Electronic Supplementary Material (ESI) for RSC Advances.
This journal is © The Royal Society of Chemistry 2019

Supporting Information

SHG-enhanced NIR-excited *in vitro* photodynamic therapy using composite nanoparticles of barium titanate and rose Bengal

Xianhe Sun, [a] Zhang Ji [a] and Sailing He[*a,b]

a. State Key Laboratory of Modern Optical Instrumentations, Centre for Optical and Electromagnetic Research, Zhejiang University, Hangzhou 310058, China.
b. Department of Electromagnetic Engineering, School of Electrical Engineering, Royal Institute of Technology, SE-100 44 Stockholm, Sweden.

Table S1
Concentration of loaded RB corresponding to different concentration of added RB

Concentration of added RB (mg/ml)	**Concentration of loaded RB (μg/ml)**
0.1	0.798±0.00332
0.2	0.949±0.00368
0.5	1.36±0.0269
1	6.23±0.0354
2	6.40±0.305

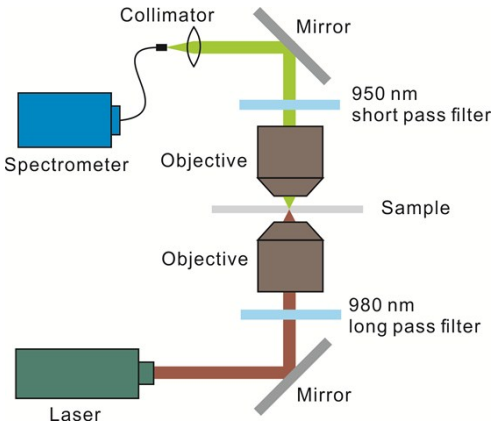

Fig. S1. Schematic illustration of home-built cage system to measure SHG spectrum

