A tunable fluorescence probe for superoxide anion detection during inflammation caused by *Treponema pallidum*

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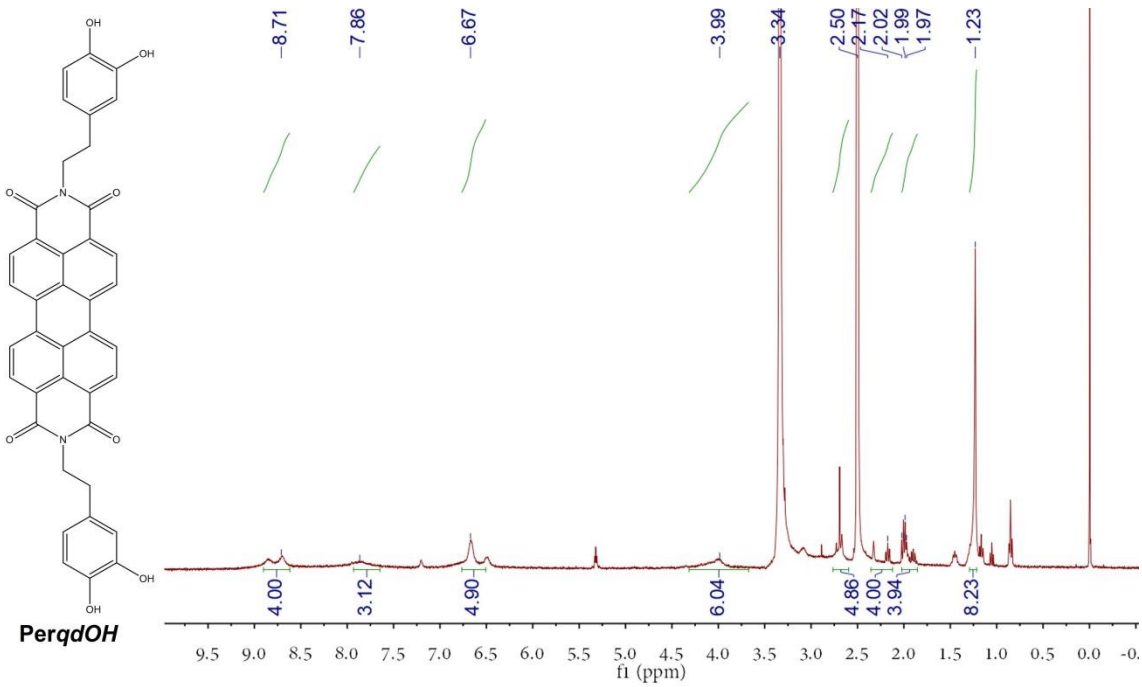

Figure S1. [1]HNMR of **Per*qdOH*.** [1]H NMR (400 MHz, DMSO-d_6) δ 8.71 (s, 4H), 7.86 (s, 3H), 6.67 (s, 5H), 3.99 (s, 6H), 2.76 – 2.59 (m, 5H), 2.17 (s, 4H), 1.98 (d, J = 6.6 Hz, 4H), 1.23 (s, 8H).

