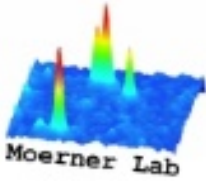
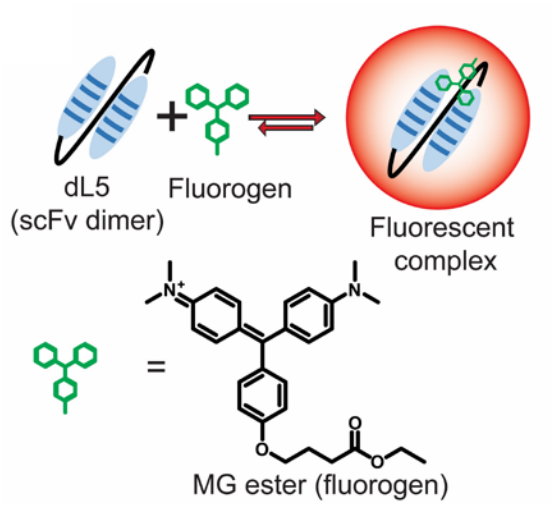
Super-resolution imaging of live bacteria cells using a genetically-directed, highly photostable fluoromodule

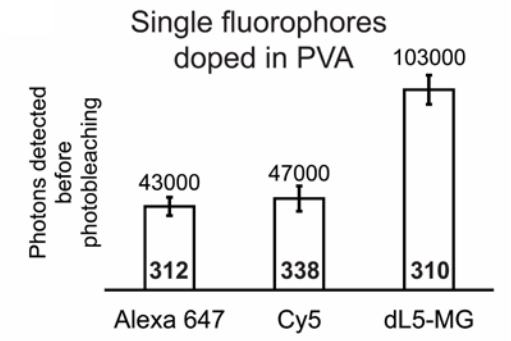


We report a method to label proteins in *Caulobacter crescentus* using a photostable fluoromodule that enables **long time scale** tracking and **STED imaging** of these proteins in live cells

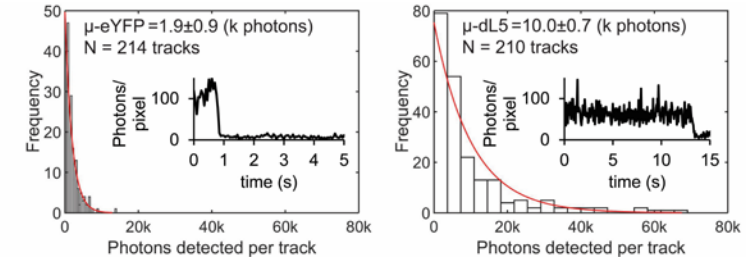


The labeling relies on non-covalent binding between a genetically encoded scFv, dL5, and a cell permeable fluorogen, Malachite Green ester.

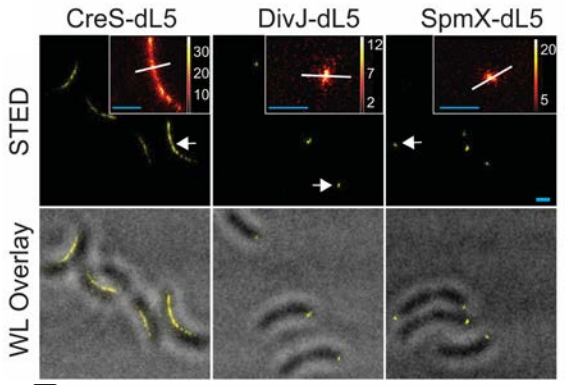
The fluoromodule has a **high binding affinity** (K_d=6pM) and a **slow off rate**

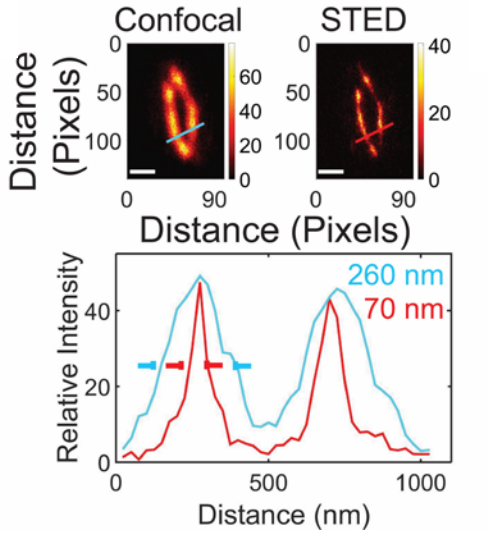


dL5-MG emits **2x** more photons on average than Cy5 and Alexa647 *in vitro*



dL5-MG emits **5x** more photons than eYFP in cells





We obtained **~70 nm** FWHM resolution using dL5-MG in our pulsed STED microscope