Supplementary Information

Phosphatase-like Activity, DNA Binding, DNA Hydrolysis, Anticancer and Lactate Dehydrogenase Inhibition activity Promoting by a New Bis–Phenanthroline Dicopper(II) Complex†

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Fig. S1. Solid state electronic spectrum of [Cu₂(μ-OH₂)(μ-CH₃COO)(μ-OH)(phen)₂][ClO₄]₂ complex (1).
**Fig. S2.** X-band EPR spectrum of dinuclear complex 1 in MeCN at 77 K. Inset gives the EPR showing the $\Delta M_s = \pm 2$ transition.

**Fig. S3.** The crystal packing of the binuclear Cu(II) complex 1, viewed along the ‘c’ axis.
**Fig. S4.** Cytotoxic effect of complex-1 in MCF-7 cells assessed by lactate dehydrogenase activity in cell lysate for 48h. (b) Cytotoxic effect of complex-1 in MCF-7 cells assessed by lactate dehydrogenase activity in medium for 48h.

**Fig. S5.** Cyclic voltammogram of complex 1 measured in MeCN + 0.1 mol L^{-1} TBAP (25 °C), using a Glassy Carbon Electrode as the working electrode.
**Fig. S6.** The pH dependence plot for the binuclear Cu(II) complex 1 on phosphate hydrolysis reaction.