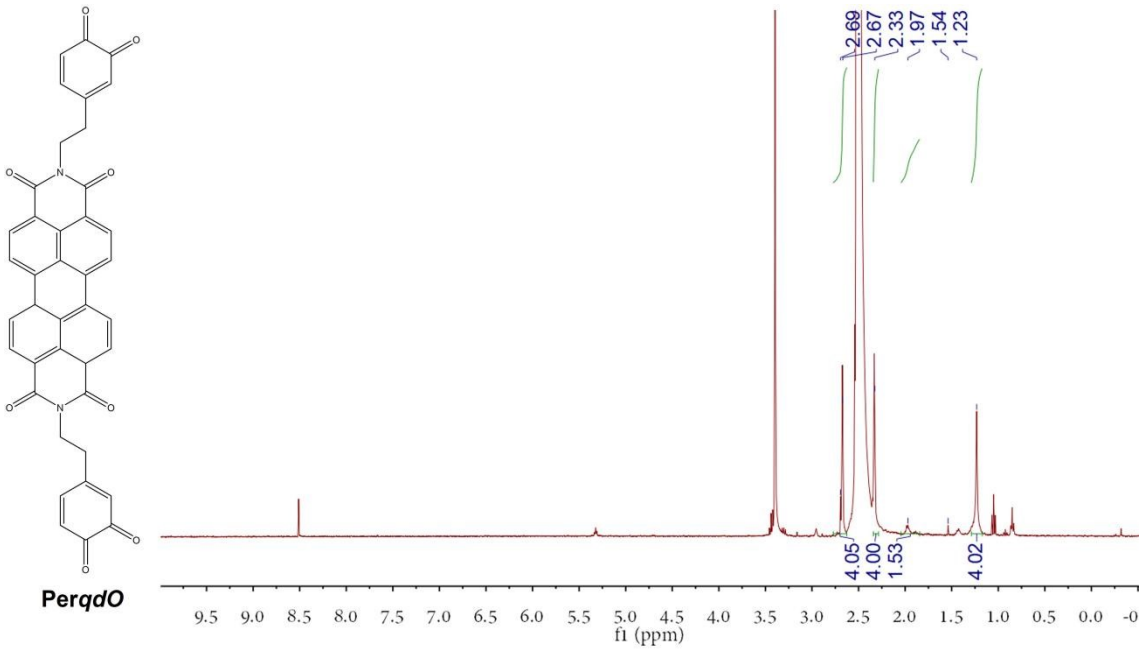

Figure S2. [1]HNMR of **Per*qdO*.** [1]H NMR (400 MHz, DMSO-d_6) δ 2.68 (d, J = 9.6 Hz, 4H), 2.33 (s, 4H), 1.97 (s, 2H), 1.23 (s, 4H).

