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Mechanism of Interstrand Migration of Organoruthenium Anticancer Complexes within a DNA Duplex

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Electronic Supplementary Information

Figures S1-S4

Fig. S1 (a) HPLC traces detected at 260 nm for reaction mixtures of complex **2** with single strand **I**; (b) Mass spectra for HPLC fractions shown in (a). **1′** = $\{(\eta^6\text{-ind})\text{Ru(en)}\}^{2+}$.

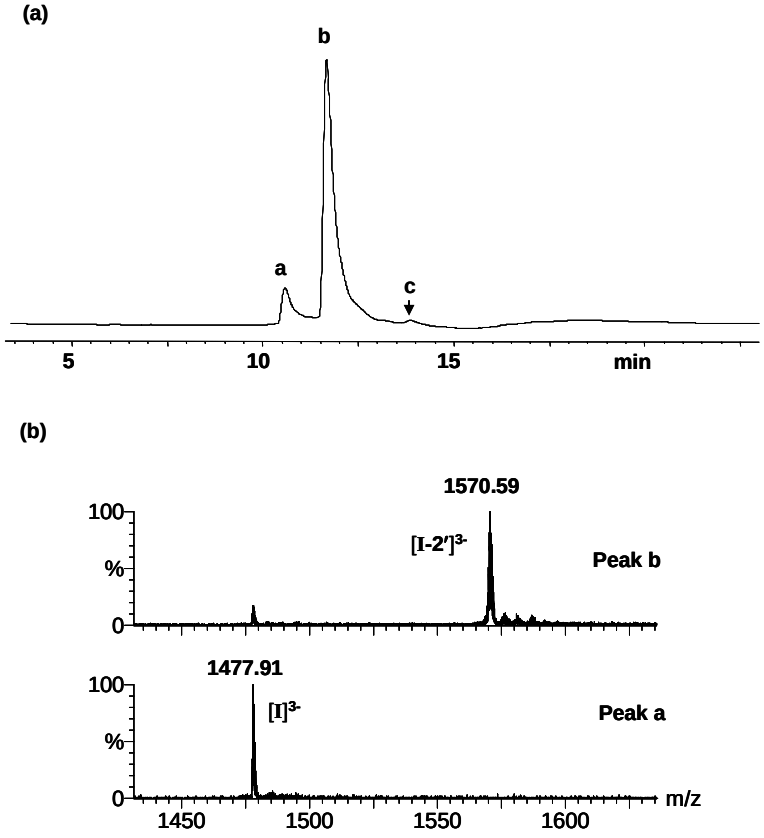

Fig. S2 Mass spectra for ruthenated oligonucleotide fragment F_8 arising from SVP enzymatic digestion of ruthenated **I** by complex **2** (peak b in Figure S1). **2′** = $\{(\eta^6\text{-ind})\text{Ru(en)}\}^{2+}$.

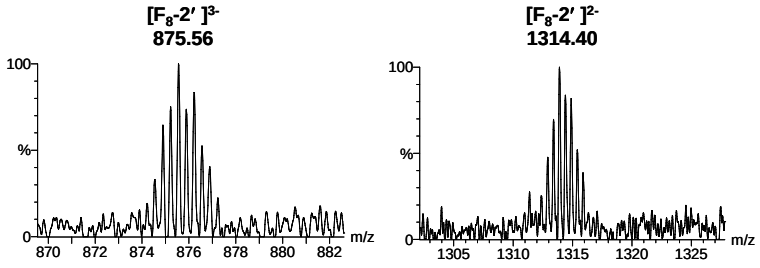

Fig. S3 Mass spectra for ruthenated oligonucleotide fragments F_{21} and F_{26} arising from SVP digestion of strand **II** ruthenated by (a) complex **1**, or (b) complex **2** (Ru/**II** = 1.6) after reaction at 310 K for 24 h. **1′** = $\{(\eta^6\text{-bip})\text{Ru(en)}\}^{2+}$; **2′** = $\{(\eta^6\text{-ind})\text{Ru(en)}\}^{2+}$.

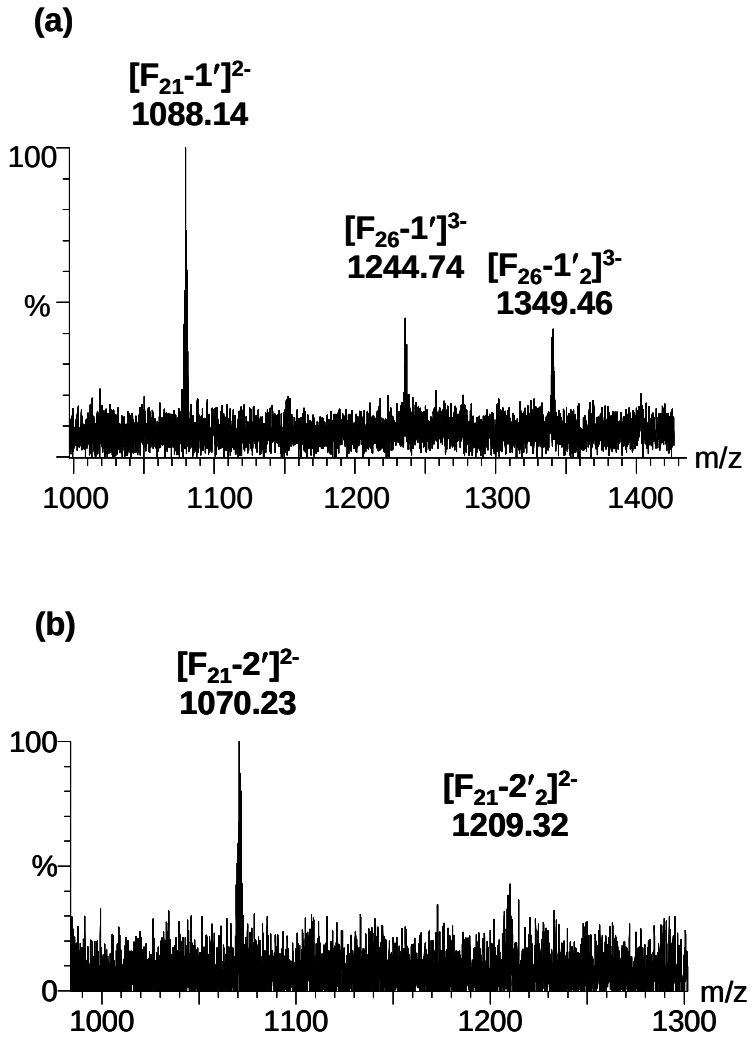

Fig. S4 DNA-bound Ru or Pt detected in human ovarian cancer cells exposed to complex **1** for 24 h (blue) or to cisplatin for 20 h (red, Hector, *et. al. Cancer Chemother. Pharmacol.*, 2001, ***48***, 398-406) at various doses. The treated cells were trypsinised and DNA in cells was extracted using the Nucleon genomic DNA extraction kit (Tepnel Life Sciences, Manchester, UK). The extracted DNA was resuspended in a final volume of 250 μL water and the absorbance was determined at 260 nm using a NanoDrop ND-1000 (NanoDrop Technologies Inc., Wilmington, USA) to give the content of DNA. Ruthenium was analyzed by ICP-MS. (We thank A. Habtemariam, S. Guichard, R. E. Aird and D. I. Jodrell of the University of Edinburgh for their assistance with this experiments)**.**