Supporting Information: Preparation and Analysis of Oligonucleotides Containing the C4'-Oxidized Abasic Site and Related Mechanistic Probes

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General Methods. Oligonucleotide synthesis reagents were purchased from Dharmacon Research (Lafayette, CO) or Glen Research (Sterling, VA). Endonuclease IV was obtained from New England Biolabs (Beverly, MA). Radiolabeling was carried out according to standard protocols.³⁵ UV photoreactions of oligonucleotides were carried out in Pyrex tubes in a Rayonet photoreactor fitted with 16 lamps having an output maximum at 350 nm. Oligonucleotides were precipitated from NH_4OAc prior to ESI-MS analysis. Compounds that could not be detected by TLC using a UV-lamp were visualized using the appropriate stain (e.g. *p*-anisaldehyde or phosphomolybdic acid).

Supporting Information Figure 1. ¹H NMR spectrum of **4a** in D₂O.

Supporting Information Figure 2. ^1H NMR spectrum of **4b** in D_2O .

Supporting Information Figure 3. ¹H NMR spectrum of **6a** in CDCl₃.

Supporting Information Figure 4. ^{31}P NMR spectrum of **6a** in CDCl_3 .

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