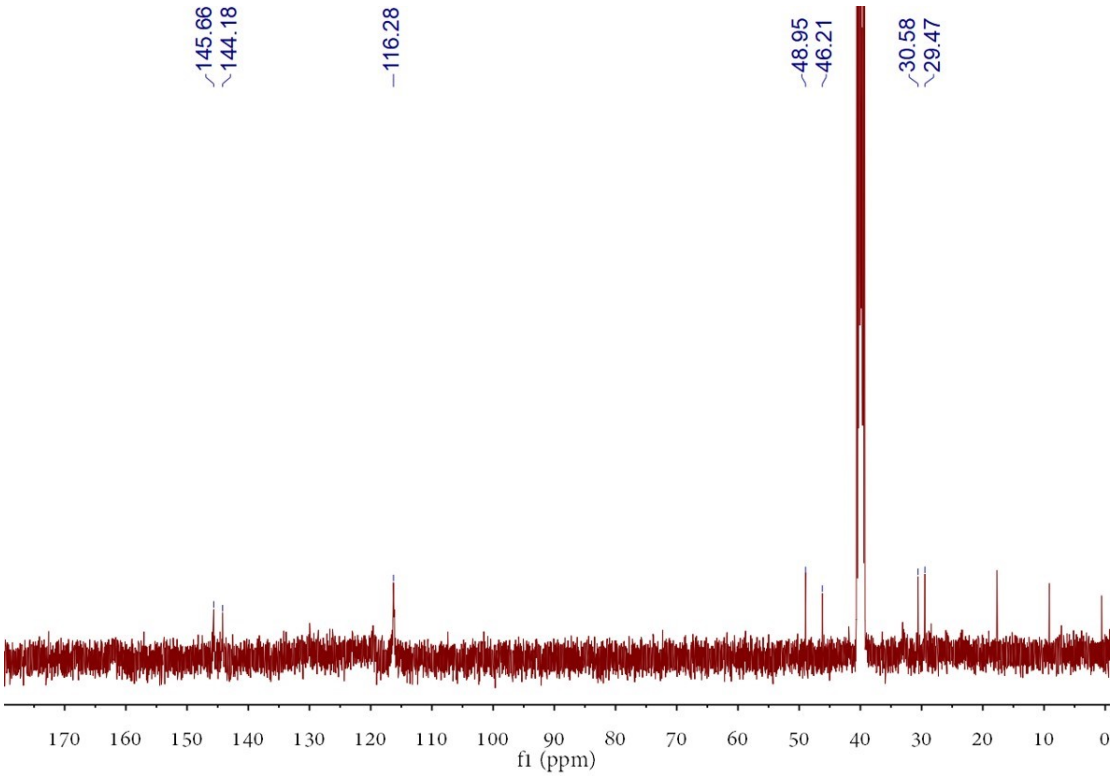

Figure S3. ^{13}CNMR of **Per*qdOH*.** ^{13}C NMR (101 MHz, DMSO-d_6) δ 145.66, 144.18, 116.28, 48.95, 46.21, 30.58, 29.47.

