

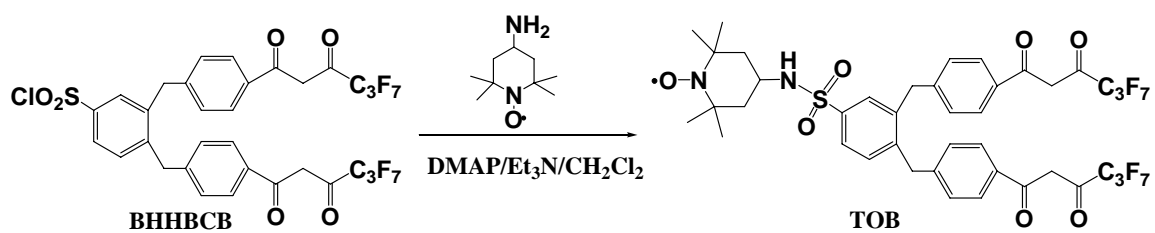
Supporting information for:

Background-free *in-vivo* Imaging of Vitamin C using Time-gateable Responsive Probe

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Scheme S1. Reaction pathway for the synthesis of TOB.

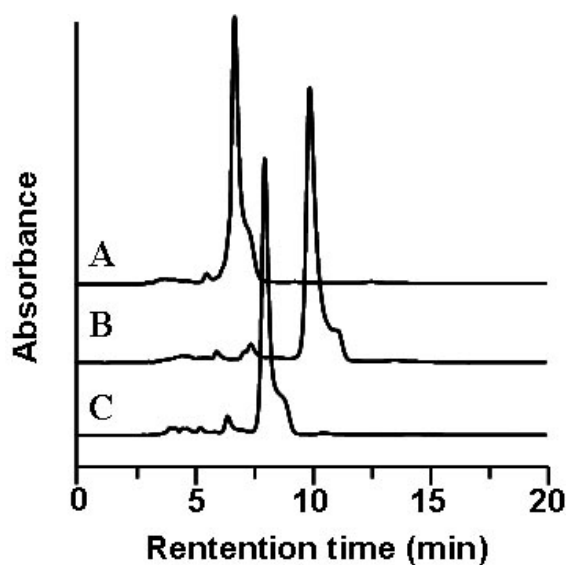


Figure S1. HPLC chromatograms of TOHB-Eu³⁺ (A), TOB-Eu³⁺ (B) and TOB (C).

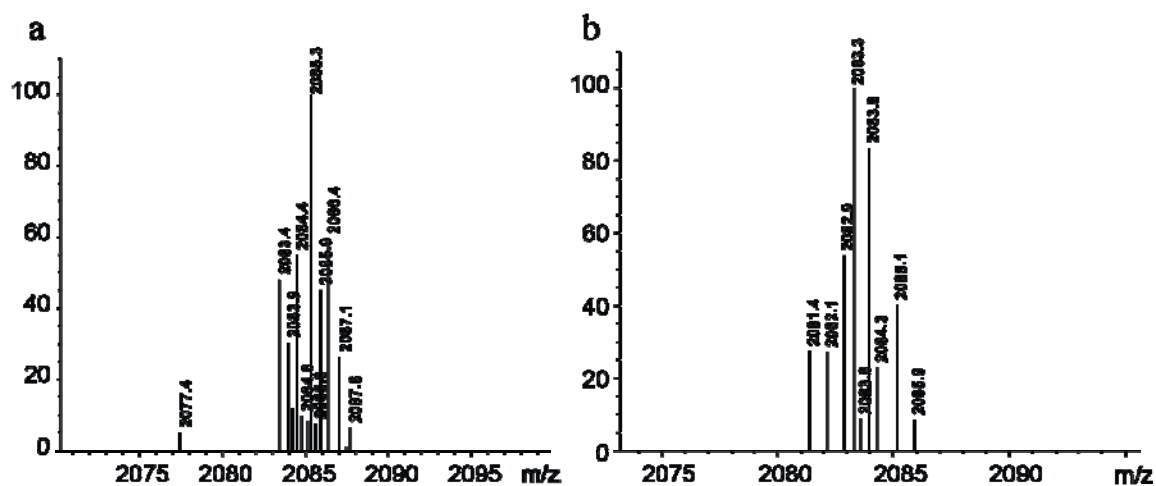


Figure S2. ES-API mass spectra of TOHB-Eu³⁺ (a) and TOB-Eu³⁺ (b).

