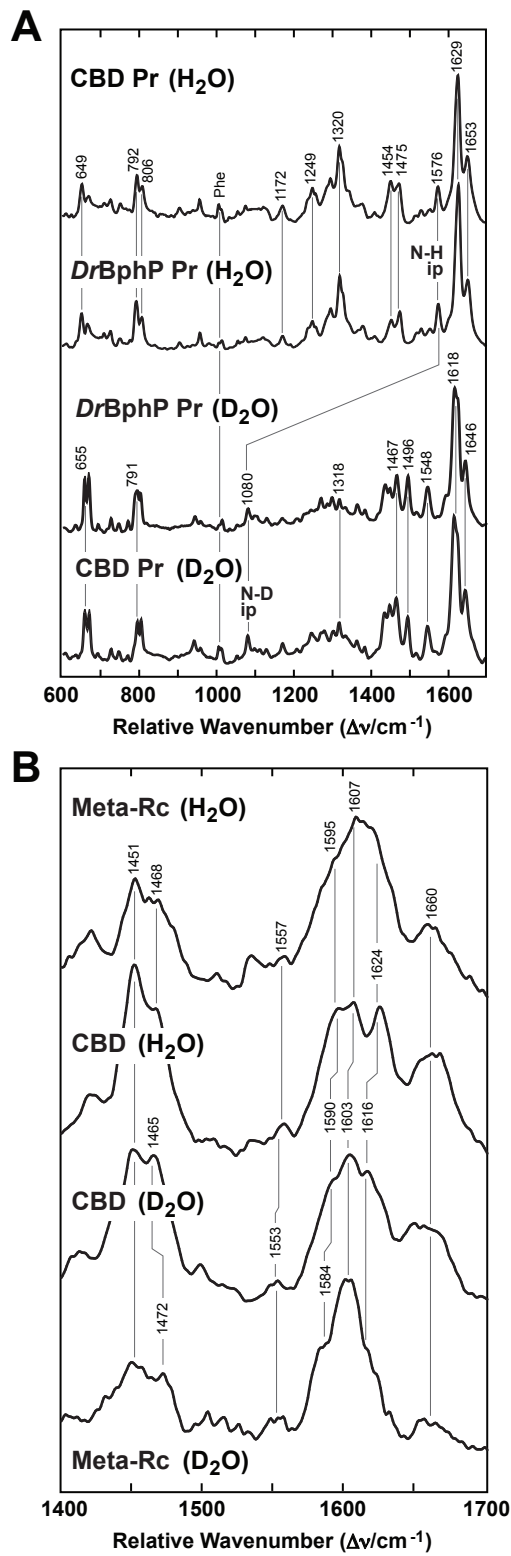


## SUPPLEMENTAL FIGURE LEGENDS

**Supplemental Figure 1.** RR spectra of full-length *DrBphP* and a truncation encompassing the CBD (residues 1-321). **A**, Overview RR spectra (600 -1700  $\text{cm}^{-1}$ ) of the Pr state measured from the samples dissolved in  $\text{H}_2\text{O}$  and  $\text{D}_2\text{O}$ . **B**, Expanded view of the RR spectra in the marker band region (1500 – 1700  $\text{cm}^{-1}$ ) for the Meta-Rc state of full-length *DrBphP* and the photoconversion product of CBD generated in saturating red light. The RR spectra for the CBD were recorded from samples irradiated with red light at room temperature while the *DrBphP* Meta-Rc spectra were recorded after trapping the Meta-Rc intermediate at  $-30^\circ\text{C}$  during red light irradiation. Contributions from the residual Pr state were subtracted from each spectrum. The positions of N-H ip band and other diagnostic RR maxima are indicated.

**Supplemental Figure 2.** Pfr $\rightarrow$ Pr thermal reversion of the R254A mutant assembled with BV. Wild-type *DrBphP* and the R254A mutant were irradiated with saturating red light and then kept in the dark at  $24^\circ\text{C}$ . Absorption spectra were recorded at various intervals and used to calculate the % Pfr remaining.

Supplemental Figure 1. Wagner *et al.*



Supplemental Figure 2. Wagner *et al.*

