

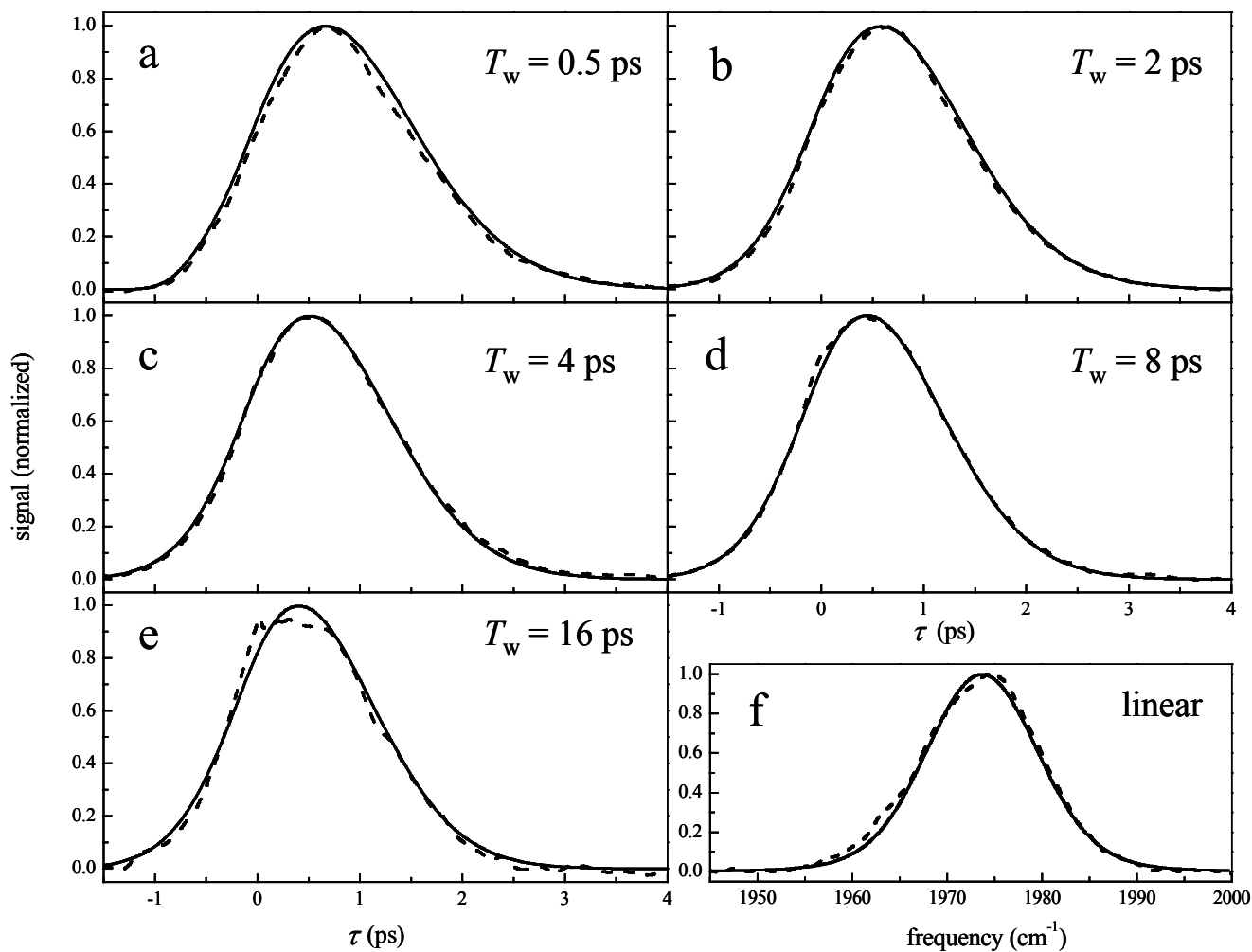
Supporting Information for:

**Cytochrome  $c_{552}$  Mutants: Structure and Dynamics at the Active Site Probed by  
Multidimensional NMR and Vibration Echo Spectroscopy**

