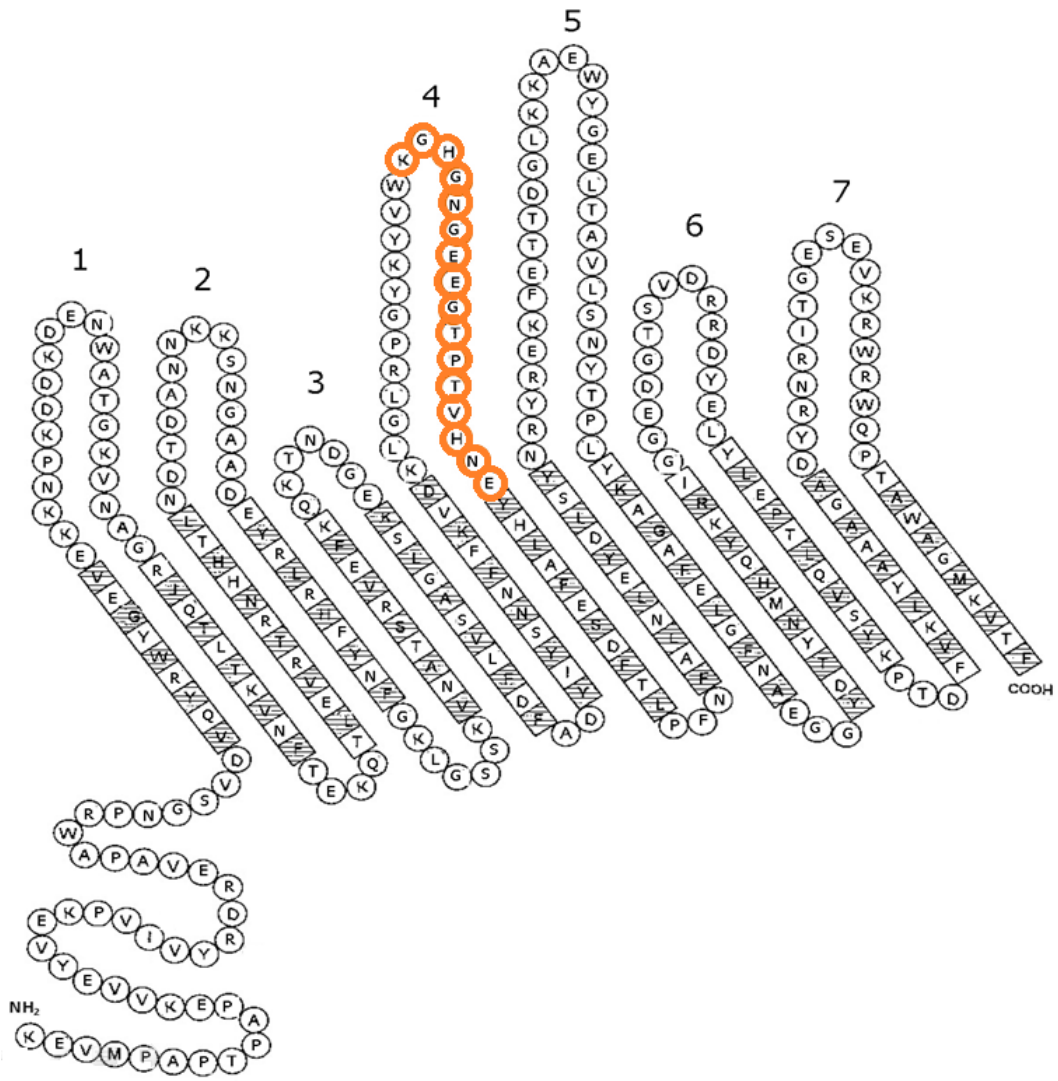

Fig. S1 FomA protein model with the color marked Ac-KGHGNGEEGTPTVHNE-NH_2 peptide building loop number 4.