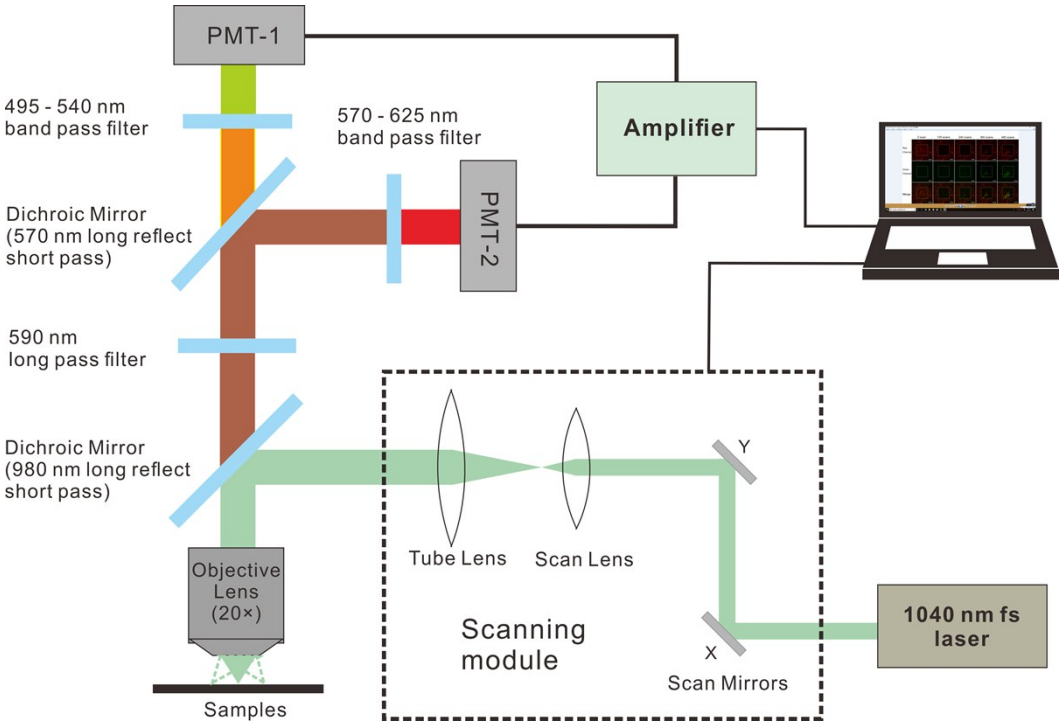

Fig. S2. Schematic illustration of the scanning microscopic imaging system

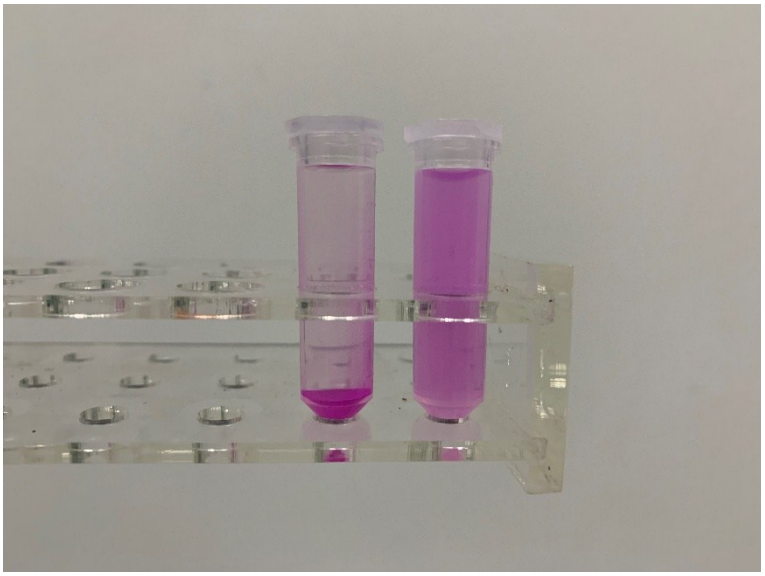

Fig. S3. Photo of BT@PAH/RB (left) and BT@PAH/RB/PAH (right) in DI water for 24h

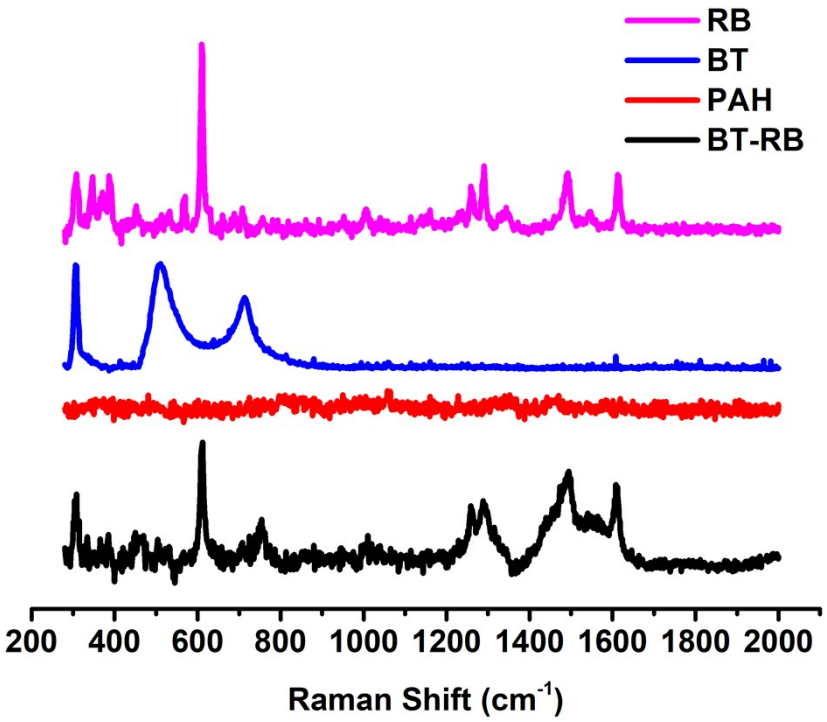

Fig. S4. Raman spectra of RB aqueous solution (pink), BT powder (blue), PAH particles (red) and BT-RB (black).

