Supporting Information:

Absolute Reactivity of the 4-Methoxycumyl Cation in Non-Acid Zeolites.

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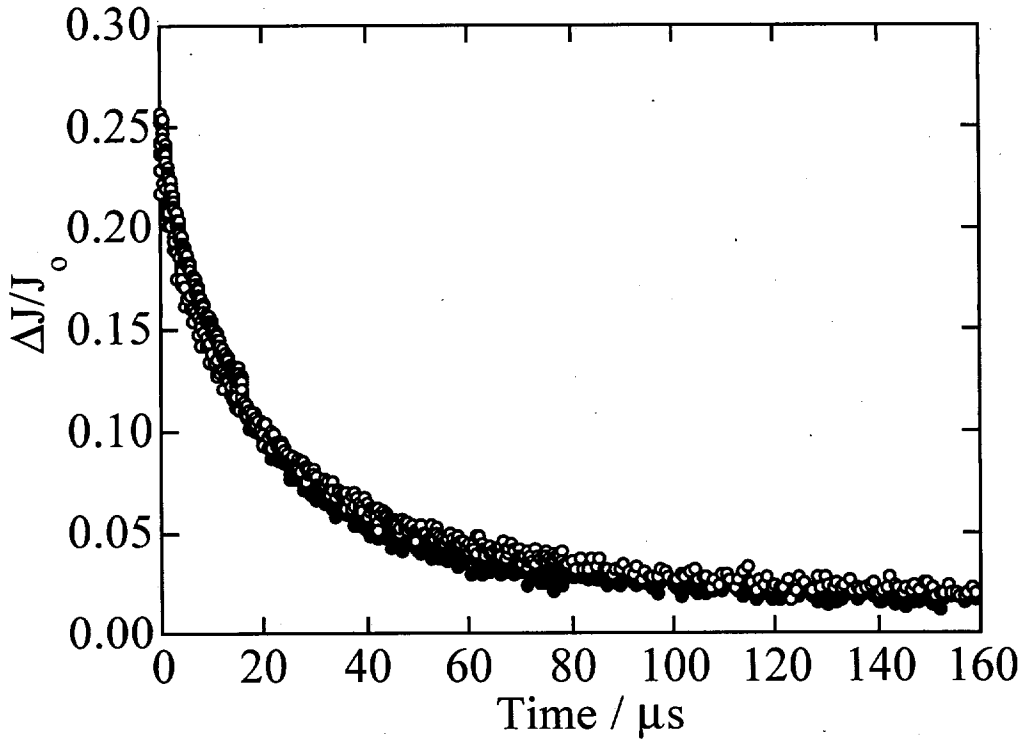

Figure S1. Decay kinetics at 360-nm for the 4-methoxycumyl cation (open circles) and 4-methoxycumyl cation-d_6 (closed circles) in dry LiY.

