Electronic Supplementary Material (ESI) for Dalton Transactions


**Supplementary information**

# Zinc Sensors with Lower Binding Affinities for Cellular Imaging

Jin Hoon Kim,[a] In Hong Hwang,[a] Seung Pyo Jang,[a,b] Juhye Kang,[a] Sumi Kim,[c] Insup Noh,[c] Youngmee Kim,[d] Cheal Kim,[a]* Roger G. Harrison[b]*

[a]*Department of Fine Chemistry, Seoul National University of Science & Technology, Seoul 139-743, Korea. Email: chealkim@seoultech.ac.kr.*
[b]*Department of Chemistry and Biochemistry, Brigham Young University, Provo, Utah, USA. Email: roger_harrison@byu.edu*
[c]*Department of Chemical Engineering, Seoul National University of Science & Technology, Seoul 139-743, Korea.*
[d]*Department of Chemistry and Nano Science, Ewha Womans University, Seoul 120-750, Korea.*

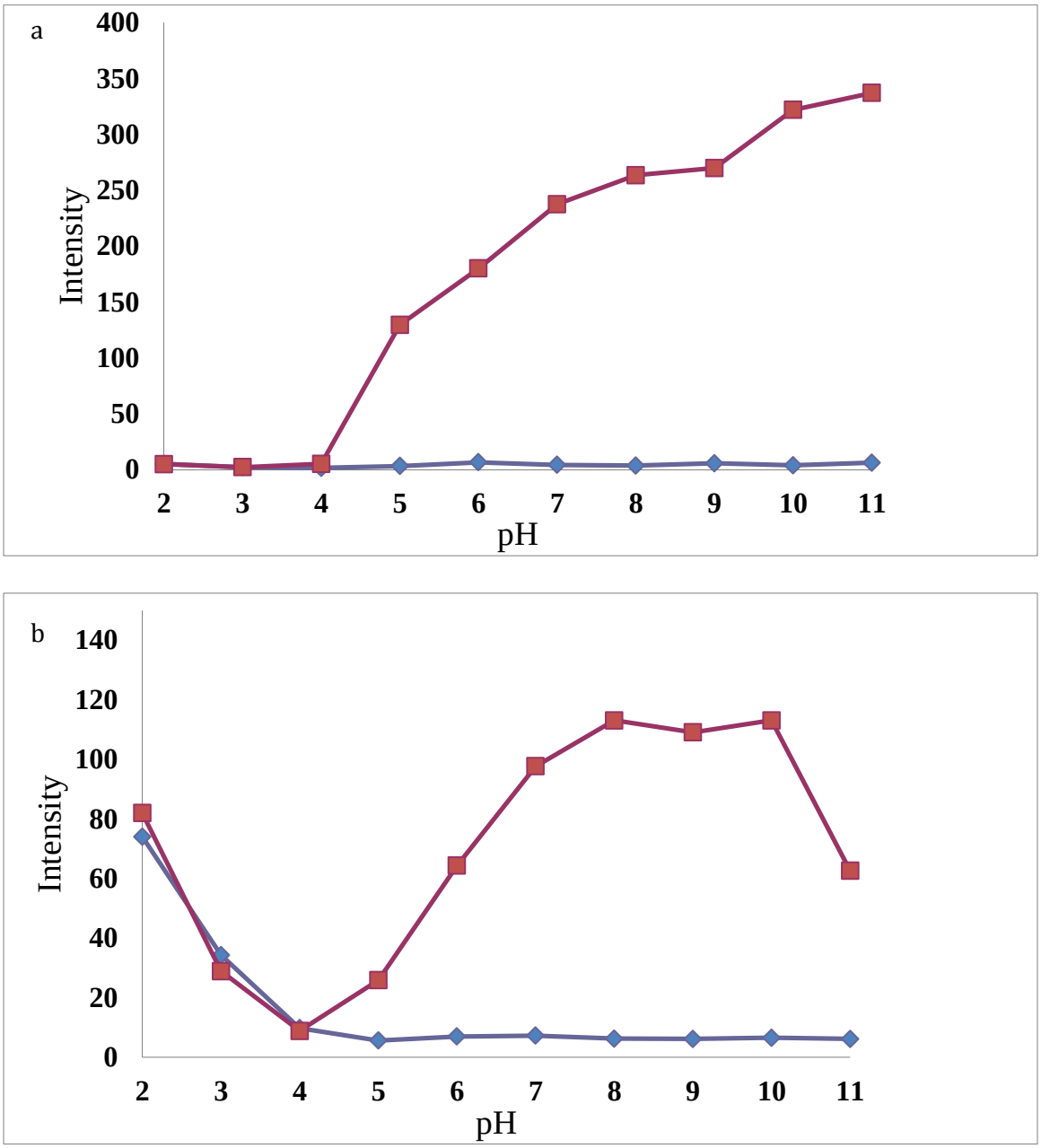


Figure SI1. Emission intensity as a function of pH. a) **2,3-QA** without $Zn^{2+}$ (bottom) and with $Zn^{2+}$ (top). Excited at 350 nm. b) **2,3-QP** without $Zn^{2+}$ (bottom) and with $Zn^{2+}$ (top). Excited at 312 nm.