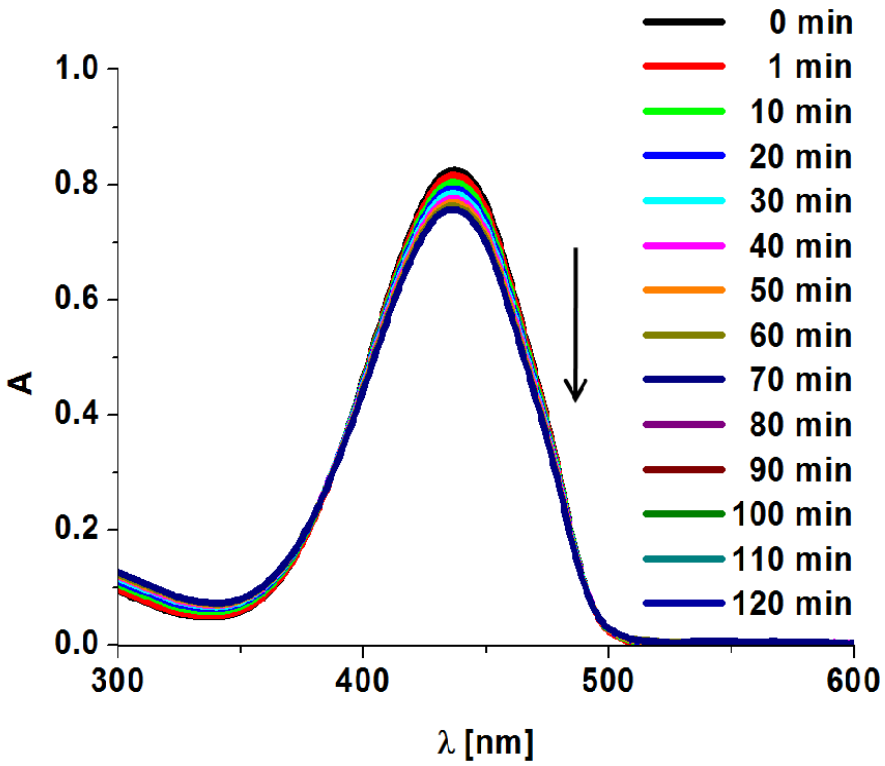

Fig. S2 NDMA decay UV-Vis spectra for **1Cu** in the presence of H_2O_2 (50 μM) after 2 hours of measurements (Cu:L = 1:1 molar ratio, [Cu(II)] = 50 μM).

