Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Material

Oxidative DNA Cleavage Promoted by two Phenolate-bridged Binuclear Copper Complexes

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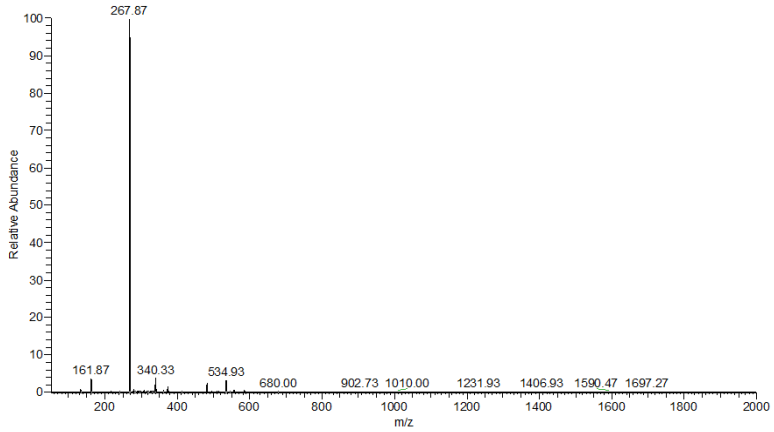

Fig. S1 ESI-MS of (2-hydroxybenzyl)(2-benzimidazolylethyl)amine in methanol.

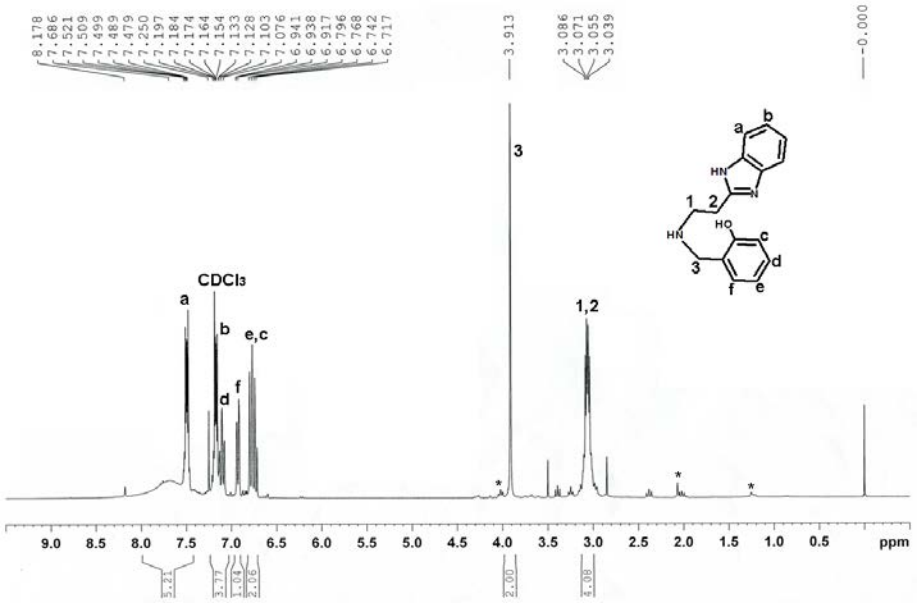

Fig. S2 ^{1}H NMR of (2-hydroxybenzyl)(2-benzimidazolylethyl)amine in $CDCl_3$. The signals marked with * are for the protons from residual solvent ethyl acetate.

