SUPPORTING INFORMATION

In Vitro Ligation of Oligodeoxynucleotides Containing C8-Oxidized Purine Lesions using Bacteriophage T4 DNA Ligase[†]

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Contents:

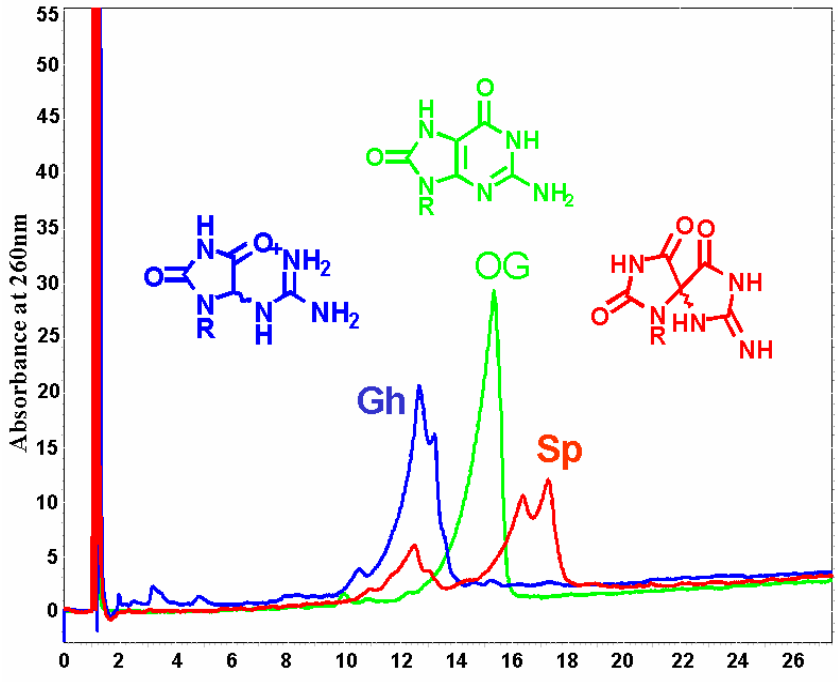

Figure S1. HPLC analysis of crude OG, Gh, and Sp containing oligodeoxynucleotides. Purification of the Gh oligodeoxynucleotide was accomplished by HPLC using a Dionex DNA Pac PA-100 4 × 250 mm column and an isocratic buffer system consisting of 50% solvent A (10% acetonitrile and 90% H_2O) and 50% solvent B [10% acetonitrile and 90% 1.5 M ammonium acetate (pH 7)]. The flow rate was 1.0 mL/min, and UV spectra were recorded at 260 nm. Oligodeoxynucleotides containing the Sp isomers were purified in a similar manner, except that an isocratic buffer system consisting of 30% solvent A and 70% solvent B was used. Prior to use, the HPLC-purified oligodeoxynucleotides were dialyzed against H_2O for 72 h, followed by dialysis against 1 mM NaCl for 72 h, to minimize the possibility of polynucleotide kinase inhibition by ammonium cations. The purity of the HPLC-purified oligodeoxynucleotides was determined by HPLC to be >99% using a Dionex DNA Pac PA-100 4 × 250 mm column and a linear gradient of 35% solvent B to 100% solvent B in 30 min. The green trace is the oligodeoxynucleotide with 3'end OG. The blue trace is Gh and red trace is Sp. The peak with a retention time of 15.3 min corresponds to primer 2OG. The two peaks at 12.7 min and 13.2 min are the diastereomers of primer 2Gh, which were collected together. The two peaks at 16.4 min and 17.3 min correspond to the diastereomers primer 2Sp. OG appears as one peak since the base is achiral.