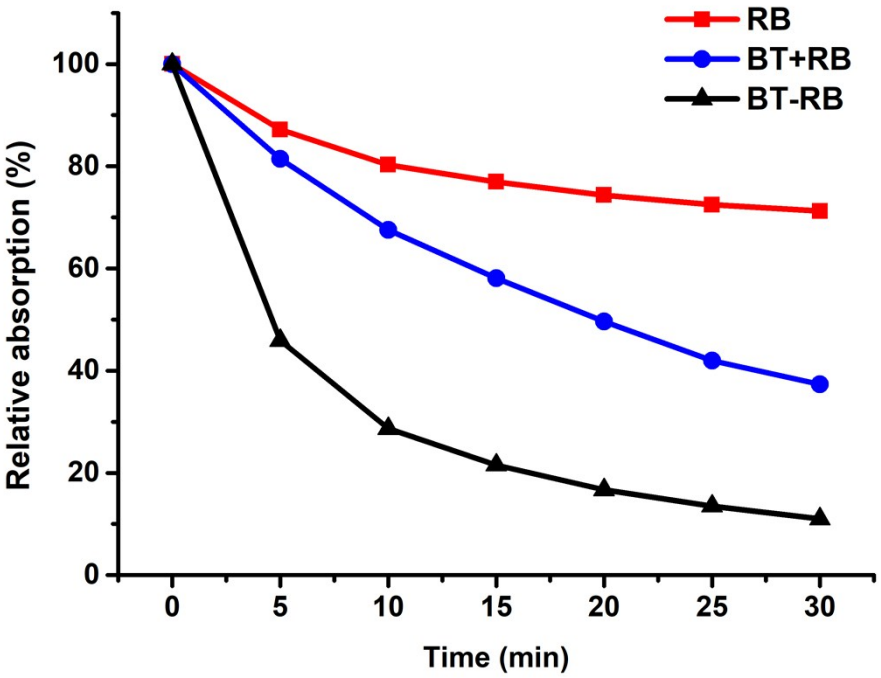

Fig. S5 Relative absorption values of DPBF mixed with RB (red), BT+RB (blue) and BT-RB (black) as the irradiation time of 1040 nm fs laser increases.

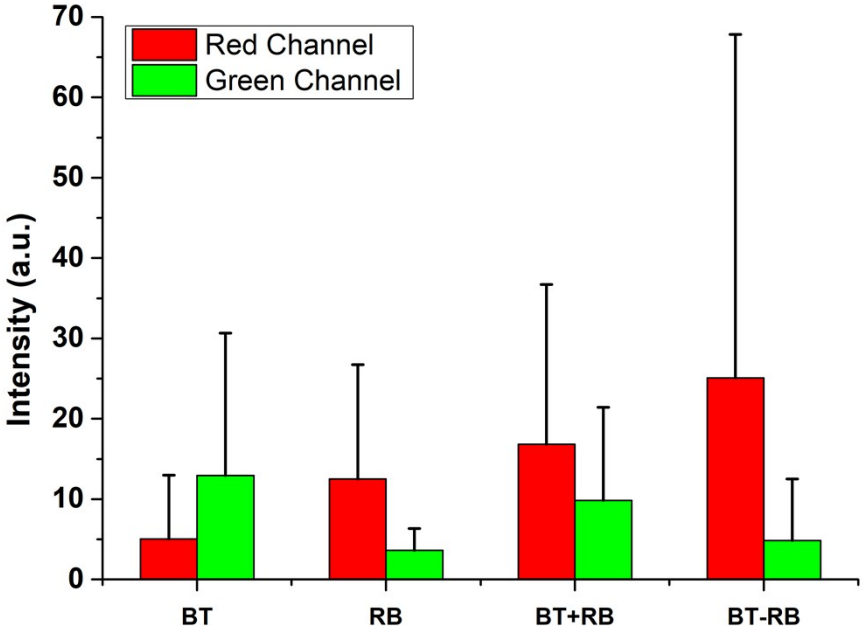

Fig. S6. The statistics of average intensity per pixel in Fig. 3 for red channels and green channels. Error bars indicate SD.