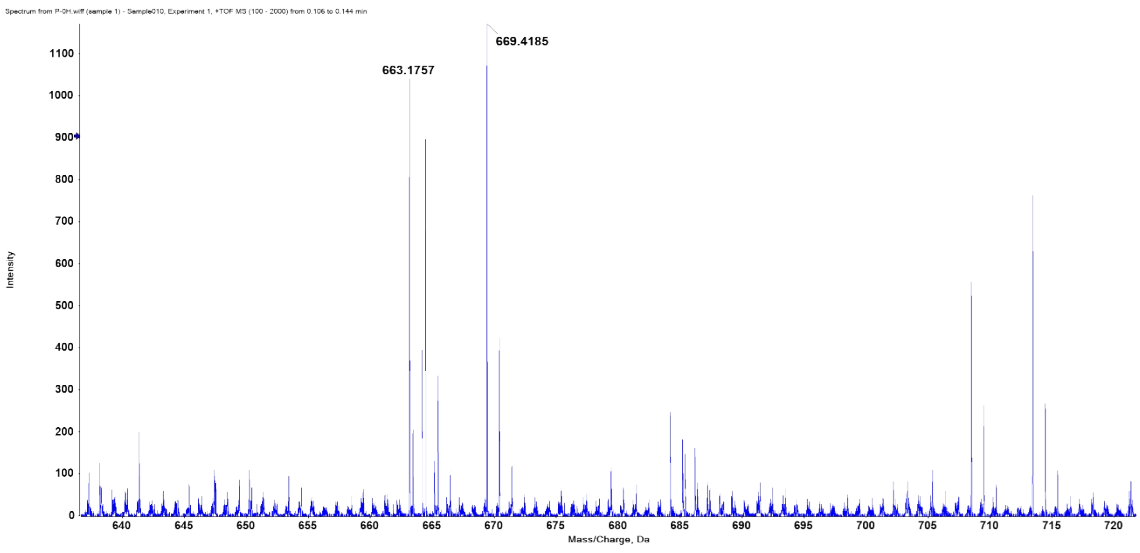

Figure S4. HR-MS of **Per*qdOH*.**

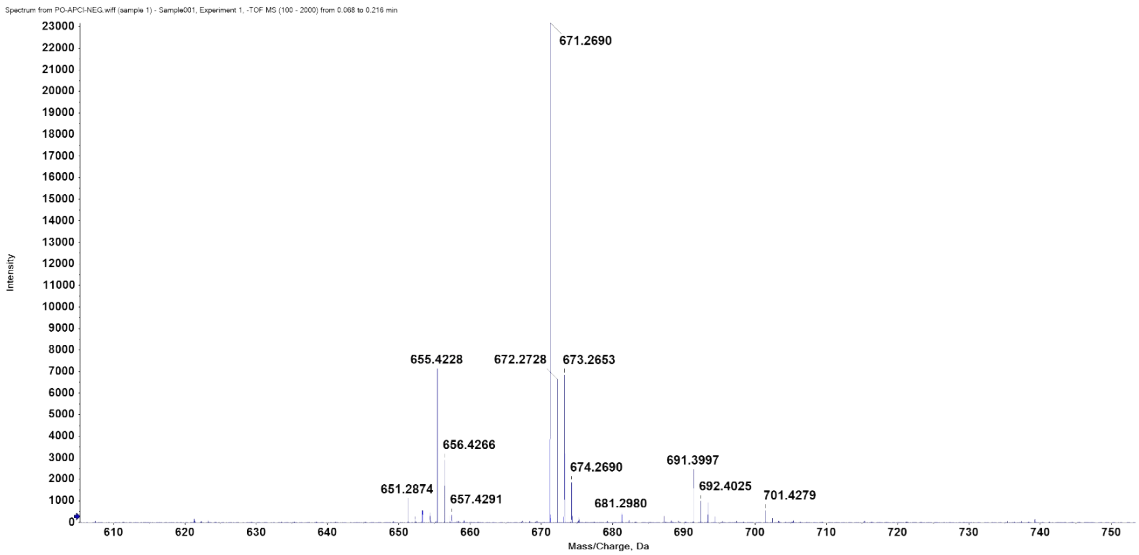

Figure S5. HR-MS of **Per*qdO*.**

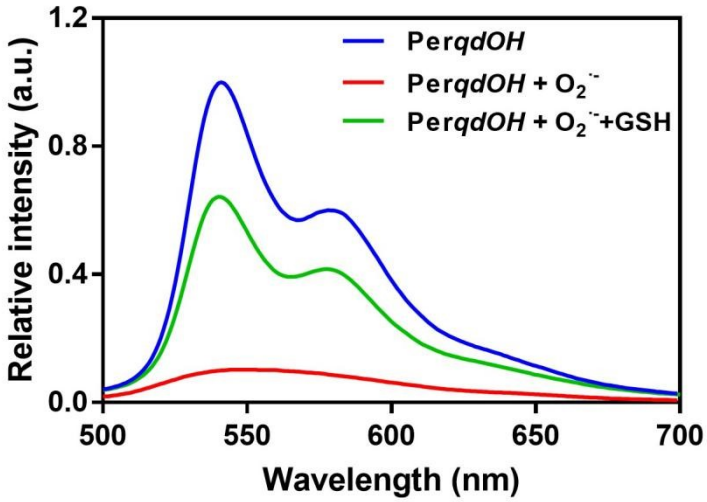

Figure S6. The fluorescence spectra change (Ex=490 nm) of **Per*qdOH*** after adding $O_2^{\cdot-}$ and GSH.

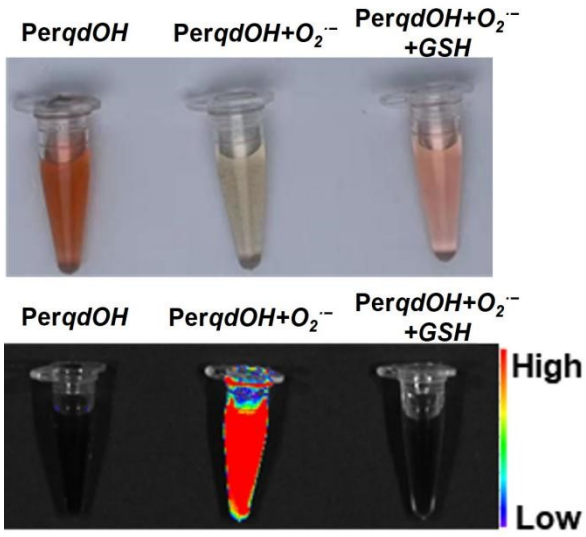

Figure S7. Images of **Per*qdOH*** after adding O_2^- and GSH under natural light and the condition of excitation of 680 nm and emission of 750 nm.

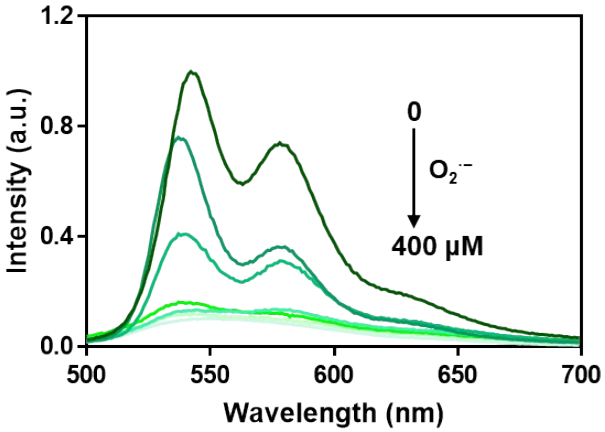

Figure S8. The fluorescence spectra change (Ex=490 nm) of **Per*qdOH*** after adding different concentrations of O_2^- (0-400 μM).

