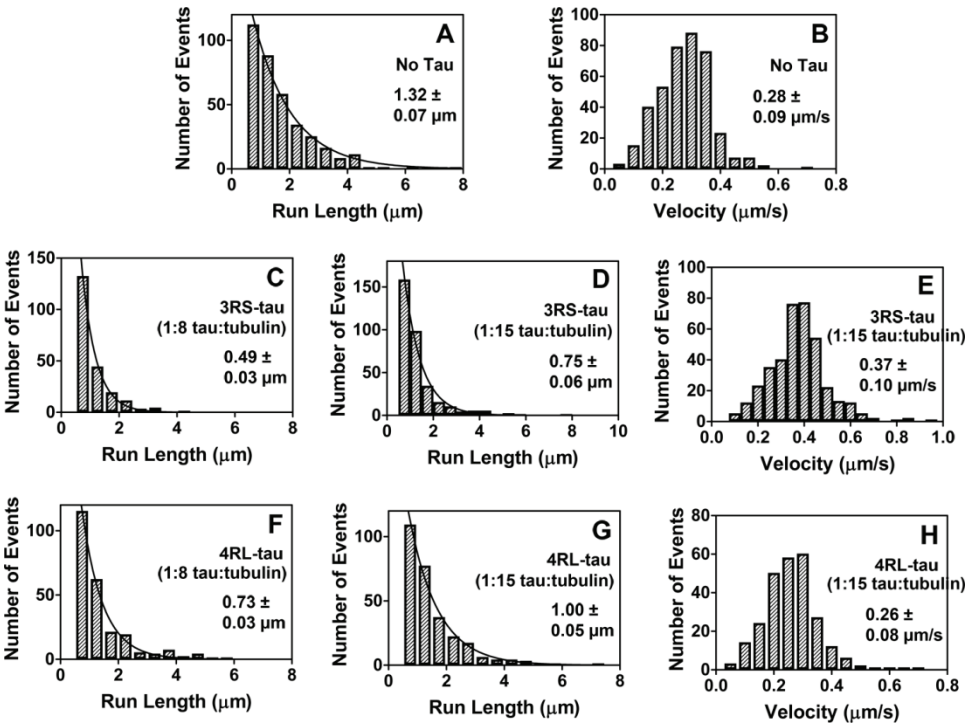

Figure S4. **Characteristic run length and velocity data of kinesin on microtubules stabilized with glycerol/DMSO in the absence and presence of 3RS-tau or 4RL-tau at two distinct tau concentrations.** Qdot-kinesin complexes were tracked on rhodamine labeled glycerol/DMSO-stabilized microtubules. Processive run length (plotted in 0.5 µm bins) and velocity (plotted in 0.1 µm/s bins) values were determined in the absence of tau (A,B). Processive run length was determined in the presence of Alexa-488 3RS-tau at a 1:8 tau:tubulin ratio (C), at a1:15 tau:tubulin ratio (D), and the velocity was determined at a 1:15 tau:tubulin ratio (E). Processive run length was determined in the presence of Alexa-488 4RL-tau at a 1:8 tau:tubulin ratio (F), at a1:15 tau:tubulin ratio (G), and the velocity was determined at a 1:15 tau:tubulin ratio (H). The resulting processive run length histograms were fit by a single exponential decay function describing the characteristic run length ± standard error of the fit, while the Gaussian frequency distributions of the velocity data were used to calculate the mean velocity ± standard deviation.