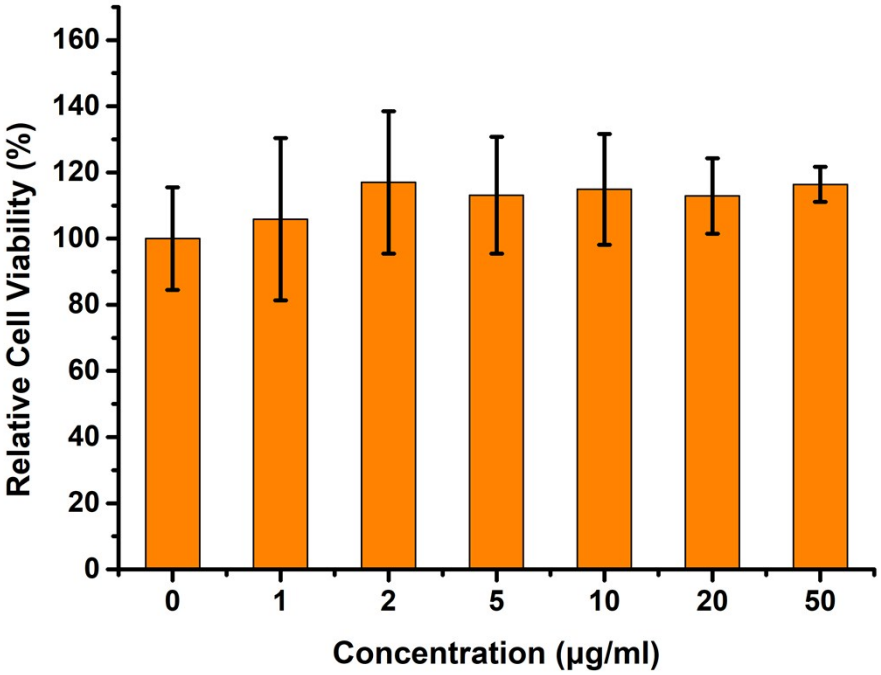

Fig. S7. Viability of Hela cells after incubation with different concentrations of BT-RB nanoparticles. Error bars indicate SD.

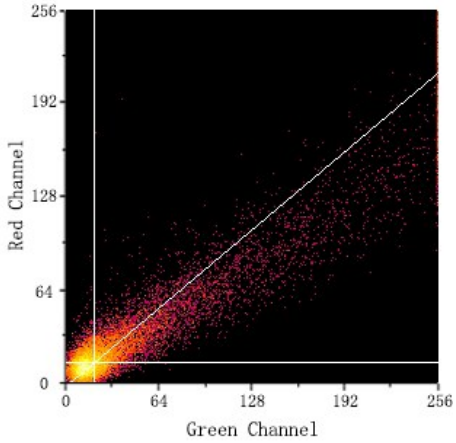

Fig. S8. Scatter plot of the white line squared area in the 480th scans image of BT-RB for red channel and green channel, the Pearson's correlation coefficient was calculated as 0.953.