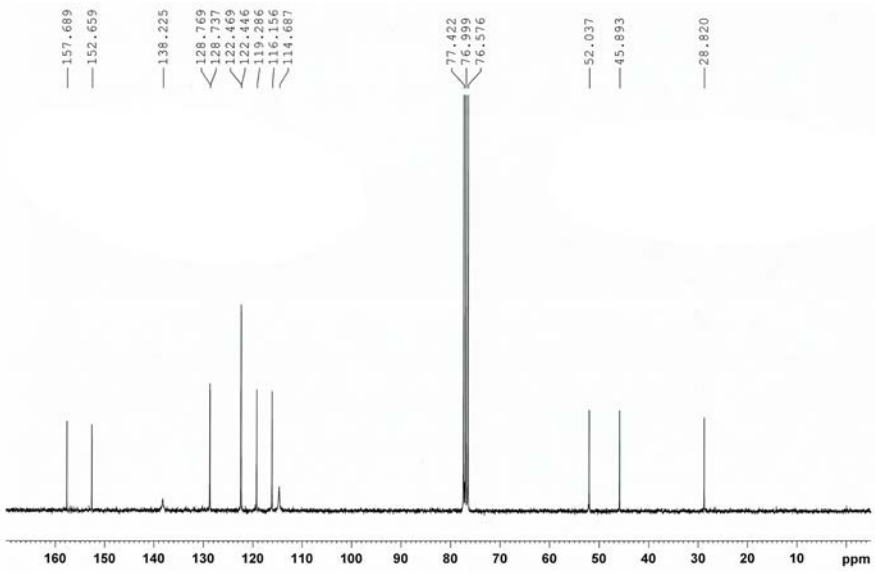

Fig. S3 ^{13}C NMR of (2-hydroxybenzyl)(2-benzimidazolylethyl)amine in $CDCl_3$.

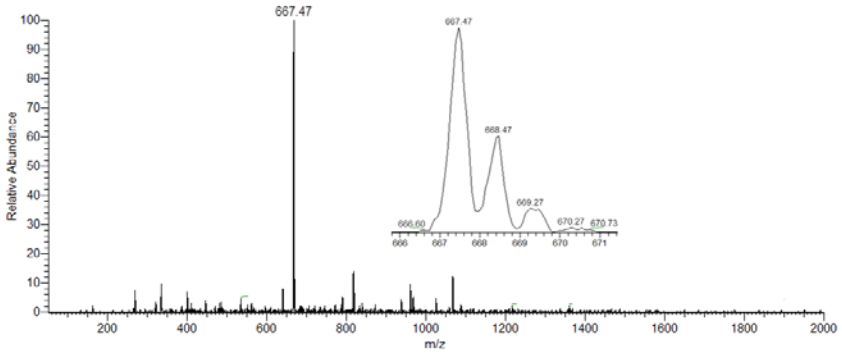

Fig. S4 ESI-MS of 2,6-Bis{[(2-hydroxybenzyl)(2-benzimidazolylethyl)amino]methyl}-4-methylphenol (**L**^{1}) in methanol.

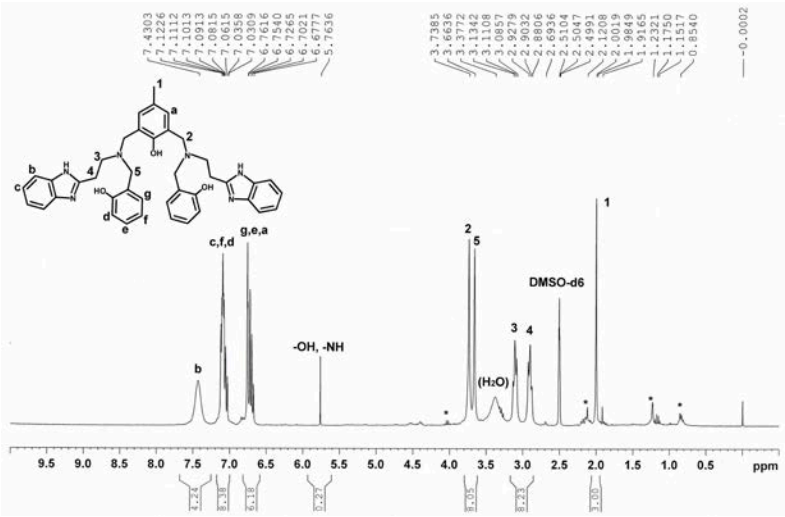

Fig. S5 ^{1}H-NMR of 2,6-bis{[(2-hydroxybenzyl)(2-benzimidazolylethyl)amino]methyl}-4-methylphenol (**L^{1}**) in DMSO-d^{6}. The signals marked with * are for the protons from residual solvents petroleum ether and ethyl acetate.