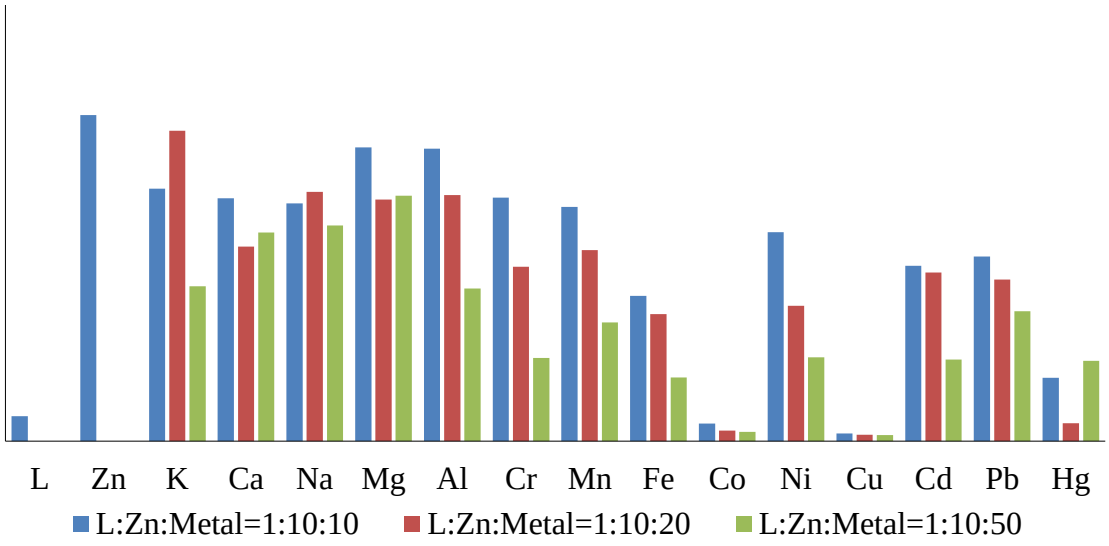


Figure SI2. Fluorescence change of the **2,3-QP**-$Zn^{2+}$ complex with other metal ions. Aqueous solutions of 5 μM **2,3-QA** and 50 μM $Zn^{2+}$ had metal ions added to them and excited at 312 nm. Their emission at 520 nm was monitored.