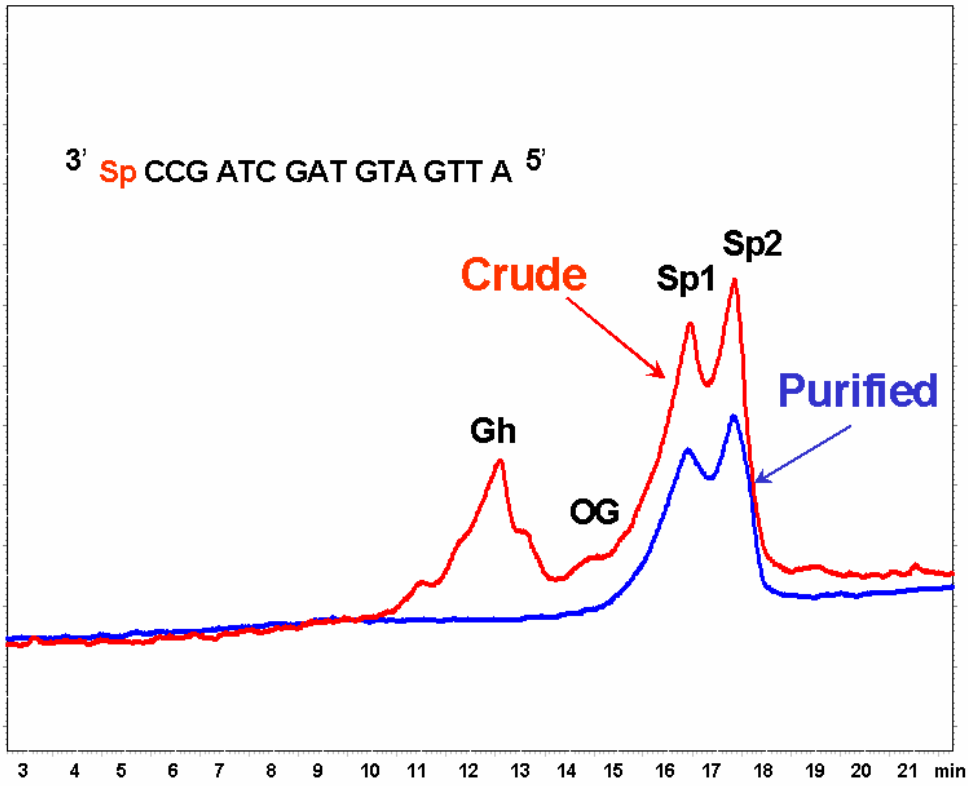

Figure S2. HPLC purification of Sp containing oligodeoxynucleotide. The red trace is the crude product and blue trace indicates the purified diastereomers of Sp.

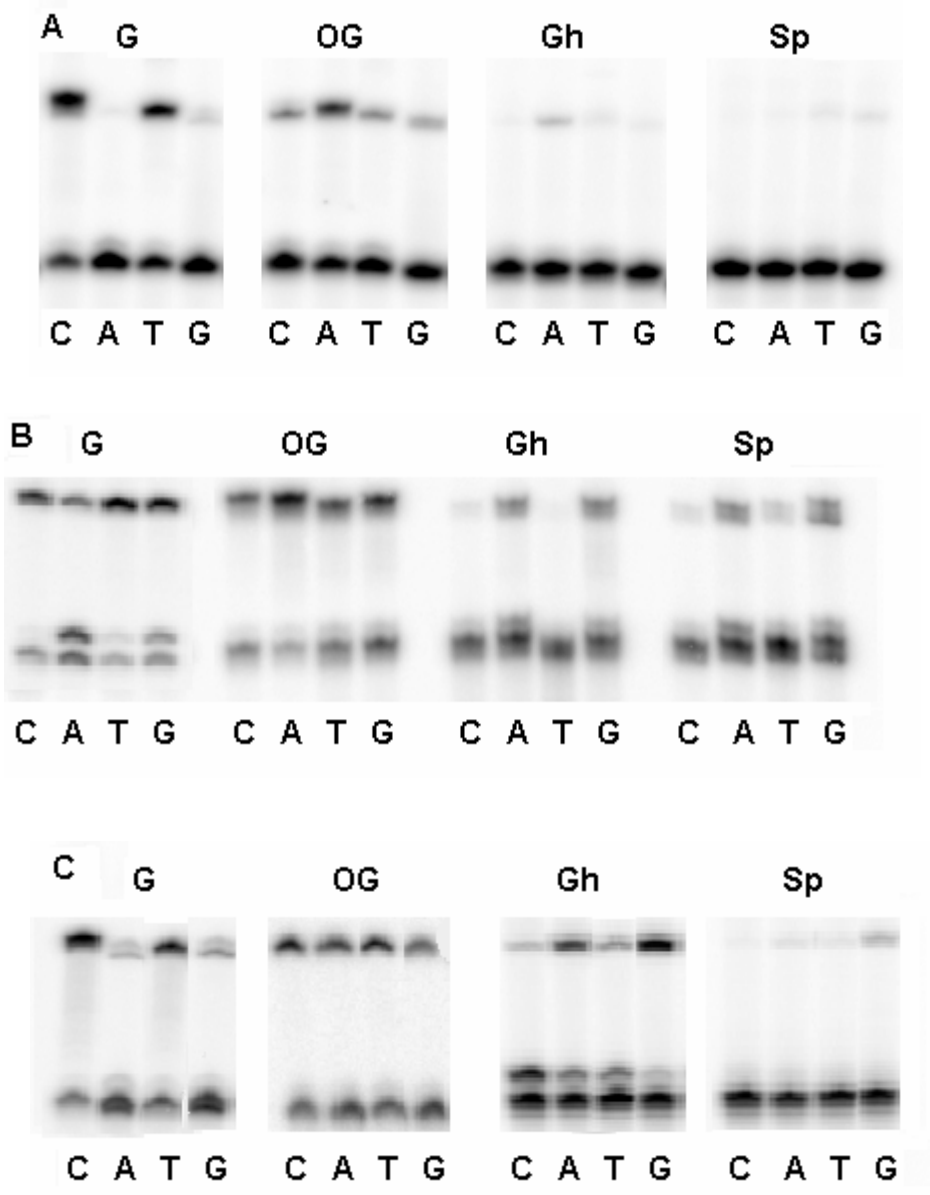

Figure S3. A: lesions on the 3’end of the nick. B: lesions in the template opposite 5’end of the nick. C: lesions on the 5’end of the nick. Sequences used are indicated in Figure 3b, 3c, and 3d of the main text.

