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Poster Sessions

Development of turn-on fluorescent tag system for live-cell imaging

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Fluorescence labeling of proteins is a key technique in live-cell imaging. We have developed a turn-on fluorescence labeling technique named DeQODE (De-Quenching of organic dye emission) tag technology. In this technology, a specially designed quenched fluorescent probe called QODE (Quenched organic dye emission) probe is used. The QODE probe consists of a fluorescent moiety and a quenching moiety. The DeQODE tag is the single chain antibody (scFv) that binds the quenching moiety to turn on fluorescence emission of the QODE probe. We here report a new QODE probe employing arylazopyrazoles moiety (AAP) as a quencher, and silicon rhodamine as a fluorophore. To produce the DeQODE tag for the new QODE probe, we obtained scFv clones against AAP. Two clones were found to express in a mammalian cell line 293T. The cells expressing these clones showed strong fluorescence in the presence of the QODE probe. Washing out of the free QODE probe was unnecessary for high-contrast imaging. This property is advantageous for application for in vivo imaging and high content drug screening.