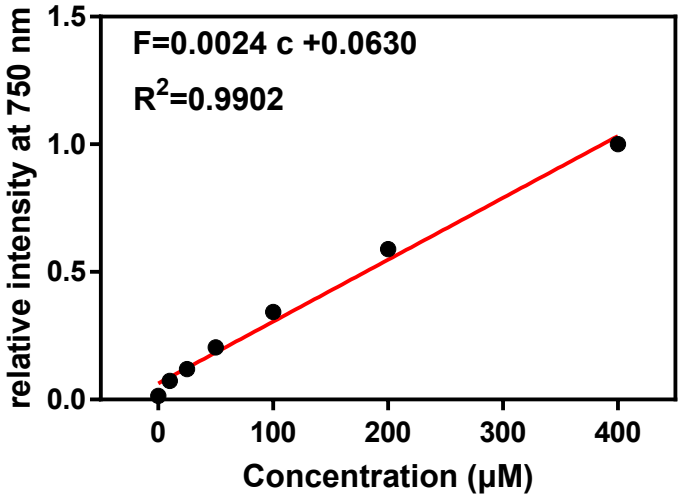

Figure S9. The linear fitting curve of the relative fluorescence intensity at 750 nm.

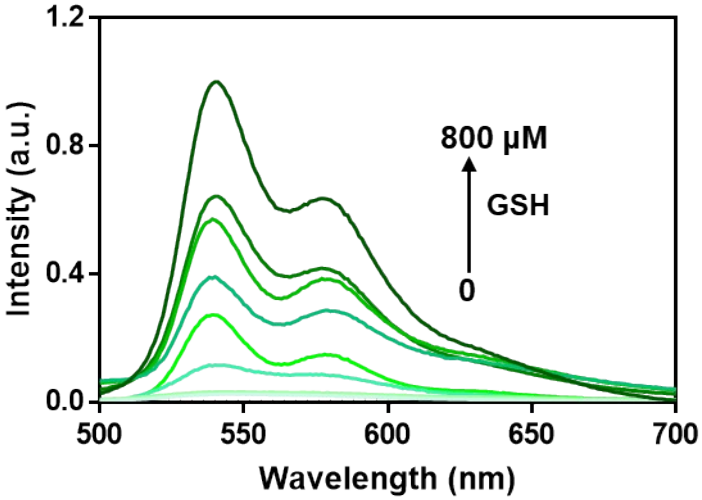

Figure S10. The fluorescence spectra change (Ex=490 nm) of **Per*qdOH*** after adding different concentrations of GSH (0-800 μM).