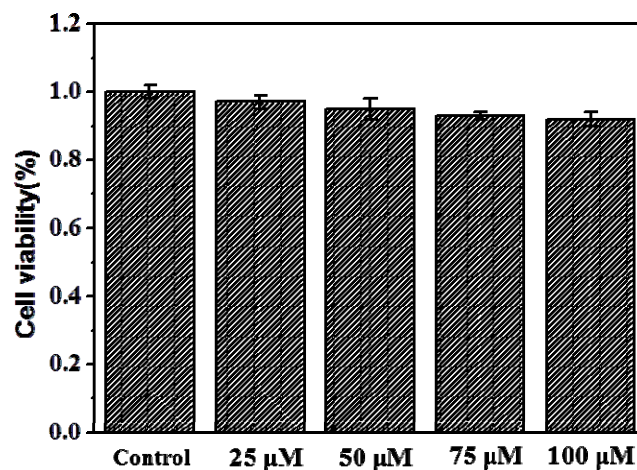


Figure S3. Viabilities of the HepG2 cells after incubated with different concentrations of TOB-Eu³⁺ for 24 h.

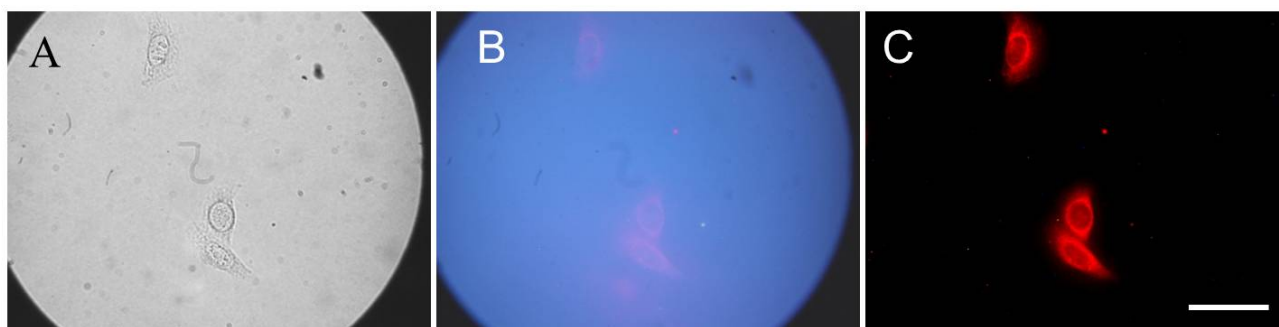


Figure S4. Bright-field (A), steady-state (B) and time-gated luminescence images (C) of HepG2 cells loaded with 1.0 mM vitamin C for 40 min and followed by incubation with 20 μM TOB-Eu³⁺ for 1 h. Scale bar: 50 μm.

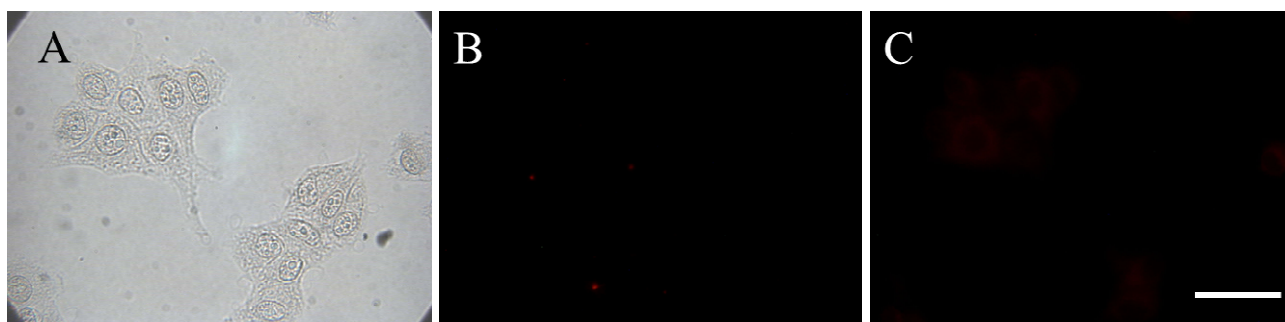


Figure S5. Bright-field (A) and time-gated luminescence images of HepG2 cells incubated with 20 μM TOB-Eu³⁺ for 1 h (B) or 4 h (C). Scale bar: 50 μm.