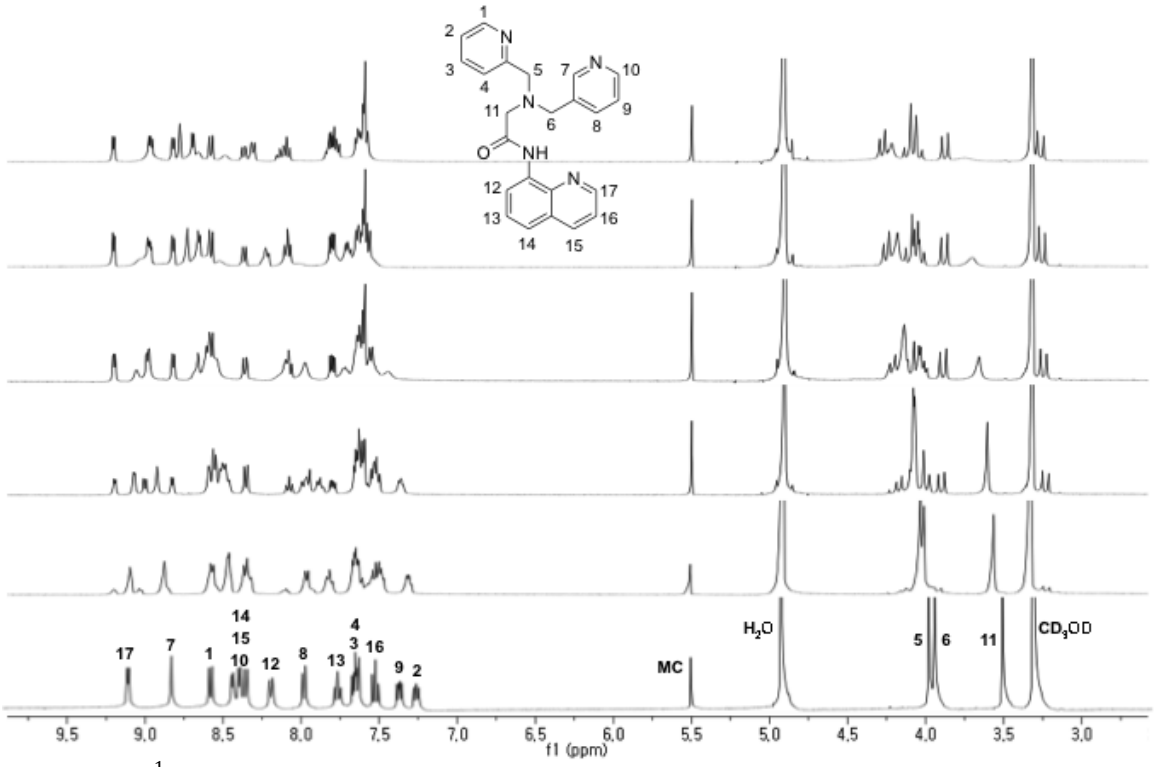


Figure SI3. $^{1}$H NMR spectra of **2,3-QA** with different amounts of $Zn(NO_3)_2$ in $CD_3OD$. Equivalents of $Zn^{2+}$ going from the bottom spectra to the top: 0, 0.2, 0.4, 0.6, 0.8, 1.0.

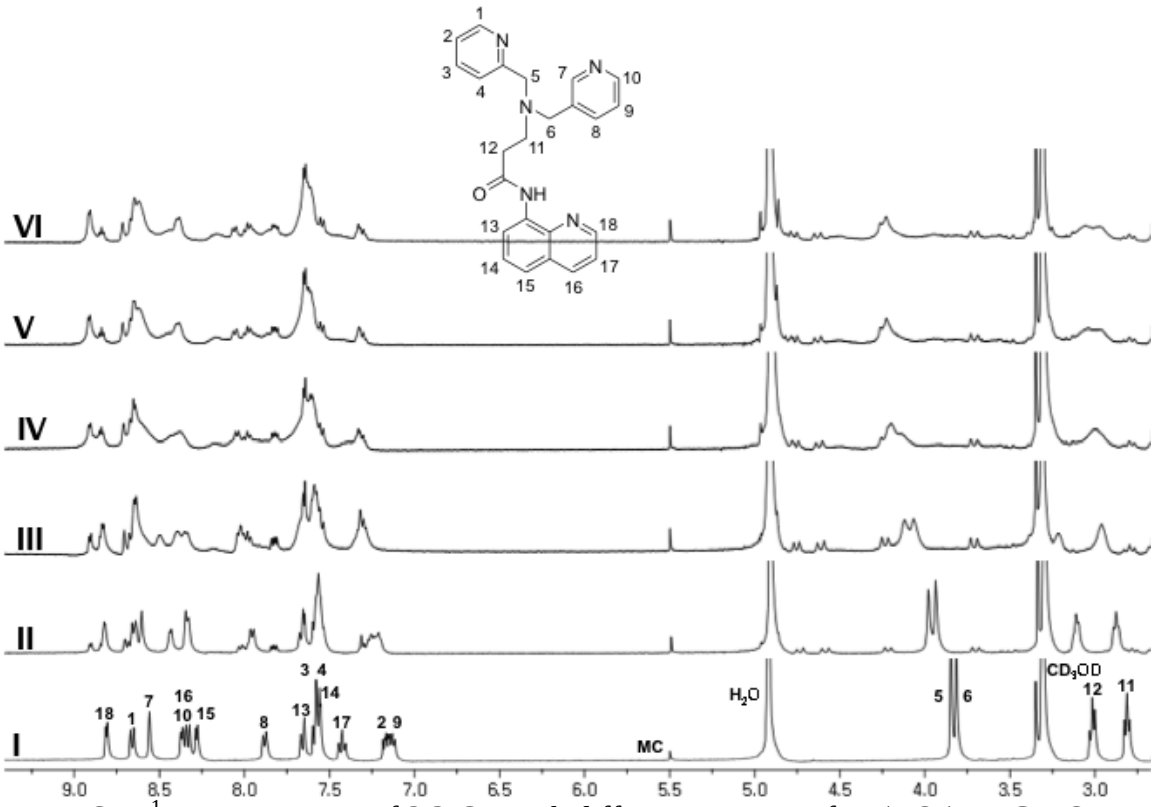


Figure SI4. $^{1}$H NMR spectra of **2,3-QP** with different amounts of $Zn(NO_3)_2$ in $CD_3OD$. Equivalents of $Zn^{2+}$: (I) 0, (II) 0.2, (III) 0.4, (IV) 0.6, (V) 0.8, (VI) 1.0.

