

Supplementary Tables

Supplementary Table S1. the detailed parameter sets of fluorescence imaging in this study

| Figures | Concentration | Laser (mWcm ⁻²) | Optical Filter | Integration time (ms) |
|------------------------|---------------|--------------------------------|----------------|----------------------------------|
| Figure 3c (1100-LP) | 5 mg/ ml | 25 | 1100 LP | Supplementary Table 2 |
| Figure 3c (1300-LP) | 5 mg/ ml | 50 | 1300 LP | |
| Figure 4a (1100-LP) | 5 mg/ ml | 50 | 1100LP | 1000 |
| Figure 4a (1300-LP) | 5 mg/ ml | 50 | 1300LP | 1000 |
| Figure 4a (1400-LP) | 5 mg/ ml | 50 | 1400LP | 1000 |
| Figure 5b | N/A | N/A | N/A | 1000 |
| Figure 6a | 5 mg/ ml | 50 | | 1000 |
| Figure 7b | 5 mg/ ml | 50 | | 1000 |

Supplementary Table S2. the integration time (ms) used for each fluorescence image of phantom study

| Depth (mm) | IR-TPE Pdots | |
|---------------|--------------|---------|
| | 1100-LP | 1300-LP |
| 1 | 1000 | 1000 |
| 2 | 2000 | 2000 |
| 3 | 3000 | 3000 |
| 4 | 4000 | 4000 |
| 5 | 5000 | 5000 |
| 6 | 6000 | 6000 |