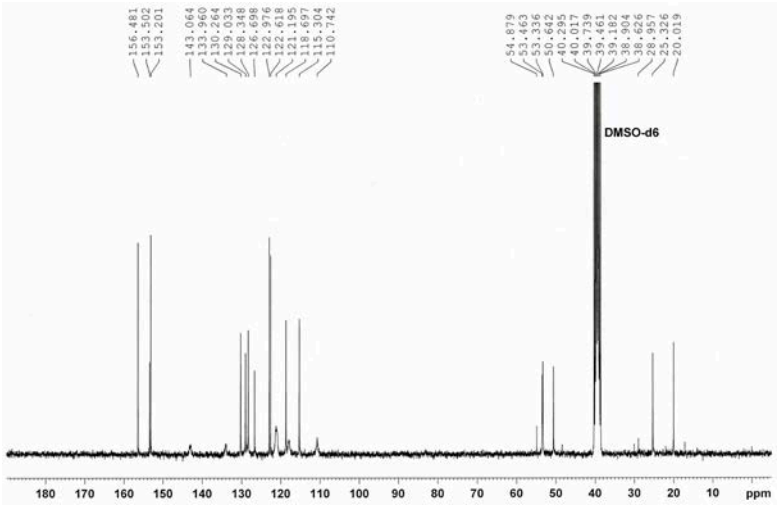

Fig. S6 ^{13}C-NMR of 2,6-bis{[(2-hydroxybenzyl)(2-benzimidazolylethyl)amino]methyl}-4-methylphenol (**L^{1}**) in DMSO-d^{6}.

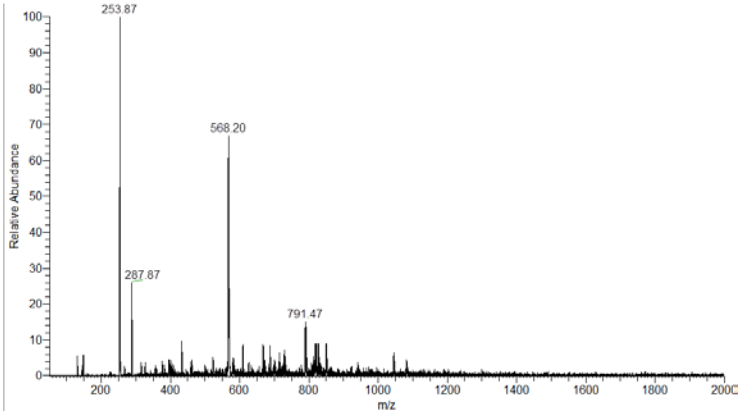

Fig. S7 ESI-MS of (2-hydroxybenzyl)(2-benzimidazolylmethyl)amine in methanol.

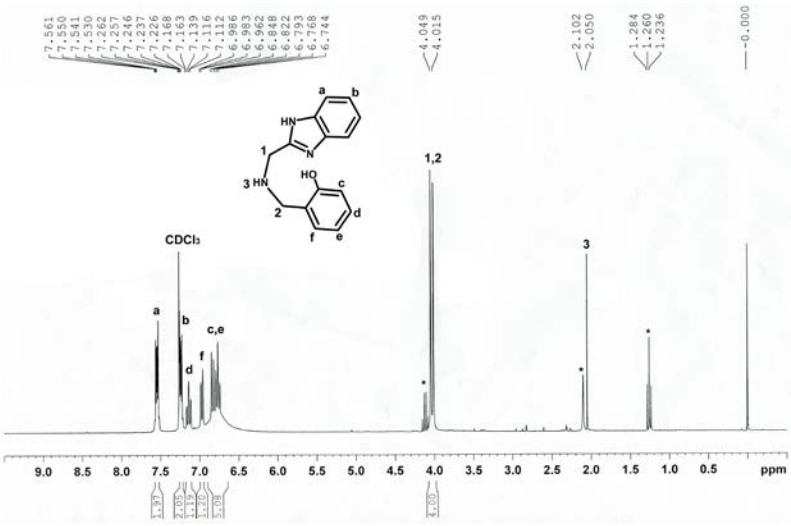

Fig. S8 ^{1}H-NMR of (2-hydroxybenzyl)(2-benzimidazolylmethyl)amine in CD_3Cl. The signals marked with * are for the protons from residual solvent ethyl acetate.