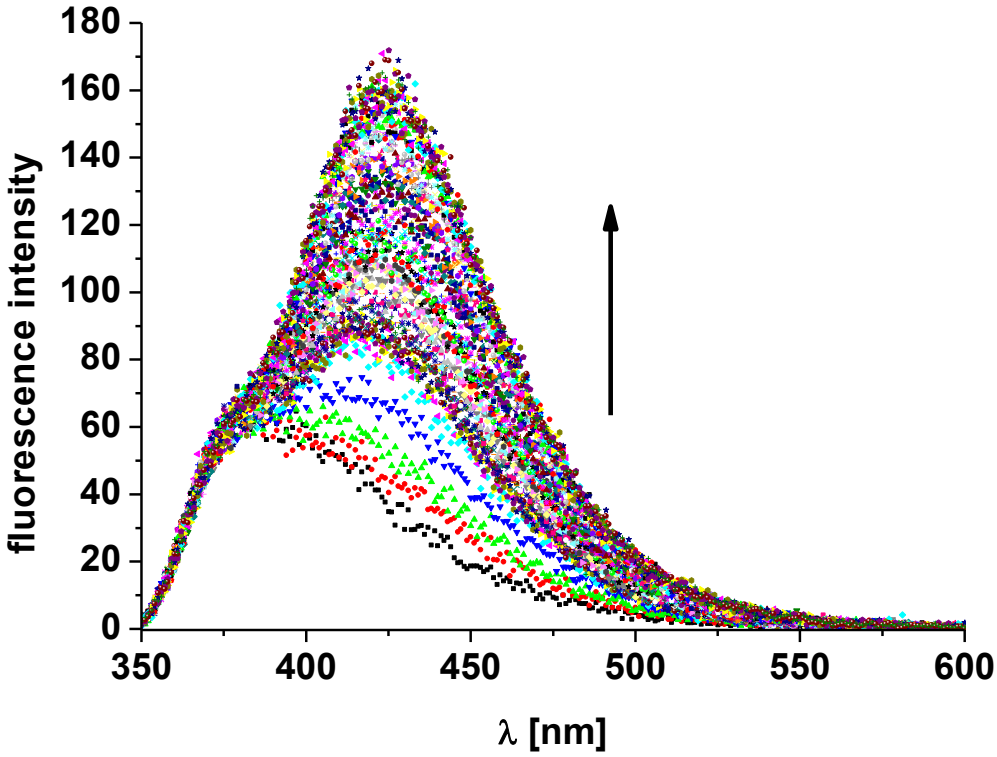

Fig. S3 Fluorescence spectra of TAOH formation for **2Cu** in the presence of H_2O_2 (50 μM) measured with 1 minute intervals for 1 hour (Cu:L = 1:1 molar ratio, [Cu(II)] = 50 μM).

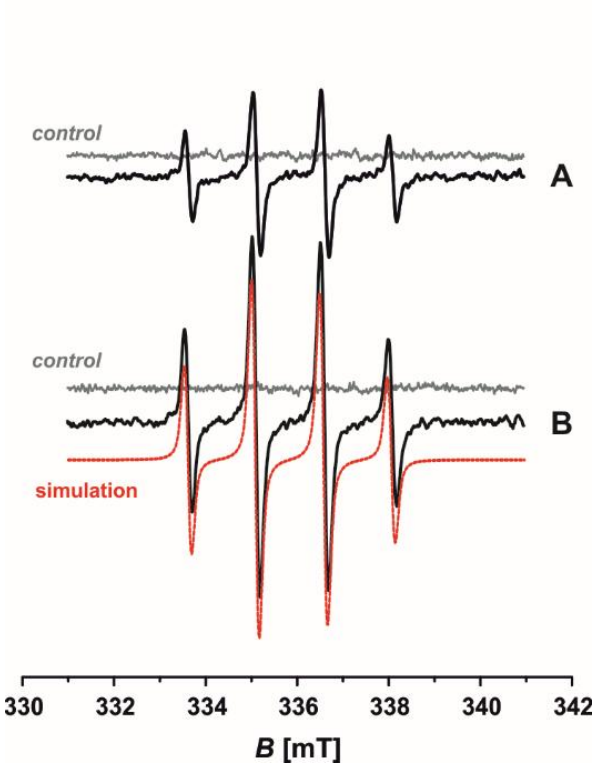

Fig. S4 EPR spectra (common intensity scale) of DMPO spin adducts formed during reaction of 50 μM of **1Cu** (A) and **2Cu** (B) with H_2O_2. EPR spectra for controls were recorded in the absence of the copper compounds.

