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Supporting information

Low-Power Two-Color Stimulated Emission Depletion Microscopy for Live Cell Imaging

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Supporting information content:

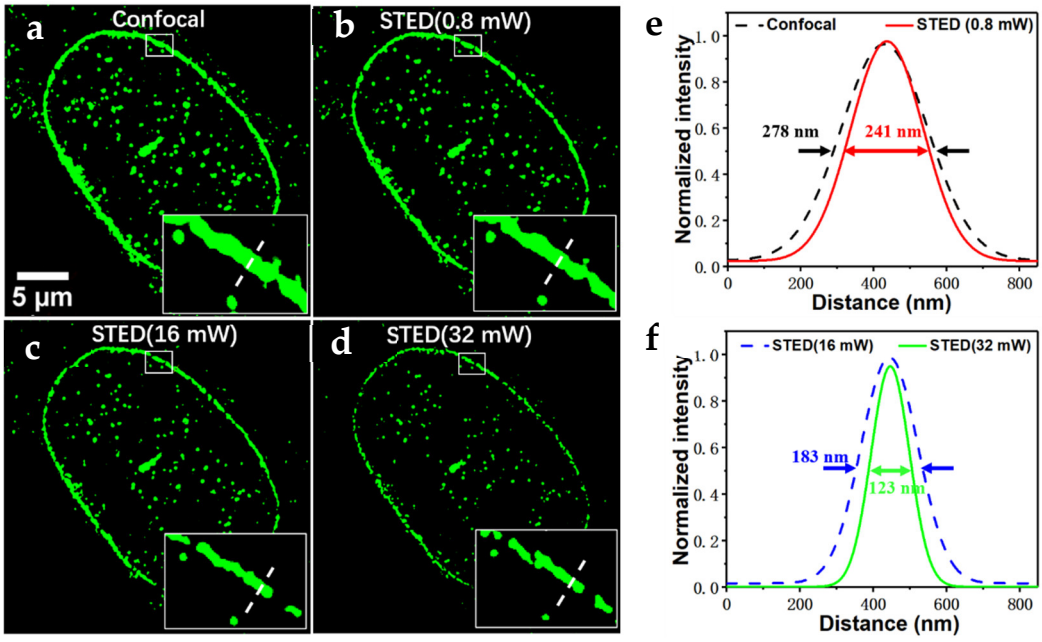

Figure 1. The comparison in resolution between confocal and STED images at different depletion powers of 488 nm channel. (a) Confocal image, (b)-(d) STED images obtained at depletion power of 0.8 mW, 16 mW and 32 mW. (e) Normalized intensity profiles along the white dashed lines in a and b for confocal (black curve) and STED (red curve) images; (f) Normalized intensity profiles

along the white dashed lines in c and d for 16 mW (blue curve) and 32 mW (green curve) images; Zoomed views of the boxed regions in white are shown in the insets. Scale bar: 5 μm.

