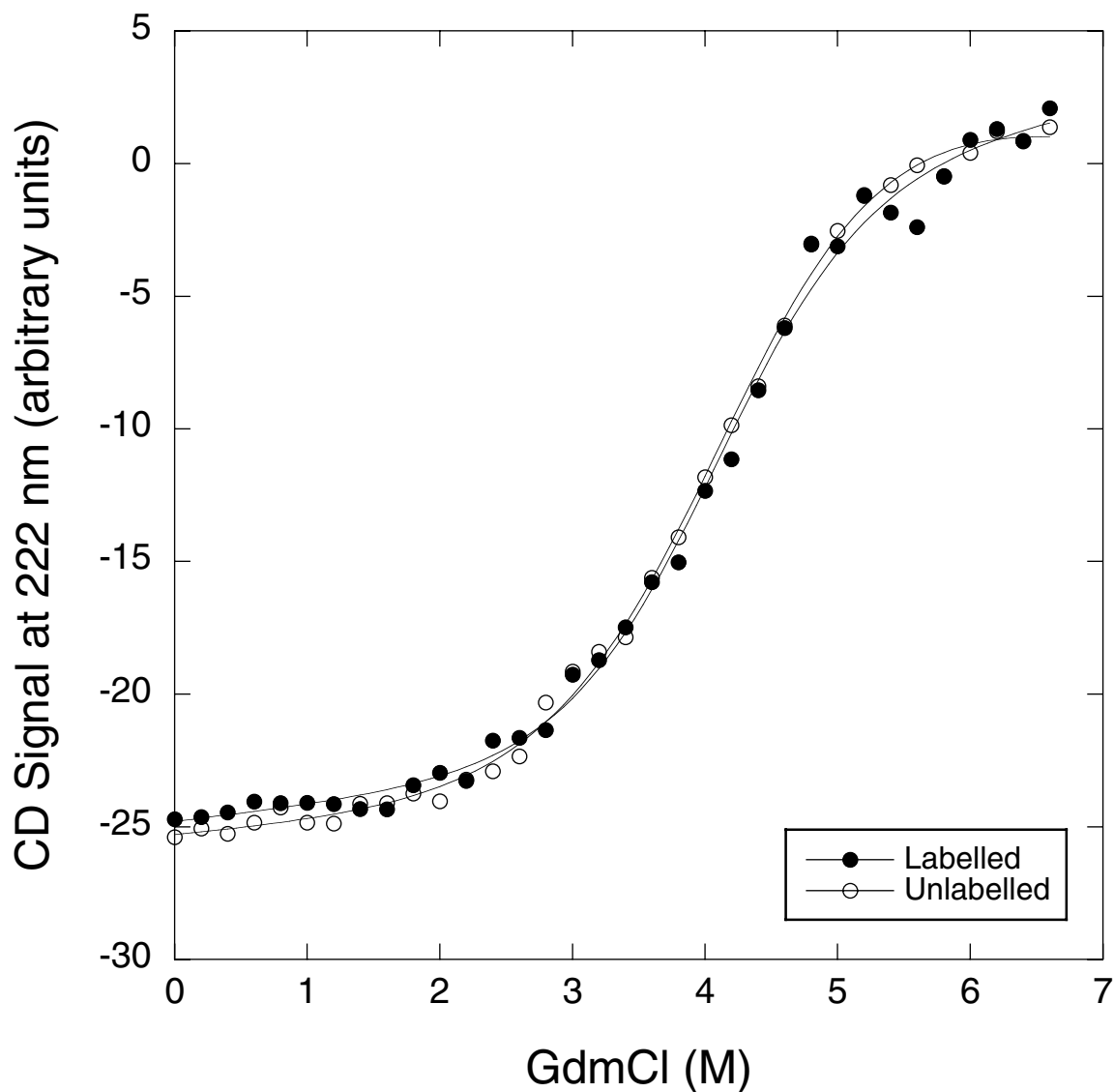
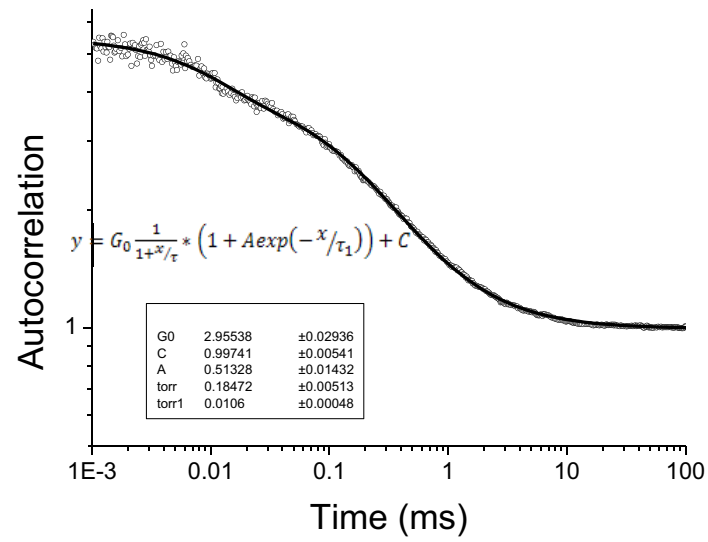