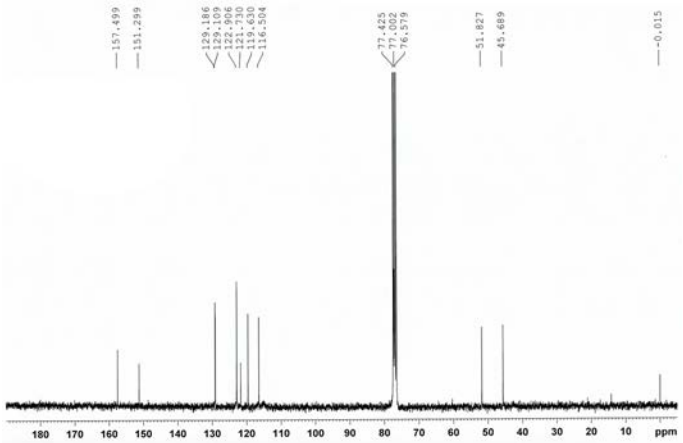

Fig. S9 ^{13}C-NMR of (2-hydroxybenzyl)(2-benzimidazolylmethyl)amine in CD_3Cl.

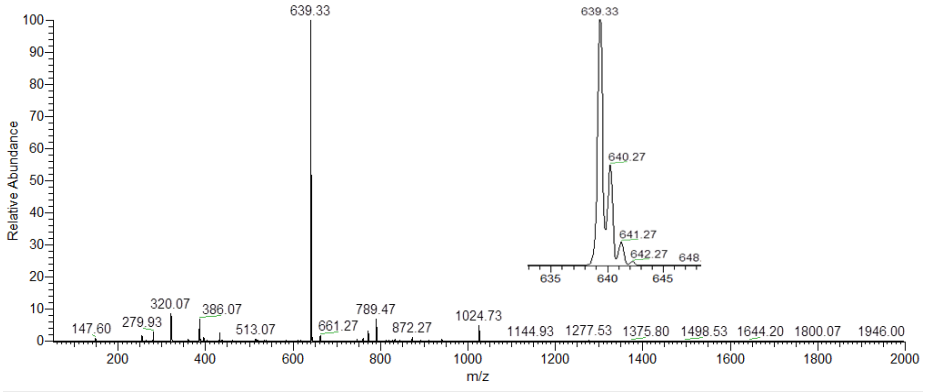

Fig. S10 ESI-MS of 2,6-bis{[(2-hydroxybenzyl)(2-benzimidazolylmethyl)amino]methyl}-4-methylphenol (**L**^{2}) in methanol.

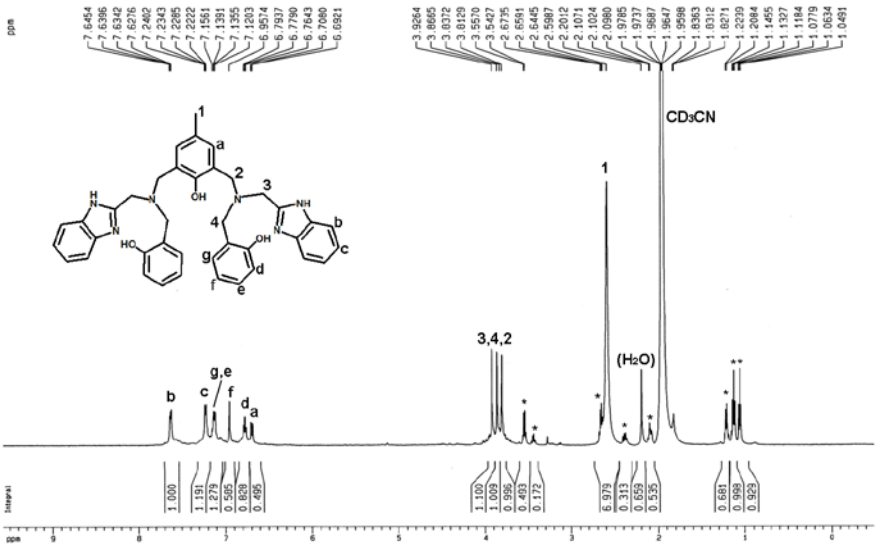

Fig. S11 ^{1}H-NMR of 2,6-bis{[(2-hydroxybenzyl)(2-benzimidazolylmethyl)amino]methyl}-4-methylphenol (**L**^{2}) in CD_3CN. The signals marked with * are for the protons from residual diethyl ether or ethanol.