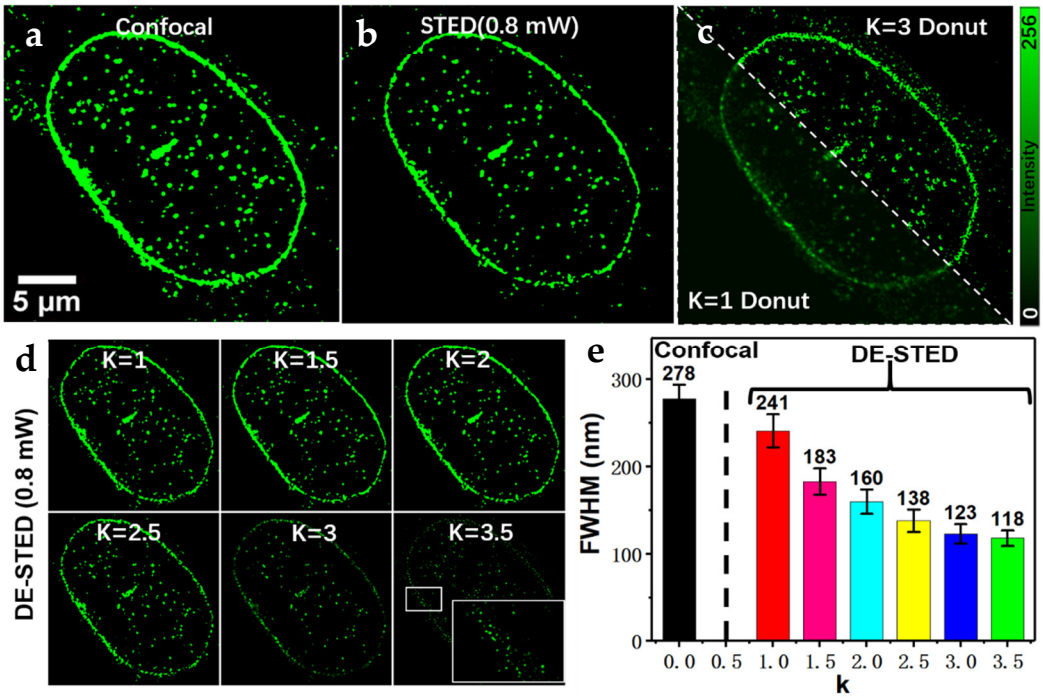

Figure 2. The images of nuclear envelope in a fixed U2OS cell in 488 nm channel. (a) Confocal image, (b) STED image at depletion power of 0.8 mW. (c) Donut image with k value of 1 and 3. (d) DE-STED images with the increase of k value. (e) Dependence of average FWHM of nuclear envelope on the k value. Scale bar: 5 μm.

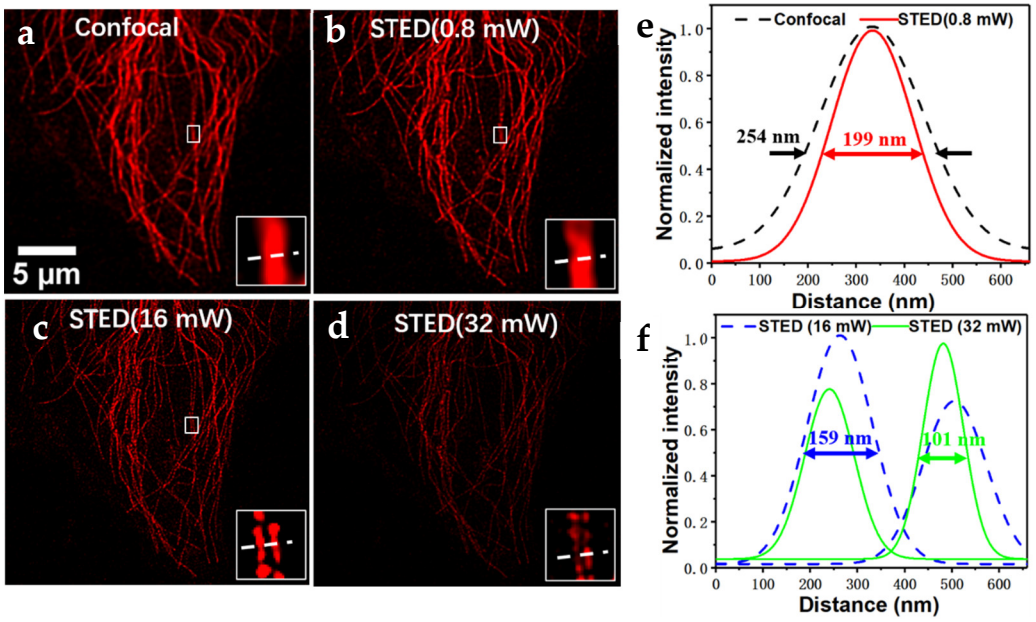

Figure 3. The comparison in resolution between confocal and STED images at different depletion powers in 635 nm channel. (a) Confocal image, (b)-(d) STED images obtained at depletion power of 0.8 mW, 16 mW and 32 mW. (e) Normalized intensity profiles along the white dashed lines in a and b for confocal (black curve) and STED (red curve) image; (f) Normalized intensity profiles along the white dashed lines in c and d for 16 mW (blue curve) and 32 mW (green curve) image; Zoomed views of the boxed regions in white are shown in the insets. Scale bar: 5 μm.

