

## FIGURE CAPTIONS

Figure S1. Derivative of the absorption spectrum of the peroxide intermediate in T1D (solid line) and T1DT3' (dashed line) showing an inflection point around 24,800  $\text{cm}^{-1}$ .

Figure S2. X-band EPR at 77 K (A) and low temperature (5K) MCD (B) spectrum of the peroxide intermediate of T1D (solid lines) and T1DT3' (dot-dashed lines). The spectra of T1D (dotted line) are shown for reference. For MCD, the 0T baseline was subtracted from the 7T scan to obtain the spectra presented above.

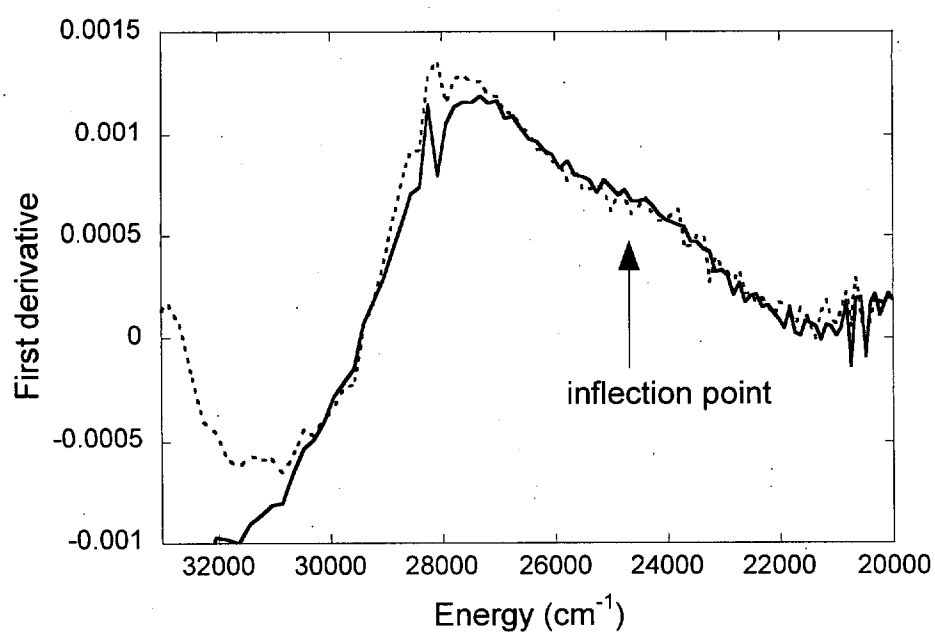


Figure S1

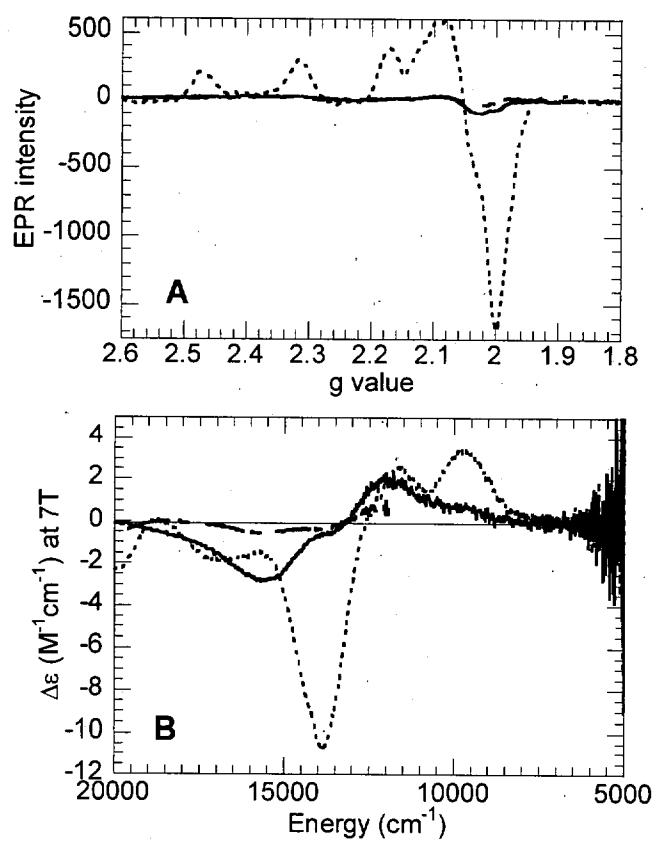


Figure S2