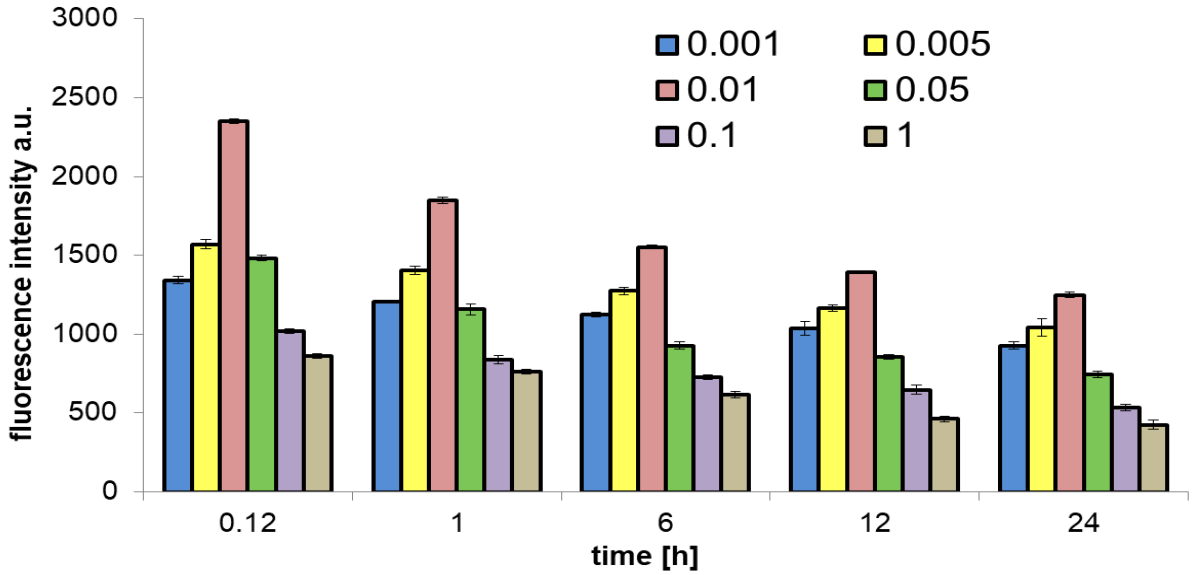

Fig. S5 Reduction of fluorescence intensity of CT26 cells incubated with **1Cu** at increasing incubation time observed using cyto-ID hypoxia/oxidative stress detection kit. Concentration of **1Cu** from 0.001 mM to 1 mM.

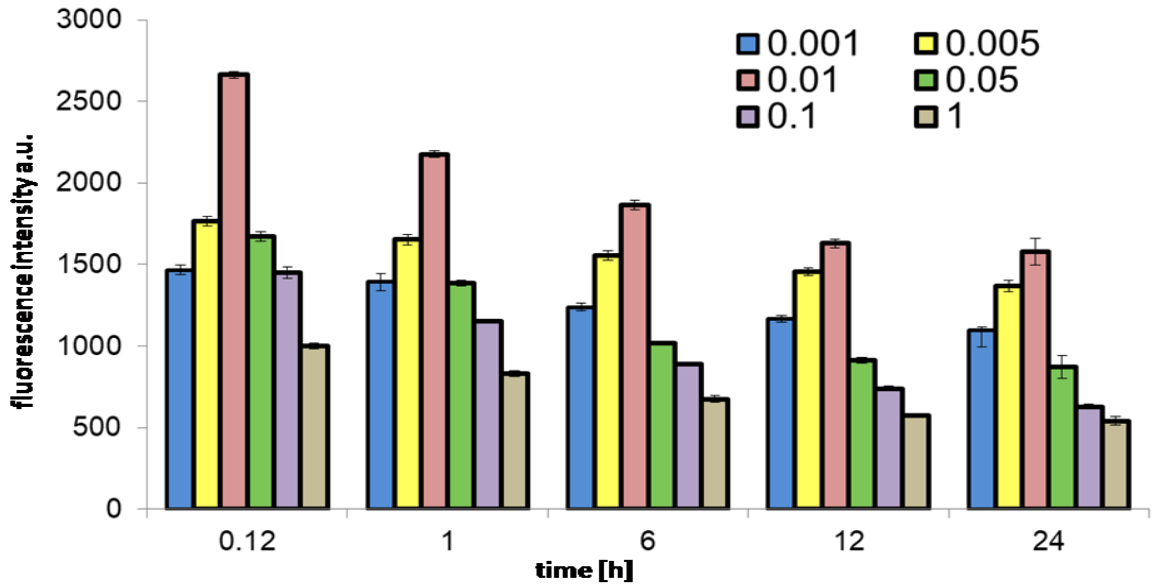

Fig. S6 Reduction of fluorescence intensity of CT26 cells incubated with **2Cu** at increasing incubation time observed using cyto-ID hypoxia/oxidative stress detection kit. Concentration of **2Cu** from 0.001 mM to 1 mM.