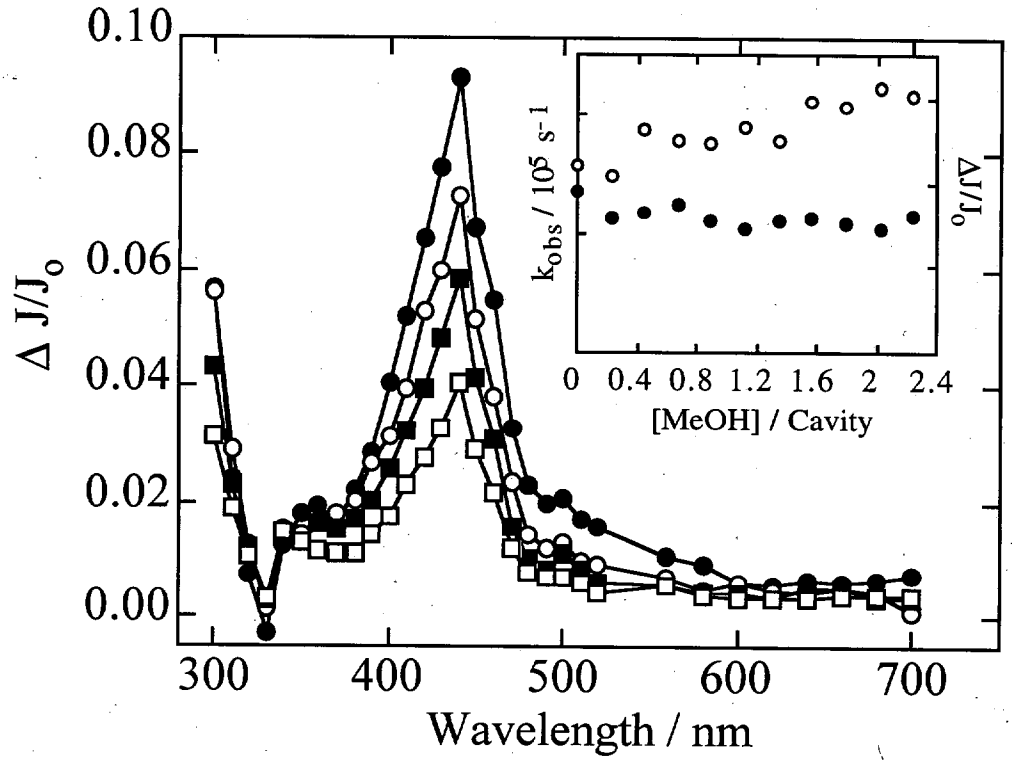

Figure S2. Transient diffuse reflectance spectrum generated upon 266-nm laser irradiation of 4-methoxytoluene in NaY. The spectra were taken 480 ns (closed circles), 1.84 μs (open circles), 4.80 μs (closed squares) and 14.4 μs (open squares) after the laser pulse. Inset shows the observed rate constant for the decay (closed circles) and initial absorption (open circles) at 420 nm as a function of methanol concentration.

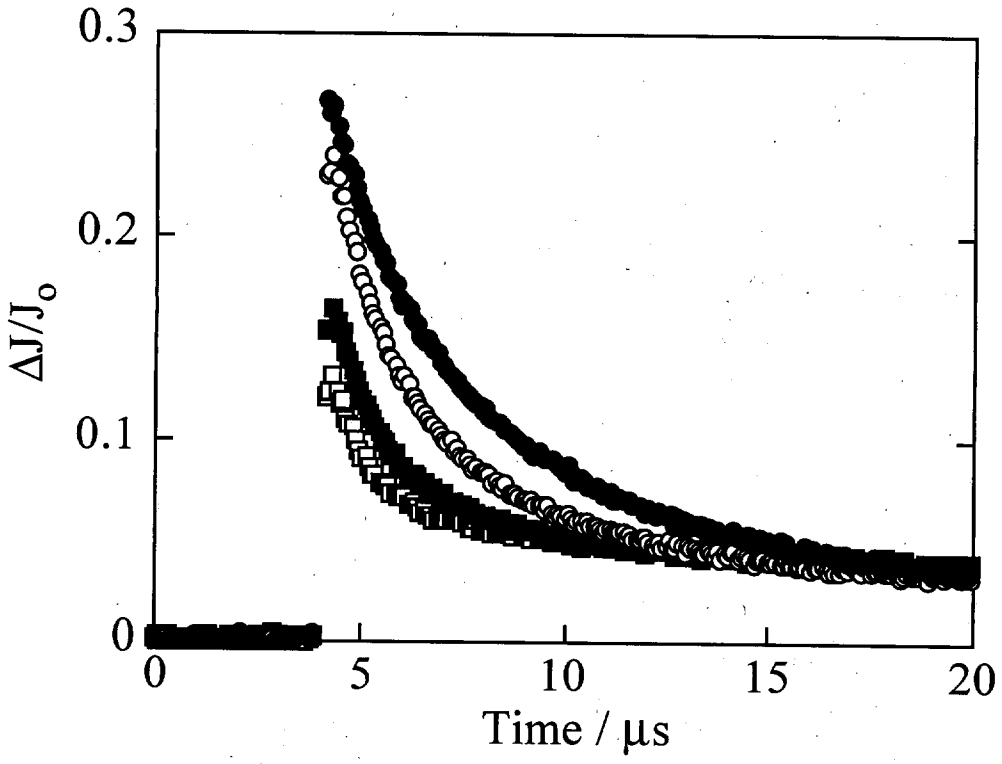

Figure S3. Decay of the 4-methoxycumyl cation at 360 nm in NaY containing one (closed circles), three (open circles), six (closed squares), and nine (open squares) μL of coadsorbed methanol in 119 mg of NaY.