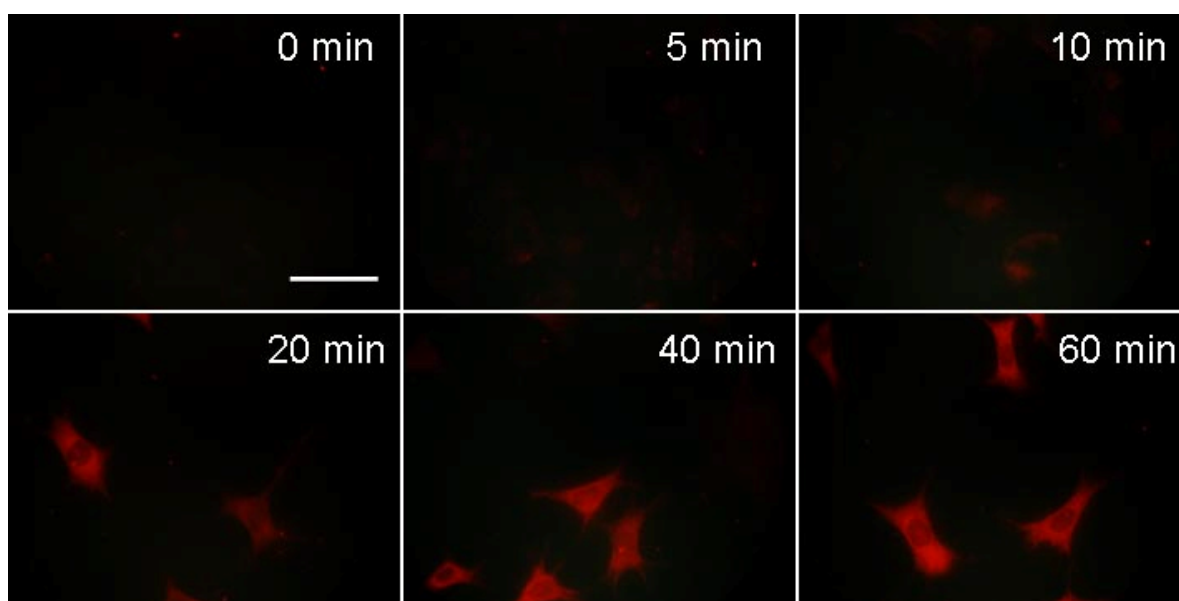


Figure S6. Time-gated luminescence microscopy images of HeLa cells loaded with 1.0 mM AA for various incubation times and followed by incubation with 20 μM TOB-Eu³⁺ for 1 h. Scale bar: 50 μm .

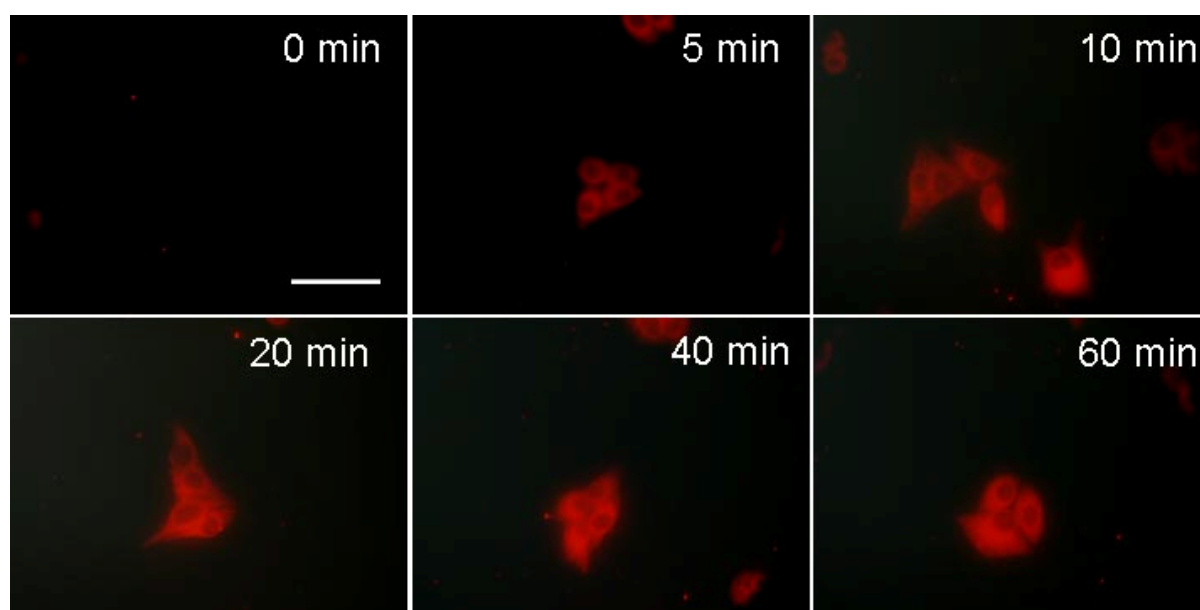


Figure S7. Time-gated luminescence microscopy images of HepG2 cells loaded with 1.0 mM DHA for various incubation times and followed by incubation with 20 μM TOB-Eu³⁺ for 1 h. Scale bar: 50 μm .