Photonic Science

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ISIS3 CAMERA

FLIM imaging.

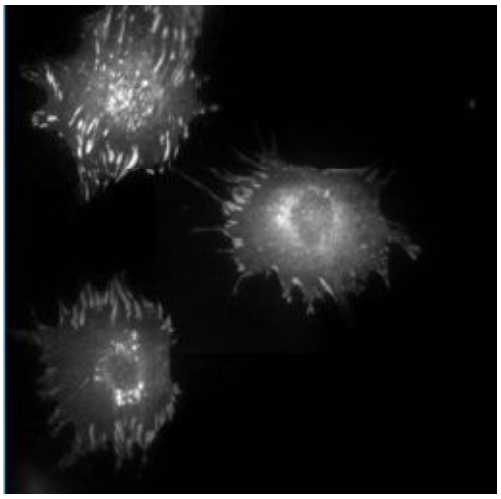
Fluorescence lifetime imaging in frequency domain allows two dimensional imaging of fluorescence lifetimes on live cells stained with specific dyes.

As the amount of light collected using this method is very faint as we are using very short gating time periods: few nanoseconds, with high repetition rates / modulation to record live fluorescence emissions from the cells.

Cameras with near single photon counting sensitivity are used for this type of experiment. They provide an instant picture of the fluorescence decay emitted by a molecule / protein after excitation with a short laser pulse.

This technique allows the discrimination of specific interactions with different lifetimes even though the emission wavelengths from those species are similar.

Quantification of fluorescence emissions will yield to accurate screening inside cells where intensity fluorescence background does not normally allow easy discrimination.



Fluorescence lifetime