Supplementary Material (ESI) for Chemical Communications

Supplementary data

Monitoring the effect of ultrafast deactivation of the electronic excited states of DNA bases and polynucleotides following 267 nm laser excitation using picosecond time-resolved infrared spectroscopy

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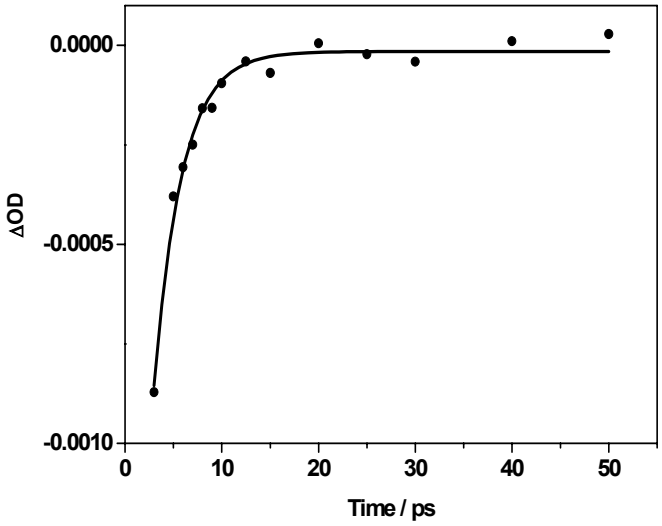

Figure 1. Kinetic trace obtained by monitoring the maximum of the bleach (1670 cm^{-1}) of 5'-dGMP (10 mM) in 50 mM phosphate D_2O buffer following 267 nm excitation. Solid line is a single exponential fit for these data, 2.9 (±0.2) ps.

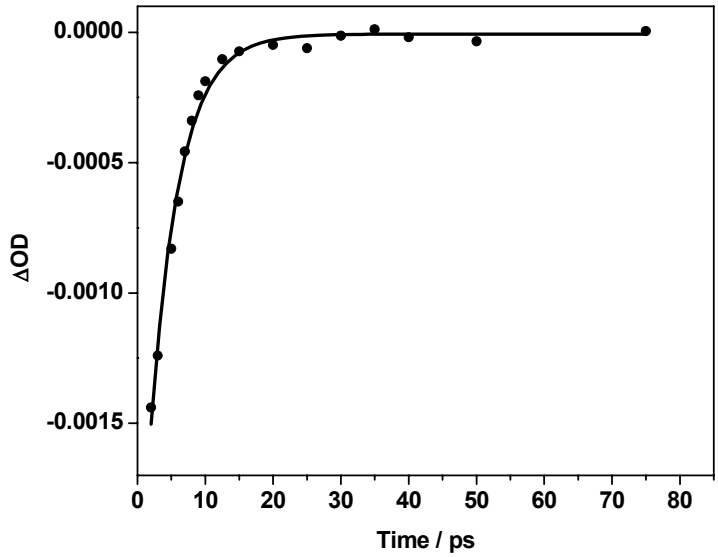

Figure 2. Kinetic trace obtained by monitoring the maximum of the bleach (1630 cm^{-1}) of 5'-dAMP (10 mM) in 50 mM phosphate D_2O buffer following 267 nm excitation. Solid line is a single exponential fit for these data, 4.3 (±0.2) ps.

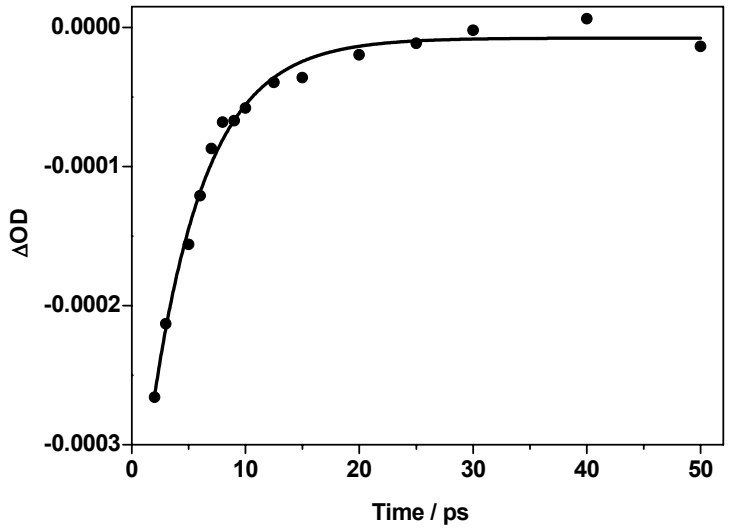

Figure 3. Kinetic trace obtained by monitoring the bleach (1660 cm^{-1}) of 5'-dCMP (10 mM) in 50 mM phosphate D_2O buffer following 267 nm excitation. Solid line is a single exponential fit for these data, 4.7 (±0.3) ps.

