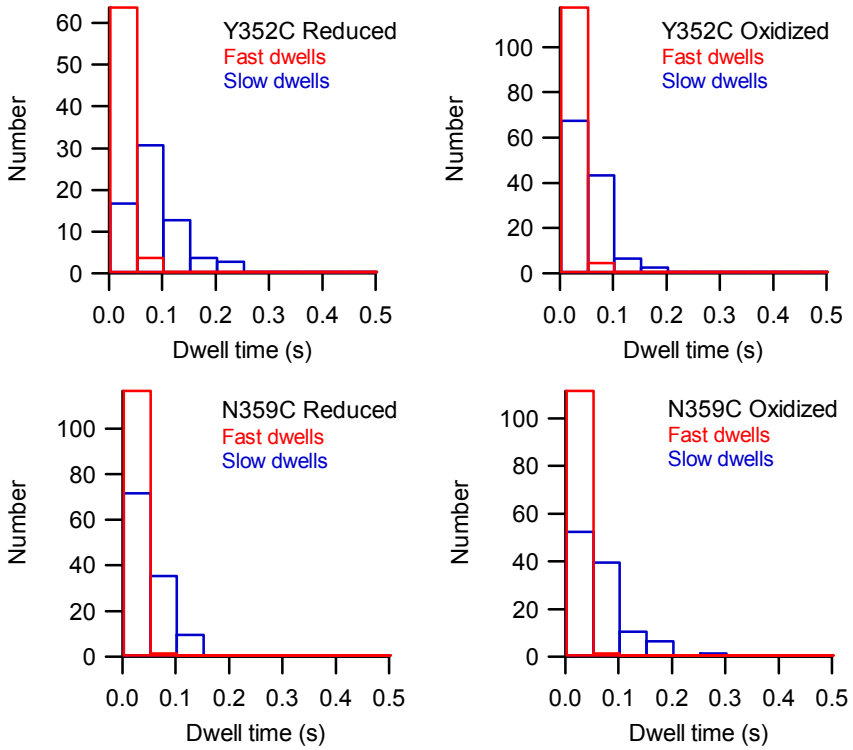

Supporting Figure S1. Histograms of the dwell-time distributions for the Y352C and N359C constructs under reduced or oxidizing conditions. Alternate (i.e., even- or odd-numbered) dwell intervals for individual runs were scored and separated into two sets, corresponding to 'fast' and 'slow' phases, based on the average time spent in each phase, as described in the main text and ref. 1 (Asbury *et al*., 2003, *Science* **302**: 2130-2134). Times for fast dwells (red) and slow dwells (blue) were compiled into histograms using a bin width of 0.05 s. The ratio of the average dwell time in the slow phase to the average dwell time in the fast phase supplies the limp factor for each run. The mean limp factor, *L*, was computed as an average of limp factors for all individual runs under a given set of conditions. ***Upper panels***: *Left*, Y352C under reducing conditions (no cross-link), $L = 5.1 \pm 0.6$ (mean ± std. err.), based on $N = 68$ runs. *Right*, Y352C under oxidizing conditions (cross-linked), $L = 2.8 \pm 0.2$ (mean ± std. err.), based on $N = 122$ runs. ***Lower panels***: *Left*, N359C under reducing conditions (no cross-link), $L = 3.7 \pm 0.3$ (mean ± std. err.), based on $N = 119$ runs. *Right*, N359C under oxidizing conditions (cross-linked), $L = 3.9 \pm 0.3$ (mean ± std. err.), based on $N = 114$ runs.