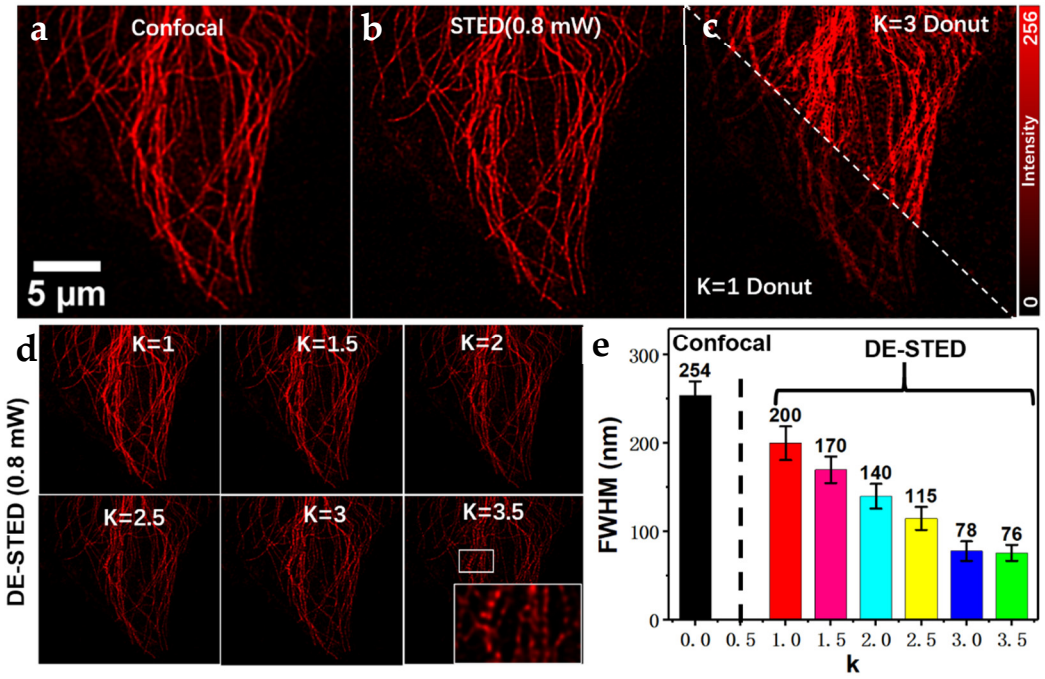

Figure 4. The imaging of tubulin in a fixed U2OS cell in 635 nm channel. (a) Confocal image, (b) STED image at depletion power of 0.8 mW. (c) Donut image with k value of 1 and 3. (d) DE-STED images with the increase of k value. (e) Dependence of average FWHM of tubulin on the k value. Scale bar: 5 μm.