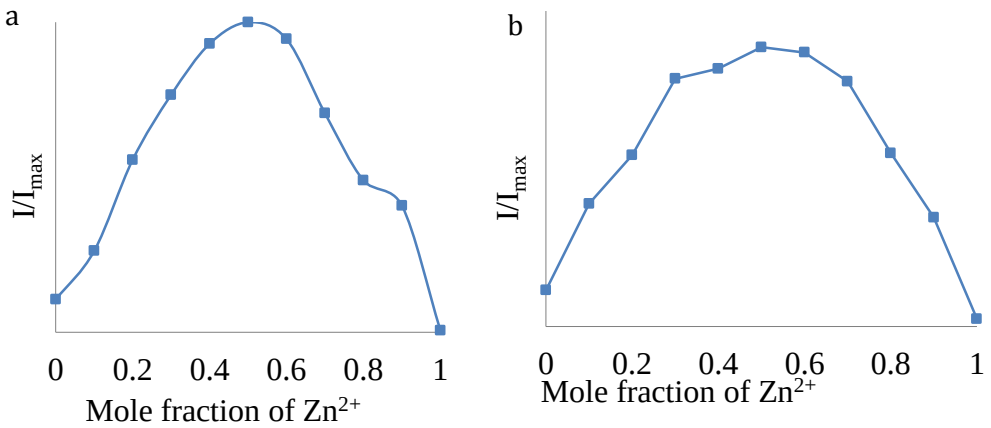


Figure SI5. Fluorescence intensity plotted as a function of $Zn^{2+}$. a) **2,3-QA** and b) **2,3-QP**.

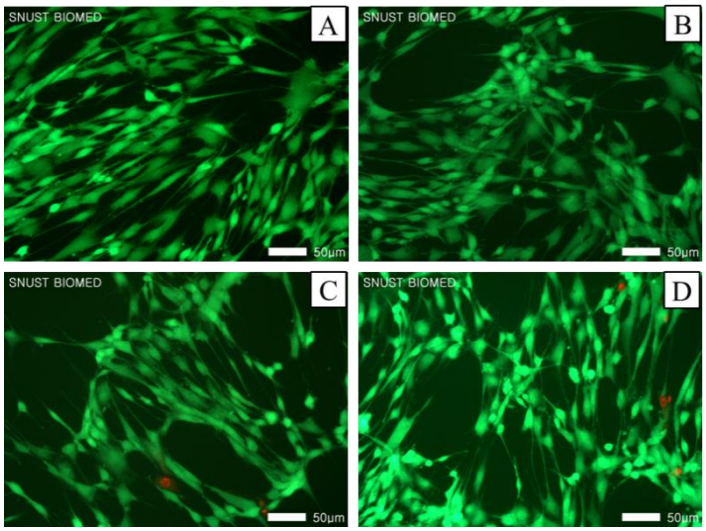


Figure SI6**.** Live/dead assay of fibroblasts. Control cells (A) and the cells after their *in vitro* exposures to **2,3-QA** molecules at the concentrations of either 1 (B), 10 (C) or 100 μM (D) for 30 min. The scale bars are 50 μm. Red dots are dead cells.

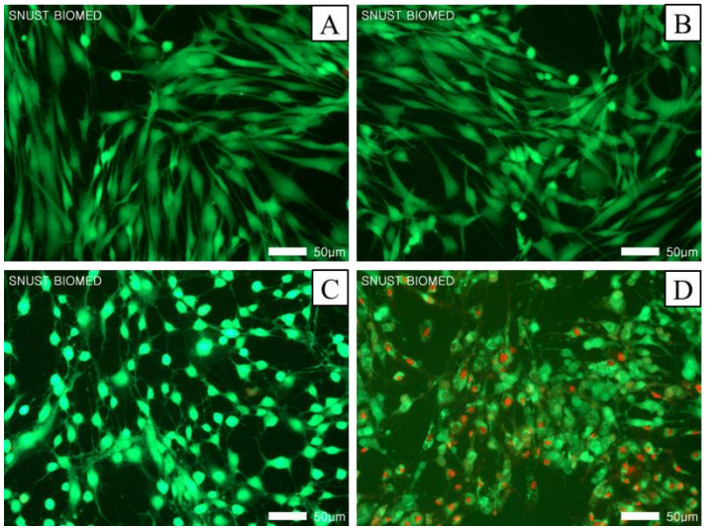


Figure SI7. Live/dead assay of fibroblasts. Control cells (A) and the cells after their *in vitro* exposures to the $Zn(NO_3)_2$ molecules at the concentrations of either 1 (B): 10 (C): or 100. μM (D) for 4 hrs. Scale bars are 50 μm. Red dots are dead cells.