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$_3$Cl. 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$_3$Cl.
Fig. S10  ESI-MS of 2,6-bis\{[(2-hydroxybenzyl)(2-benzimidazolylmethyl)amino]methyl\}-4-methylphenol (L²) in methanol.

Fig. S11  $^1$H-NMR of 2,6-bis\{[(2-hydroxybenzyl)(2-benzimidazolylmethyl)amino]methyl\}-4-methylphenol (L²) in CD₃CN. 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 °C 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.