Application of Rapid Fluorescence Lifetime Imaging Microscopy (RapidFLIM) to examine dynamics of nanoparticle uptake in live cells

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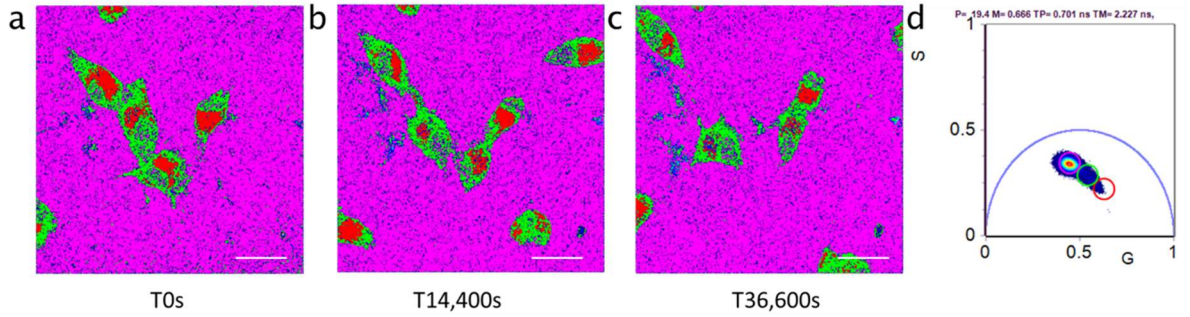
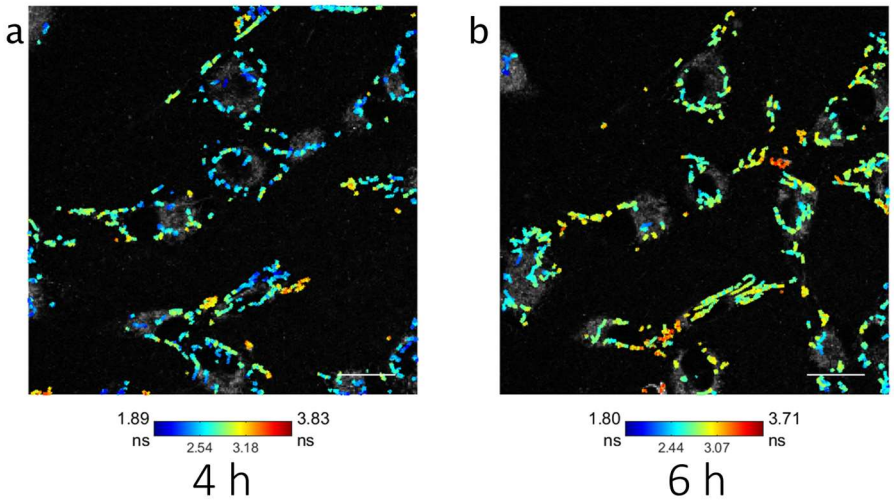
Supplementary Material



Supplementary Figure S1 Time-lapse imaging of 100 nm silica nanoparticles (SiNP) uptake in U87 glioblastoma cells captured over 10 h (36,600 s) following SiNP addition. Representative phasor overlay for 100 nm SiNP at **(a)** time 0, **(b)** 4 h and **(c)** 10 h following SiNP addition, with **(d)** associated phasor plot and color coding (pink, long lifetime; green, intermediate lifetime; red, short lifetime). Representative of $n = 2$. Scale bar, 25 µm.



Supplementary Figure S2 Localization of nanoparticle trajectories where the lifetime range was greater than the mean Δ lifetime (x = 0.39 ns), measured using PicoQuant RapidFLIM. Trajectories at **(a)** 4 h and **(b)** 6 h post nanoparticle addition were overlayed on the original image. Scale bar in all panels, 25 µm.

Supplementary Video S1 Frame by frame video of nanoparticle uptake 24 h post addition with trajectories only below the mean Δ lifetime (x = 0.39 ns), measured using PicoQuant RapidFLIM. This video can be accessed via FigShare:

Ahmed-Cox (2022) RapidFLIM Supplementary Figure S1. Available online: https://doi.org/10.6084/m9.figshare.18094148.v1 (accessed on 12/02/2022).