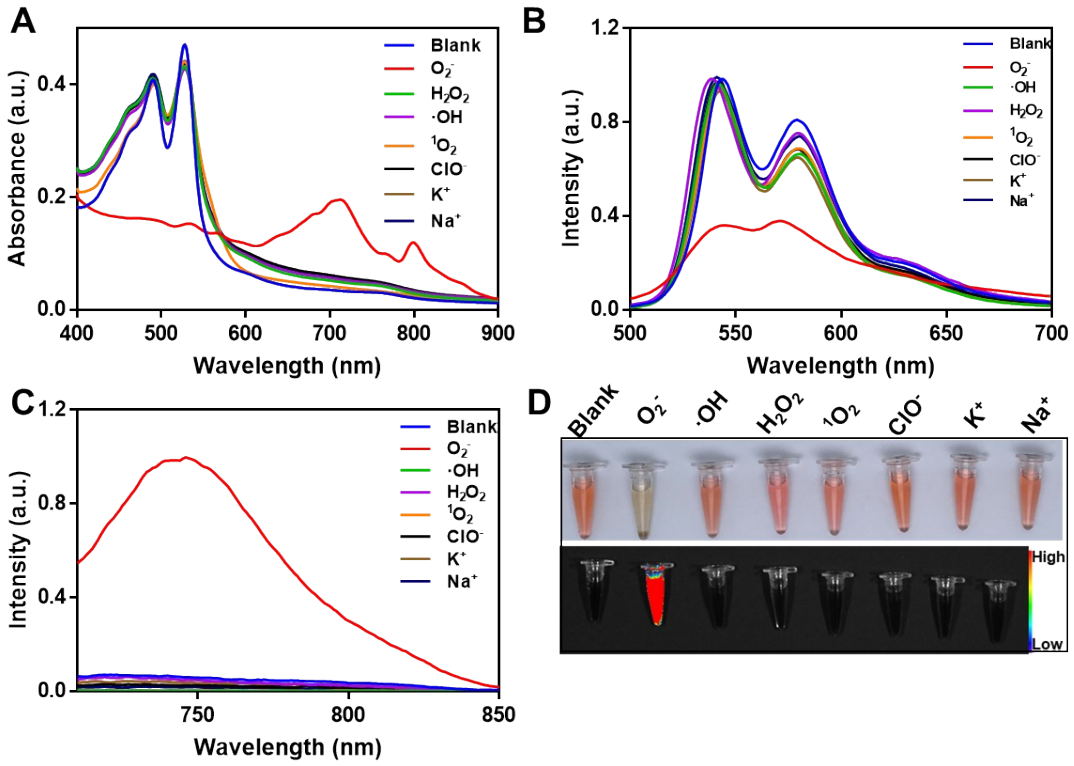

Figure S11. The selectivity of **Per*qdOH*** towards different ROS including O_2^-, ·OH, H_2O_2, $^1O_2$, ClO^- and so on. **A)** UV-vis spectra. Fluorescence spectra with excitation of **B)** 490 nm and **C)** 700 nm. **D)** Images of **Per*qdOH*** within different ROS.