# Supporting Information

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**Fig. S1.** Equilibrium denaturation of labeled (filled circles) and unlabeled (open circles) BBL in GdmCl at 279 K followed by circular dichroism at 222 nm. The labeled protein has a  $[\text{GdmCl}]_{50\%}$  of  $4.07 \pm 0.14$  M and  $m$  of  $0.96 \pm 0.14$  kcal/mol/M, and the unlabeled protein has a  $[\text{GdmCl}]_{50\%}$  of  $4.19 \pm 0.11$  M and an  $m$  of  $0.85 \pm 0.08$  kcal/mol/M on fitting to the standard equation  $\Delta G_{D-N} = \Delta G_{D-N}^0 - m[\text{GdmCl}]$ .



**Fig. S2.** Fluorescence correlation spectroscopy of BBL to measure the diffusion time in the confocal volume at 279 K.

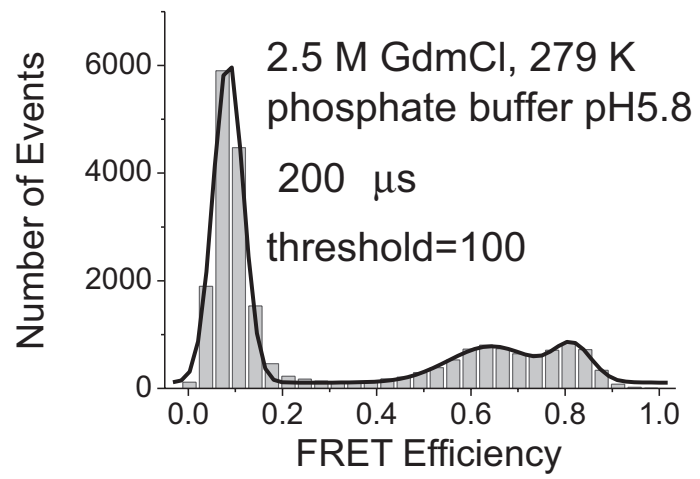


Fig. S3. SM-FRET histogram of BBL in GdmCl solution, pH 5.8.

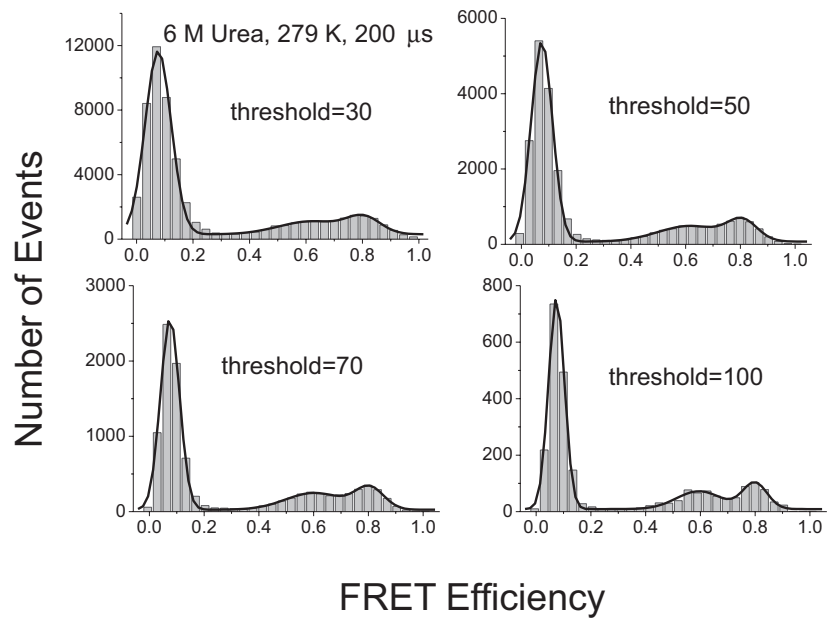


Fig. S4. SM-FRET histogram of BBL at 6 M urea. Data were acquired at a time bin size of 200  $\mu$ s. The threshold set in data analysis is shown in the panels.