

HOMOALLYLAMINES AS FORMALDEHYDE-RESPONSIVE TRIGGERS WITH IMAGING APPLICATIONS

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PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,730,892	08/04/2020	2016-024

BRIEF DESCRIPTION

The invention concerns the use of homoallylamines which undergo a 2-aza-Cope reaction upon condensation with formaldehyde (FA) which can be coupled to a fluorogenic, colorimetric, or bioluminescent response. Traditional methods for biological FA detection rely on sample destruction and/or extensive processing, resulting in a loss of spatiotemporal information. The invention, as showcased by the tw'! chemical probes FAP-1 and FP-1, enables detection of biological FA with high selectivity in aqueous buffer and in living samples in a non-invasive manner. The homoallylamine trigger can be generalized to cage a large variety of different fluorophores, chromophores, and bioluminescent molecules (e.g. luciferin).

SUGGESTED USES

Measuring FA in aqueous buffer (e.g. as a proxy for demethylase enzyme activity, potentially in a high-throughput screen format), for fluorescent imaging of FA in cell culture, and for bioluminescent imaging of FA in live animals.

ADVANTAGES

RELATED MATERIALS

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

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- [Targeted Ionophore-Based Metal Supplementation](#)
- [Diagnostic Colorimetric Assay](#)
- [Fluorescent Probe for Selective Imaging of Carbon Monoxide in Living Cells Using Palladium-Mediated Carbonylation](#)

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OTHER INFORMATION

KEYWORDS

Fluorescence, sensor, probe,
formaldehyde, demethylase enzyme

CATEGORIZED AS

- » [Imaging](#)
- » [Medical](#)
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