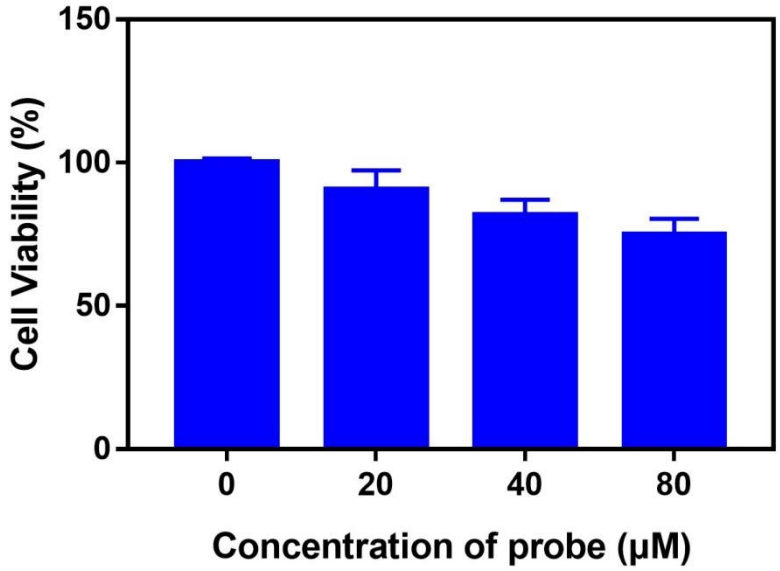

Figure S12. Cell viability under different concentration of **Per*qdOH*.**

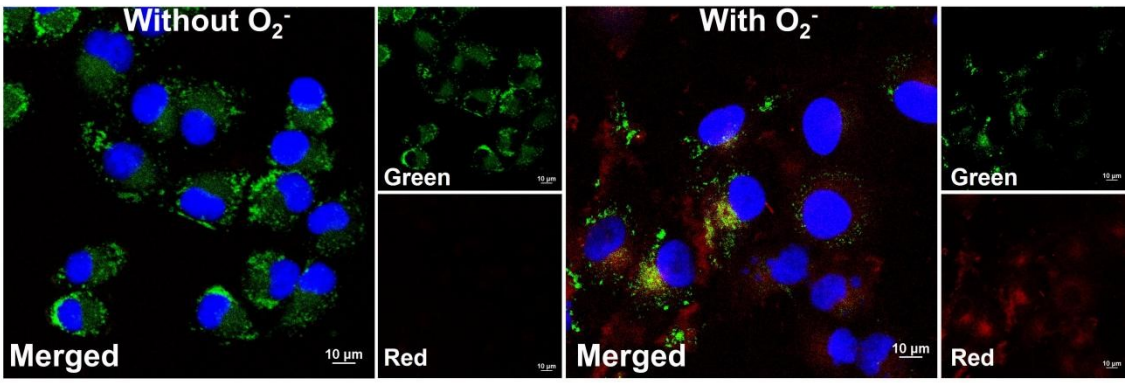

Figure S13. Fluorescence images of cell lines within and without O_2^-.

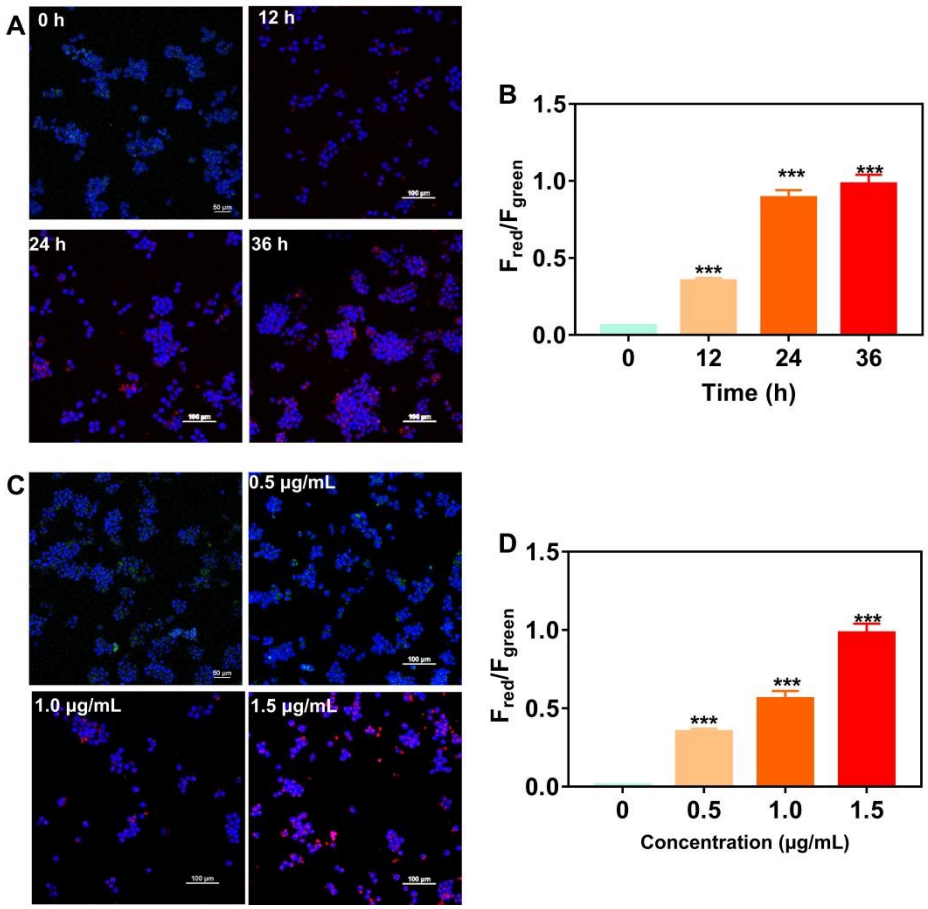

Figure S14. Monitoring endogenous O_2^- in the cells. Fluorescent images of RAW 264.7 cells after co-incubating with PMA in **A)** time-dependent manner (from 0 h to 36 h) and **B)** dose-dependent manner (0-1.5 μg/mL). **C)** and **D)** were the quantitative analysis of the relative fluorescence intensity.

