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Two Ratiometric Fluorescent Probes for Hypochlorous Acid Detection and Imaging in Living Cells

Xiang Han,^a Chang Tian,^b Jingjing Jiang,^a Mao-Sen Yuan,^a Shu-Wei Chen,^a Juan Xu,^a Tianbao Li^a and

Jinyi Wang^{*ab}

^a College of Chemistry & Pharmacy, Northwest A&F University, Yangling, Shaanxi 712100, P. R. China

^b College of Veterinary Medicine, Northwest A&F University, Yangling, Shaanxi 712100, P. R. China

* Corresponding author. Tel.: +86 29 87082520; fax: +86 29 87082520.

E-mail address: jywang@nwsuaf.edu.cn (J. Wang).

ABSTRACT. Hypochlorous acid plays a very important role in living cells, because it can resist microorganism attack and has a lethal effect on pathogens. The unnormal generation of ClO^- can cause tissue damage and corresponding diseases. Detection of ClO^- is very necessary in biological systems. In this article, we respectively hybridized the two different water-soluble coumarin (7-hydroxycoumarin and 7-diethylaminocoumarin) fluorophores with a longer-wavelength emissive rhodamine fluorophore to construct an intergrant, and then isothiocyanate was modified with the intergrant to recognized ClO^- . The two ratiometric fluorescent probes **RHCIO-1** and **RHCIO-2** were developed for ClO^- detecting with high selectivity and sensitivity. Especially, the probe **RHCIO-2** has lower detection limit (42 nM) for ClO^- in 5 seconds. What's more, the probe **RHCIO-2** was successfully used in monitoring endogenous ClO^- in living cells.

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