

A pH Stable Turn-on Fluorescent Sensor for Imaging Labile Fe³⁺ in Living Cells

Department of Chemistry and Biochemistry, University of Massachusetts,

Bayan Alhawsah, ZiyaAydin, BingYang, MaolinGuo

Fluorescent sensors has received considerable interest in recent years because of its ability to provide visualized monitoring of very low concentrations together with the advantages of spatial and temporal resolution. Over the past two decades, several fluorescent sensors for iron (III) have been reported. However, the currently known fluorescent sensors that are capable of cellular iron imaging are largely limited to “turn-off” type, providing useful information but suffering from poor sensitivity, or interference from other metal ions. We have been developing rhodamine based turn-on fluorescent sensors. Here we report a new iron (III) sensor , Rh-PK, which is stable in low pH's and is capable of detecting basal level Fe⁺³ in the human live cells at subcellular resolution.

We thank the National Science Foundation for funding this project.