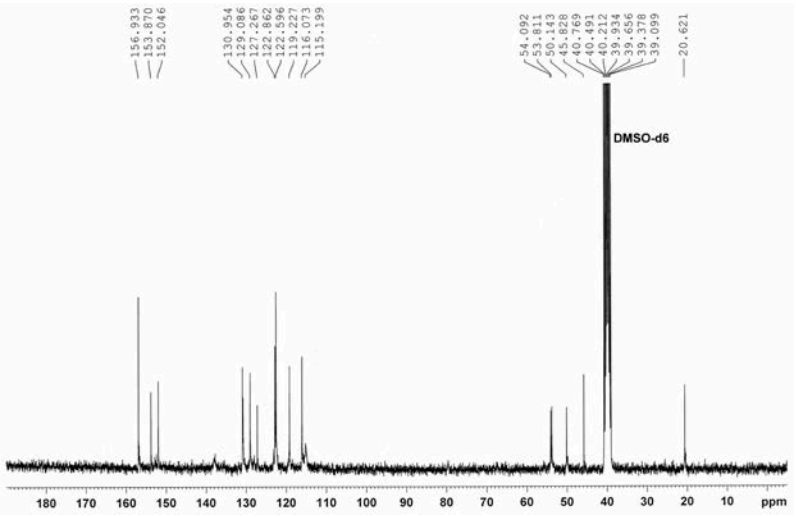

Fig. S12 ^{13}C-NMR of 2,6-bis{[(2-hydroxybenzyl)(2-benzimidazolylmethyl)amino]methyl}-4-methylphenol (**L**^{2}) in DMSO-d^{6}.

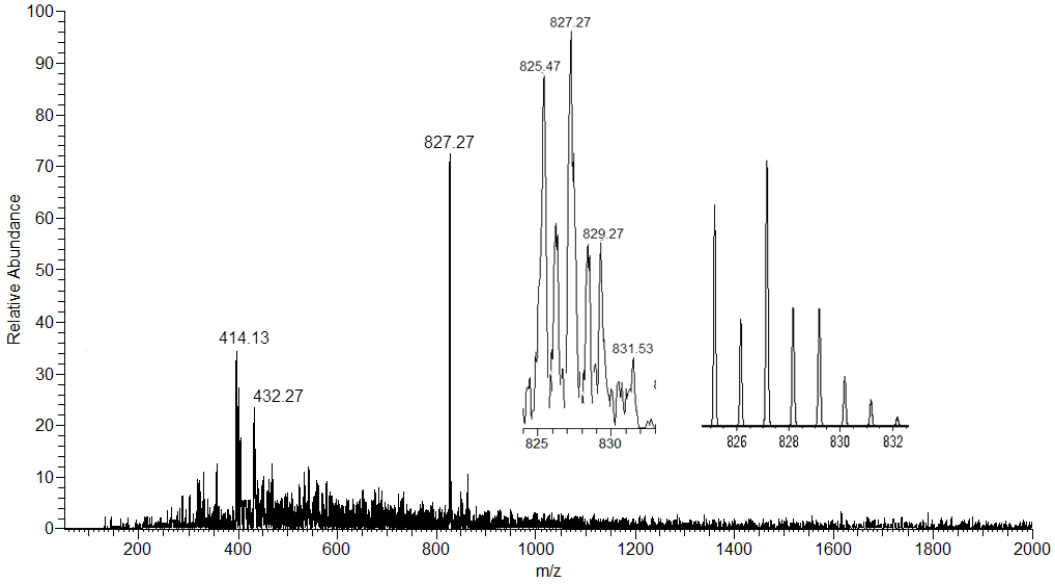

Fig. S13 ESI-MS of complex **1** in methanol.