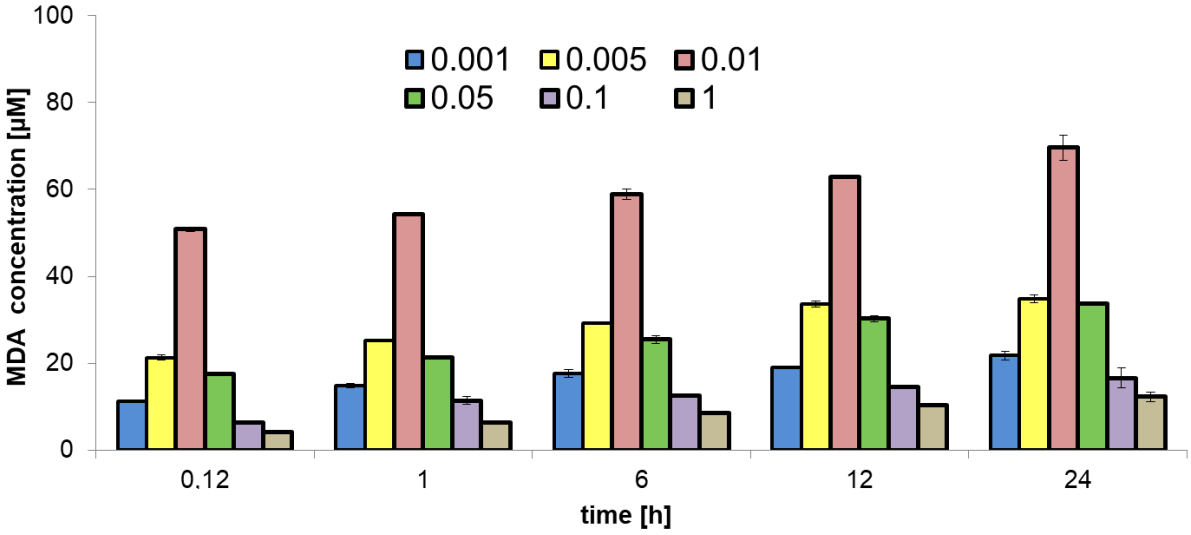

Fig. S7 MDA concentration in CT26 cells treated with **1Cu** of 0.001, 0.005, 0.01, 0.05, 0.1 and 1 mM after 5min, 1, 6, 12 and 24h incubation with the complex.

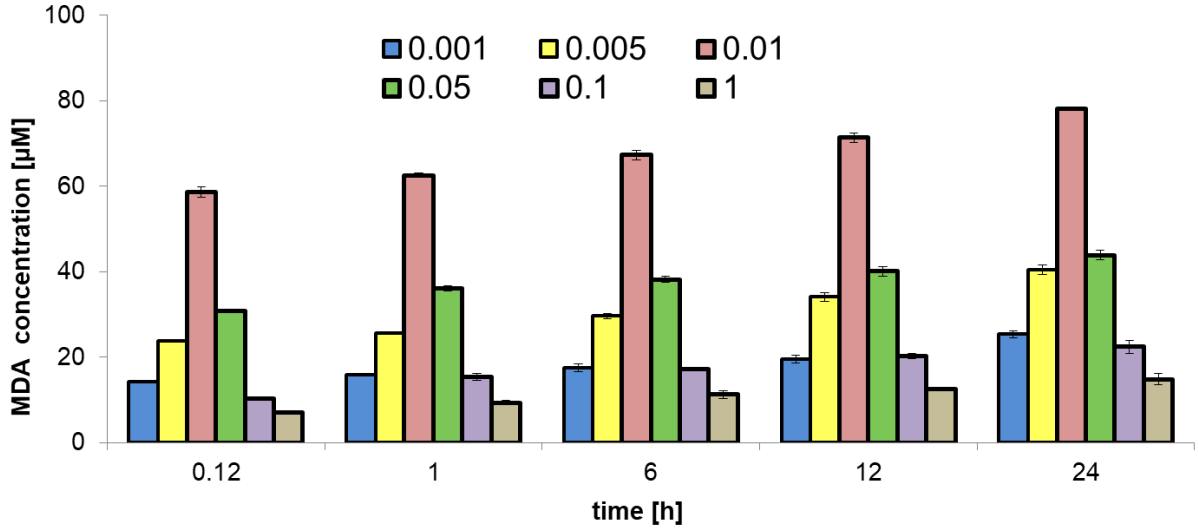

Fig. S8 MDA concentration in CT26 cells treated with **2Cu** of 0.001, 0.005, 0.01, 0.05, 0.1 and 1 mM after 5min, 1, 6, 12 and 24h incubation with the complex.