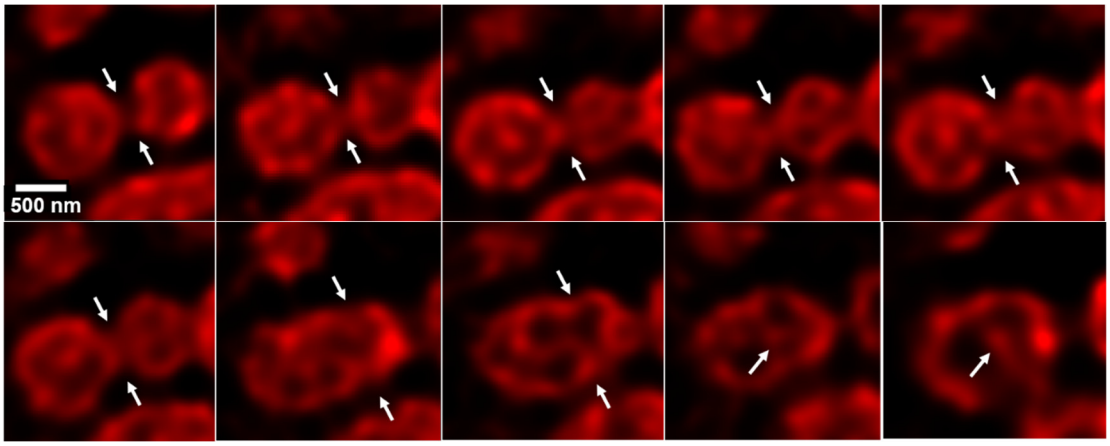

Figure S5. Long-term dynamic imaging of U2OS cell mitochondria in STED mode，the white arrow indicates a typical mitochondrial fusion process, one frame every 3 minutes. Scale bar: 500 nm.

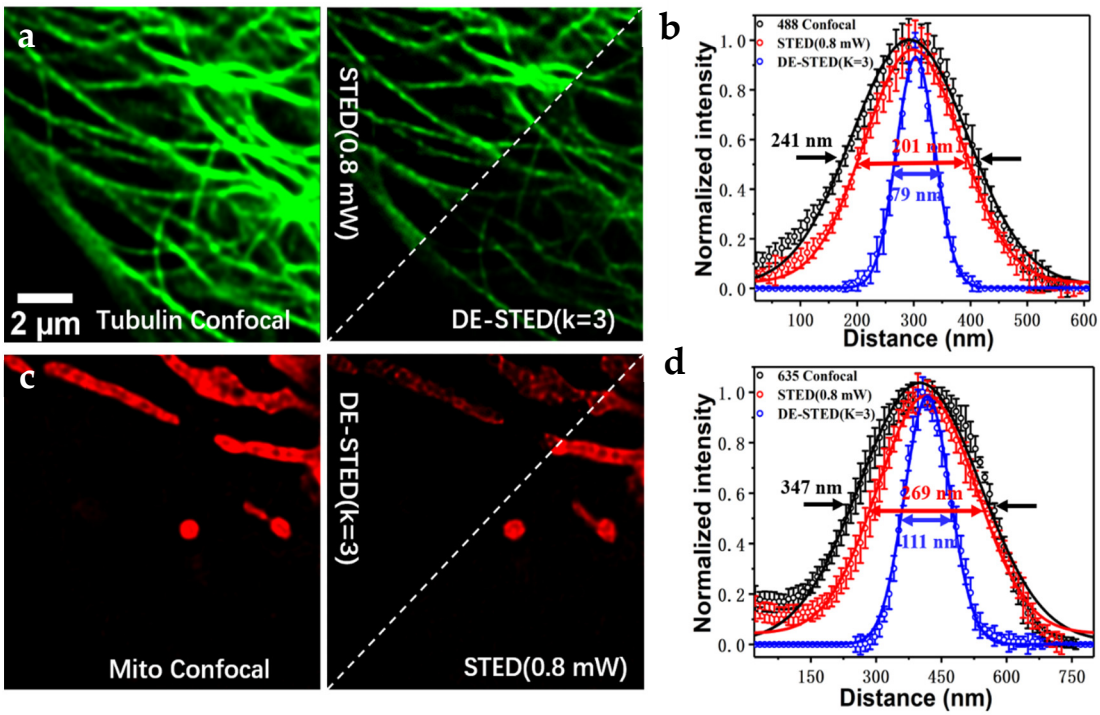

Figure 6. The comparison in resolution between confocal, STED, and DE-STED images of living U2OS cell. (a) Confocal, STED, and DE-STED(k=3) images of tubulin; (b)Mean cross section of tubulin in (a); (c) Confocal, STED, and DE-STED(k=3) images of mitochondrial; (d)Mean cross section of mitochondrial in (c). Scale bar: 2 μm.