

Accepted Manuscript

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PII: S1386-1425(18)30521-3
DOI: doi:[10.1016/j.saa.2018.05.121](https://doi.org/10.1016/j.saa.2018.05.121)
Reference: SAA 16155

To appear in: *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*

Received date: 2 April 2018
Revised date: 27 May 2018
Accepted date: 29 May 2018

Please cite this article as: Hui Wang, Bin Fang, Lufei Xiao, Di Li, Le Zhou, Lin Kong, Yan Yu, Xiangzi Li, Yunjun Wu, Zhangjun Hu , A water-soluble “turn-on” fluorescent probe for specifically imaging mitochondria viscosity in living cells. Saa (2017), doi:[10.1016/j.saa.2018.05.121](https://doi.org/10.1016/j.saa.2018.05.121)

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A water-soluble “turn-on” fluorescent probe for specifically imaging mitochondria viscosity in living cells

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Abstract

Rational design of water-soluble probes for mitochondrial viscosity in practical biological applications remains a challenge. Herein, we described a novel hydro soluble benzothiazole salt derivative **MitoSN**, which exhibits specifically response and singular sensitivity to the mitochondria viscosity in living Hela cells. **MitoSN** displays an excellent fluorescence enhancement (ca. 35-fold) with the increase of the viscosity in the water-glycerol system. Moreover, confocal microscopy indicates that **MitoSN** is sensitive to the local viscosity and selectively stains mitochondria, the body of zebrafish as well. Importantly, **MitoSN** is capable to identify the viscosity difference of mitochondria in normal and nystatin treated Hela cells. The work

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