HOMOALLYLAMINES AS FORMALDEHYDE-RESPONSIVE TRIGGERS WITH IMAGING APPLICATIONS

Tech ID: 25312 / UC Case 2016-024-0

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 ftuorogenic, colorimetric, or biolurninescent 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 hornoallylamine trigger can be generalized to cage a large variety of different fluorophores, chromophores, and bioluminescent molecules (e.g. tuciferin).

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

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INVENTORS

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OTHER INFORMATION

KEYWORDS

Fluorescence, sensor, probe, formaldehyde, demethylase enzyme

CATEGORIZED AS

» **Imaging**

» Medical

» Molecular

RELATED CASES

2016-024-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Thiophosphorodichloridate Reagents For Chemoselective Histidine Bioconjugation
- Puromycin Activity-Based Sensing Probes For Molecular Imaging And Histochemistry
- Activity-Based Ratiometric FRET Probe Detects the Changes in Labile Copper Pools
- Diagnostic Colorimetric Assay
- Urea-Oxaziridine Library Synthesis And Applications
- Tandem Activity-Based Sensing and Labeling Strategy for Reactive Oxygen Species Imaging
- Fluorescent Probe for Selective Imaging of Carbon Monoxide in Living Cells Using Palladium-Mediated Carbonylation

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