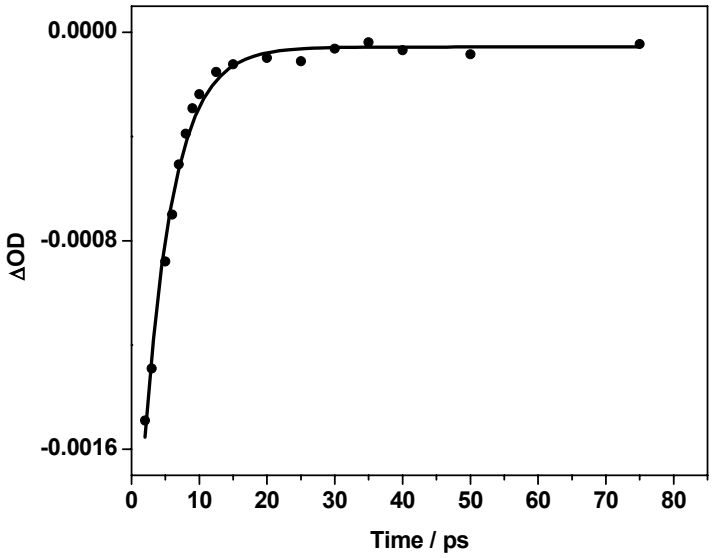

Figure 4. Kinetic trace obtained by monitoring the maximum of the bleach (1660 cm^{-1}) of 5'-dTMP (10 mM) in 50 mM phosphate D_2O buffer following 267 nm excitation. Solid line is a single exponential fit for these data, 2.2 (±0.1) ps.

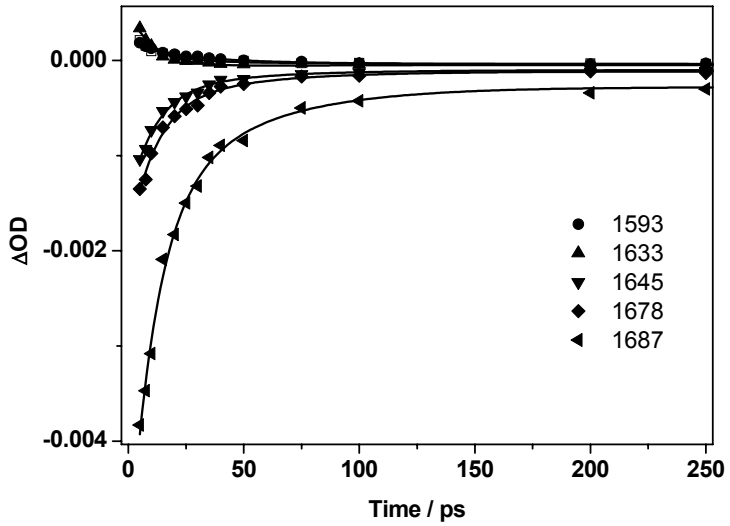

Figure 5. Kinetic traces obtained at single points following 267 nm excitation of polydG-dC• polydG-dC (10 mM) in 50 mM phosphate D_2O buffer. Solid lines are biexponential fit for these data obtained in a global fitting, 12 (±2) ps and 50 (±10) ps.

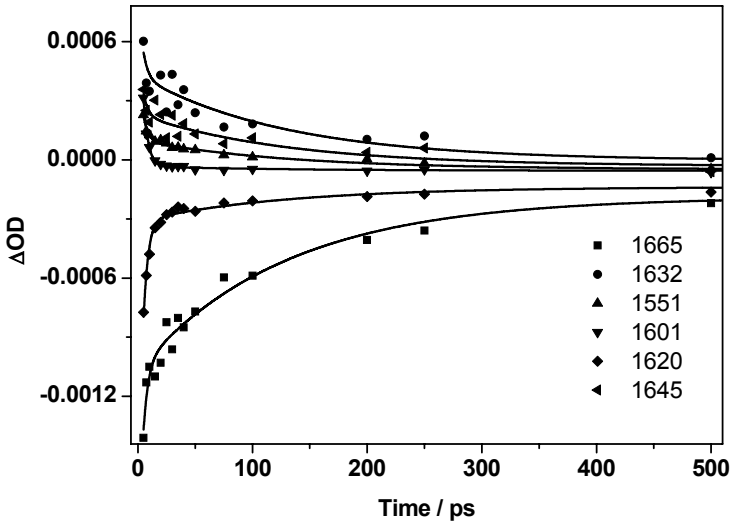

Figure 6. Kinetic traces obtained at single points following 267 nm excitation of polydA-dT• polydA-dT (10 mM) in 50 mM phosphate D_2O buffer. Solid lines are biexponential fits for these data obtained in a global fitting, 4 (±1) ps and 140 (±10) ps.

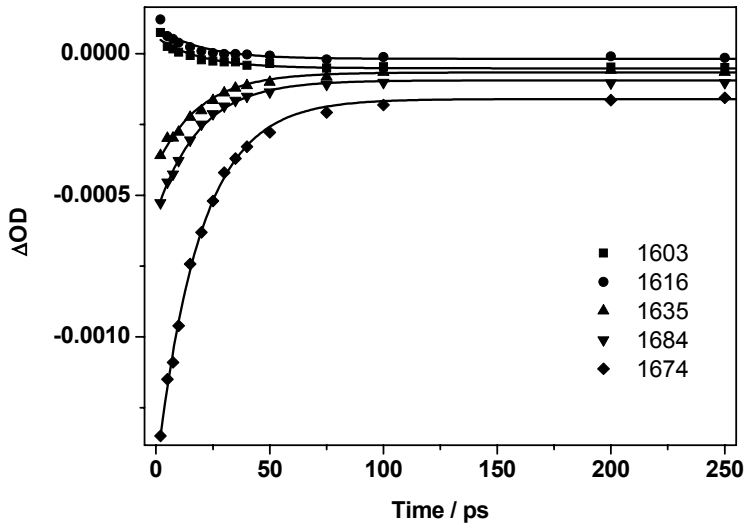

Figure 7. Kinetic traces obtained at single points following 267 nm excitation of polydG-dC• polydG-dC (10 mM) in 50 mM phosphate D_2O buffer with 4M NaCl (Z conformation). Solid lines are single exponential fits for these data obtained in a global fitting, 19.0 (±3) ps.