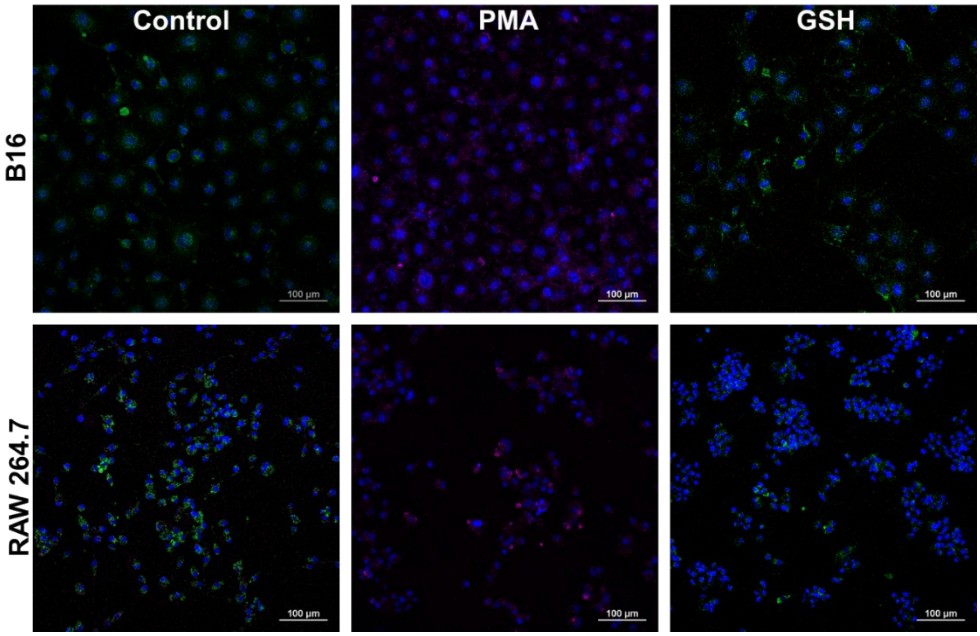

Figure S15. Fluorescence images of B16 and RAW 264.7 cell lines with the addition of PMA after pre-treating with **Per*qdOH***, and the GSH was added 24 hours after the PMA was co-cultured.

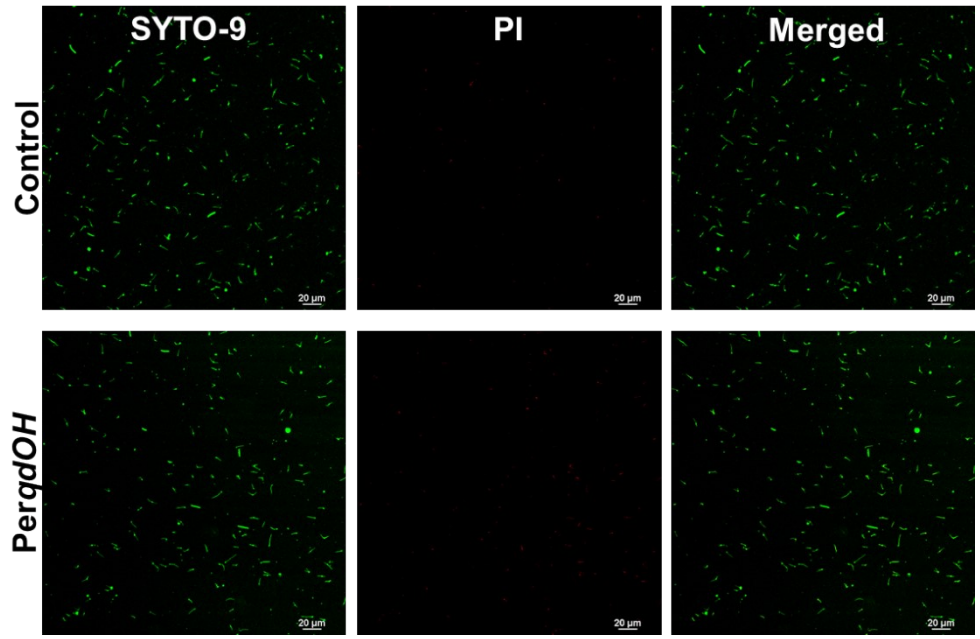

Figure S16. Toxicity evaluation of **Per*qdOH*** **(**40 μM**)** to the *T. pallidum.*