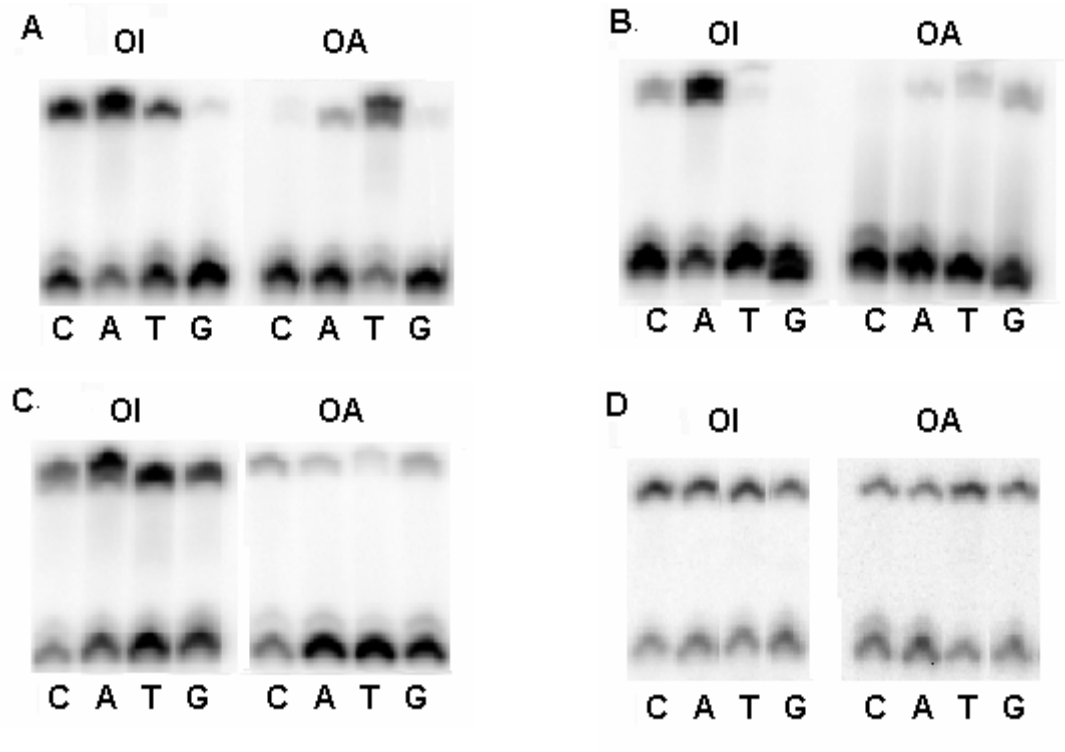

Figure S4. Other ligation results on PAGE (OI and OA). A: lesions in the template opposite 3'end of the nick. B: lesions on the 3'end of the nick. C: lesions in the template opposite 5'end of the nick. D: lesions on the 5'end of the nick. Sequences used are indicated in Figure 3 of the main text.

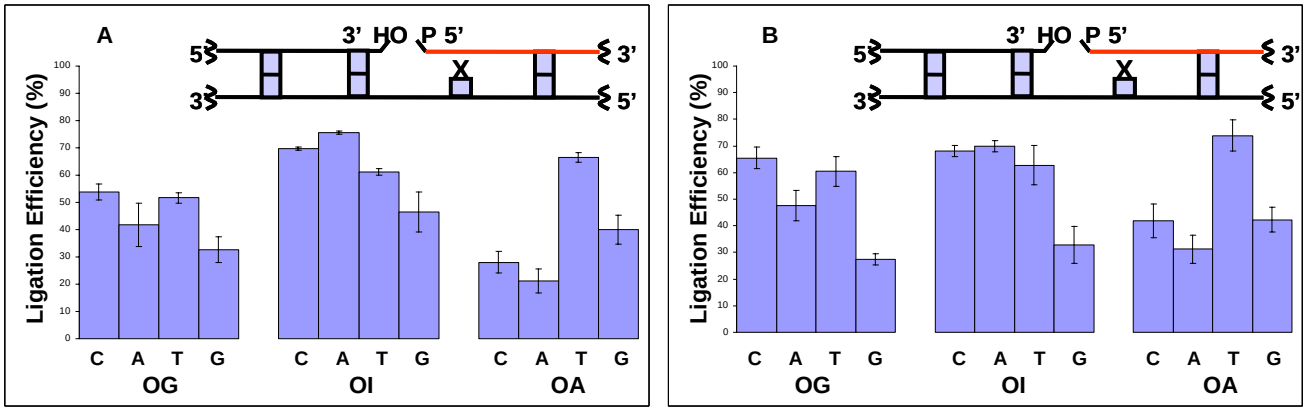

Figure S5. Ligation with lesions on the 5'end of primer 1: comparison of 3' and 5' end labeling. A: Ligation with 3' labeled primer 1. B: Ligation with 5'end labeled primer 1. Sequences used in ligation were indicated in Figure 3d of the main text.