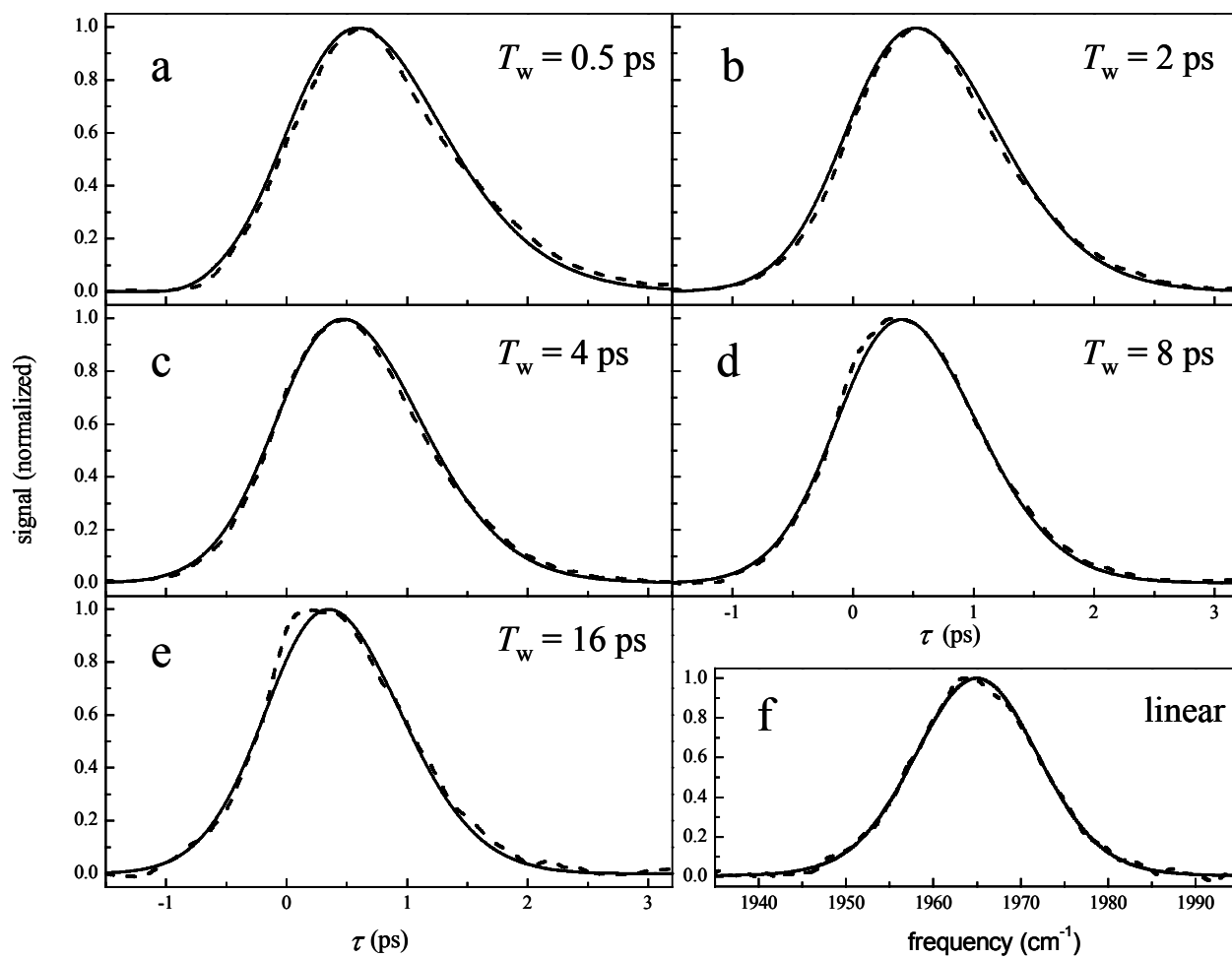
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**Figure S1.** a) Experimental vibrational echo decay data at  $T_w =$  a) 0.5 ps, b) 2 ps, c) 4 ps, d) 8 ps, e) 16 ps, and f) linear spectrum for *Ht-M61A* (dashed lines) overlaid with the best-fit vibrational echo decay and linear spectrum calculated from nonlinear response theory (solid lines) at  $1975 \text{ cm}^{-1}$ .



**Figure S2.** a) Experimental vibrational echo decay data at  $T_w =$  a) 0.5 ps, b) 2 ps, c) 4 ps, d) 8 ps, e) 16 ps, and f) linear spectrum for *Ht-M61A/Q64N* (dashed lines) overlaid with the best-fit vibrational echo decay and linear spectrum calculated from nonlinear response theory (solid lines) at  $1965 \text{ cm}^{-1}$ .