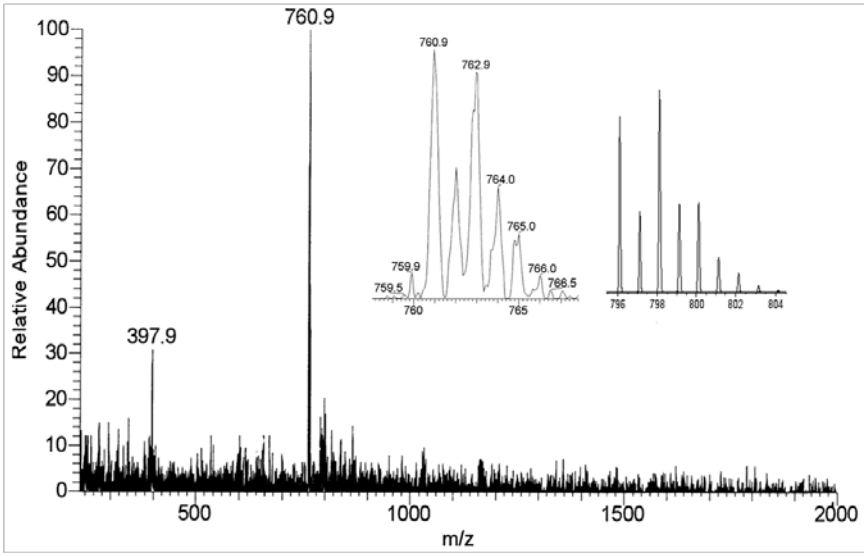

Fig. S14 ESI-MS of complex **2** in methanol.

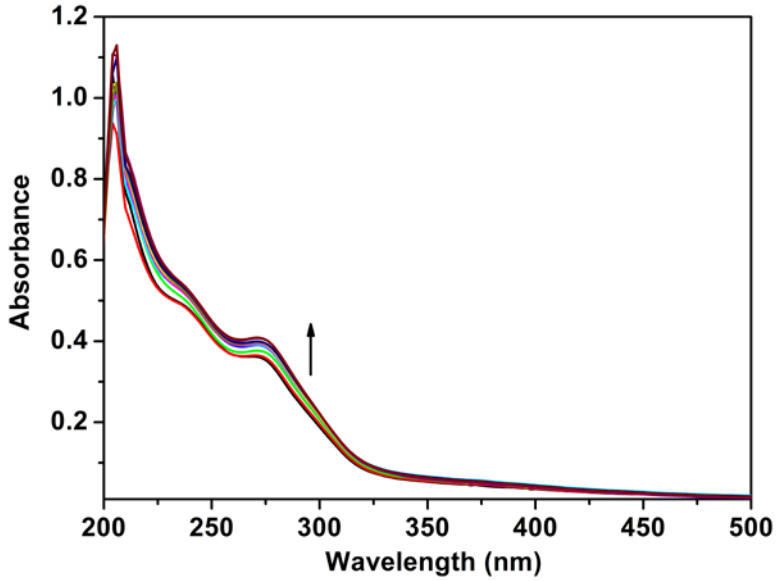

Fig. S15 Absorption spectra of complex **2** ([complex] = 25 μM) in the absence and presence of increasing amount of CT-DNA (2.5, 5.0, 7.5, 10.0, 12.5, 15.0, 20.0, 22.5, and 25 μM) at room temperature in Tris-HCl/NaCl buffer (pH 7.4).

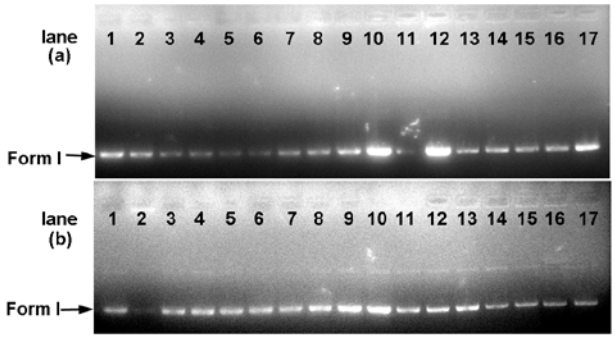

Fig. S16 Agarose gel electrophoresis patterns for the cleavage of pUC19 plasmid DNA (0.02 μg/μL) by complexes **3** and **4** in buffer (50 mM Tris-HCl/50 mM NaCl, pH 7.4) at 37 ºC after 30 min of incubation. (a) Lane 1, DNA control; Lane 2, DNA +1 mM Vc; Lane 3, DNA 80 μM complex **3**; Lane 4–7, DNA + 10, 20, 30, 40, 50, 60, 66, 72, 78, 84, 90, 96, 102, 108 μM complex **3** + 100-fold excess of Vc, respectively; (b) Lane 1, DNA control; Lane 2, DNA +1 mM Vc; Lane 3, DNA 80 μM complex **4**; Lane 4–7, DNA + 10, 20, 30, 40, 50, 60, 66, 72, 78, 84, 90, 96, 102, 108 μM complex **4** + 100-fold excess of Vc, respectively.