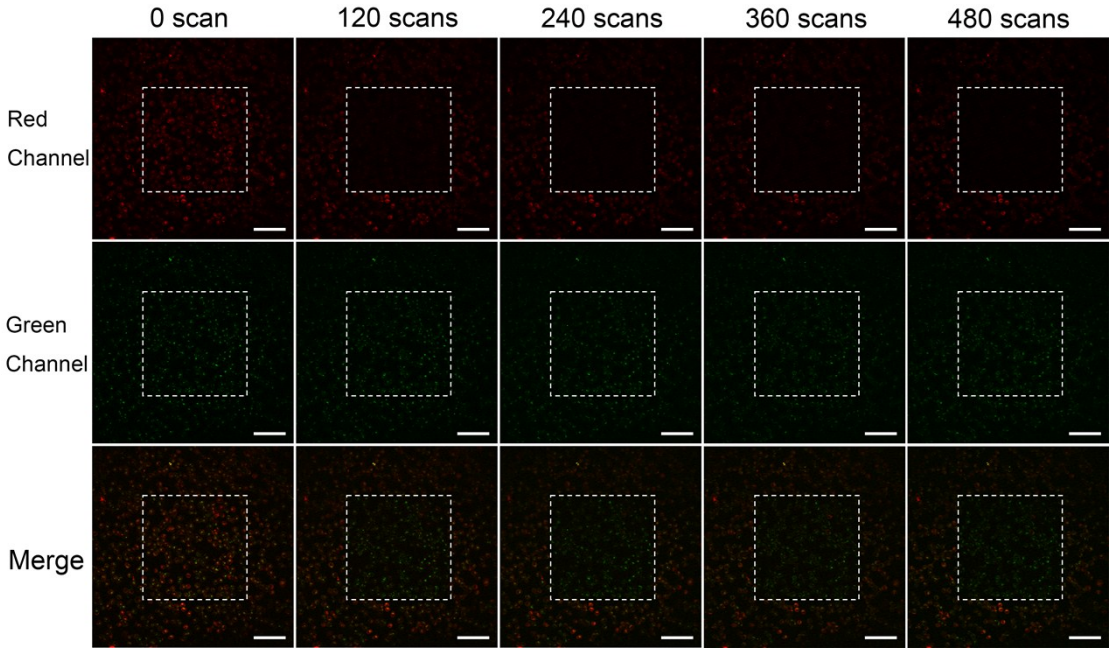

Fig. S9. Evaluation of localized PDT after treated with BT+RB nanoparticles under 1040 nm fs laser irradiation. The white dashed lines square out the scanning areas. Scale bar: 100 μm.

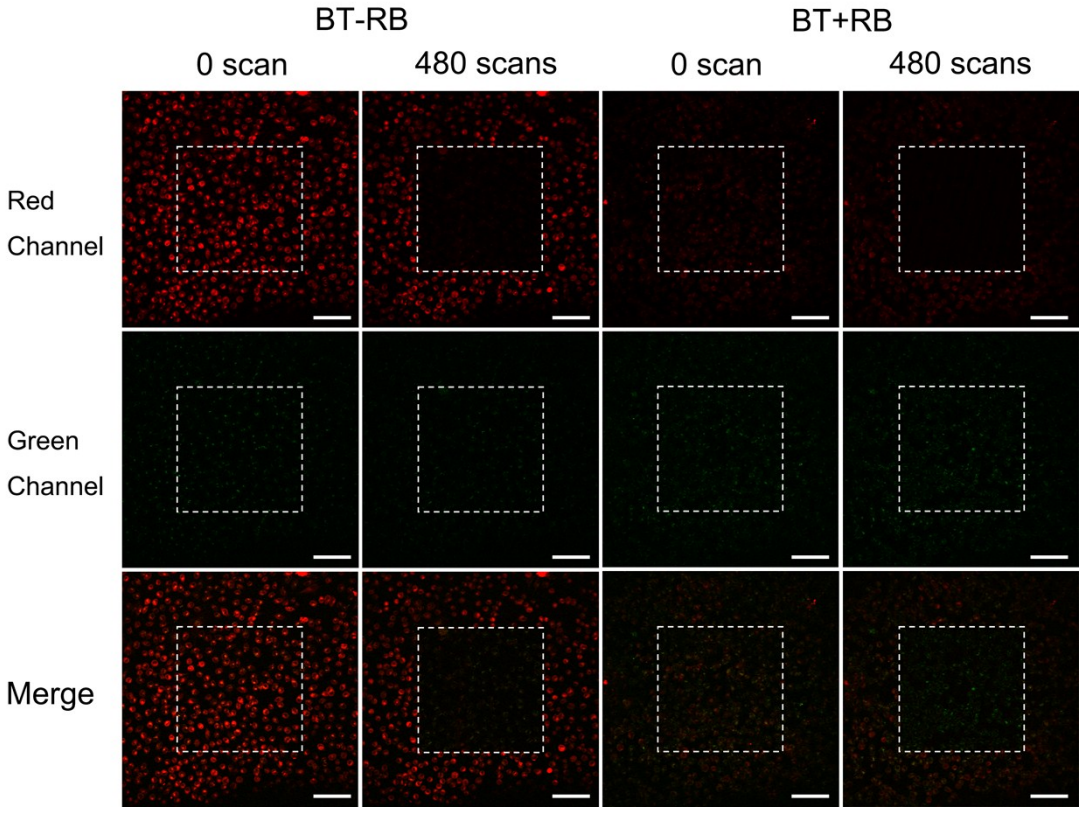

Fig. S10. Cell imaging without treatment of Annexin V/PI before and after 480 scan-cycles of 1040 nm fs laser. The white dashed lines square out the scanning areas. Scale bar: 100 μm.