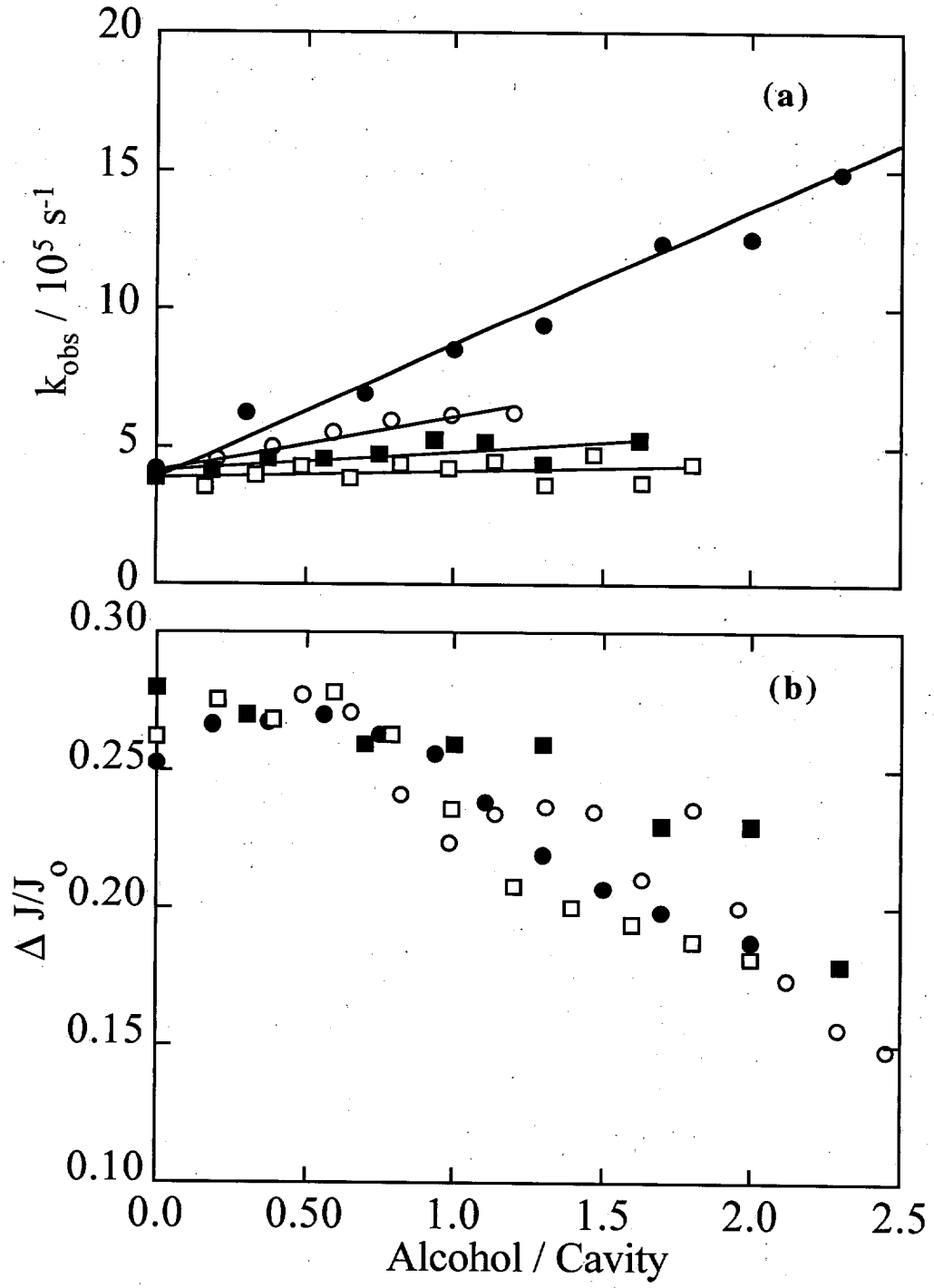

Figure S4. Relationship between (a) the observed rate constant for decay and (b) the initial absorption at 360 nm for the 4-methoxycumyl cation in NaY and the concentration of methanol (closed circles), ethanol (open circles), 2-propanol (closed squares) and *t*-butanol (open squares).