Supporting Information

Adjacent Keto and Enol Groups in Photochemistry of a Cyclic Molecule: Products, Mechanisms and Dynamics

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FTIR spectra of the photolysis products have been recorded to confirm the identity of the products. Sample results are provided below.

**Figure S1.** FTIR spectra of 1,2-CHD vapor before and after 254.7 nm photolysis. Band “A” is the main strongest IR band of CHD, which quickly disappears upon photolysis. Band “B” belongs to CO, a major product of photolysis.

**Figure S2.** Disappearance of CHD and appearance of cyclopentanone in 254.7 nm photolysis of CHD vapor. The reference spectrum of cyclopentanone is shown in Figure S3.
**Figure S3.** Reference spectrum of cyclopentanone. A volume of 0.2 µL of cyclopentanone was directly injected into a 47-liter gas-cell to obtain this spectrum.

**Figure S4.** Appearance of CO product in 254.7 nm photolysis of CHD vapor