

Product Data Sheet

Product Name: HMBR
Cat. No.: GC66439

Chemical Properties

Cas. No. 1287651-36-8

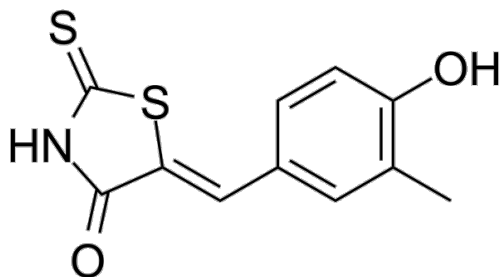
Formula $C_{11}H_9NO_2S_2$ M.Wt 251.32

Solubility DMSO : 125 mg/mL (497.37 mM; ultrasonic and warming and heat to 80°C) Storage 4°C, protect from light

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Protocol

Use of HMBR for live-cell imaging^[1]:

(1) HeLa cells expressing nuclear H2B-FAST were washed with PBS and then treated with DMEM medium (without serum and phenol red) containing 5µM HMBR.

(2) Cells were imaged directly without washing.

Caution: Product has not been fully validated for medical applications. For research use only.

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(3) Imaging was performed using a Zeiss LSM 710 laser scanning confocal microscope equipped with a Plan Apochromat 63×/1.4 NA oil immersion objective.

(4) FAST:HMBR was imaged using the green channel with excitation at 488nm and emission detection from 493 to 575nm.

Reference:

[1] Li C, Plamont M A, Sladitschek H L, et al. Dynamic multicolor protein labeling in living cells[J]. Chemical Science, 2017, 8(8): 5598-5605.

Background

HMBR is a non-fluorescent, cell-permeable fluorogenic dye that binds to the Yellow Fluorescence-Activating and Absorption-Shifting Tag (Y-FAST) and emits yellow fluorescence upon blue light excitation, with Ex/Em of 491/525-539nm^[1,2]. HMBR exhibits low cytotoxicity and is commonly used as a fluorescent reporter for detecting and imaging protein expression in living cells, such as in zebrafish embryos^[3,4,5].

Reference:

[1] Plamont M A, Billon-Denis E, Maurin S, et al. Small fluorescence-activating and absorption-shifting tag for tunable protein imaging in vivo[J]. Proceedings of the National Academy of Sciences, 2016, 113(3): 497-502.

[2] Pimenta F M, Chiappetta G, Le Saux T, et al. Chromophore renewal and fluorogen-binding tags: a match made to last[J]. Scientific Reports, 2017, 7(1): 12316.

[3] Tebo A G, Moeyaert B, Thauvin M, et al. Orthogonal fluorescent chemogenetic reporters for multicolor imaging[J]. Nature Chemical Biology, 2021, 17(1): 30-38.

[4] Streett H E, Kalis K M, Papoutsakis E T. A strongly fluorescing anaerobic reporter and protein-tagging system for Clostridium organisms based on the fluorescence-activating and absorption-shifting tag protein (FAST)[J]. Applied and Environmental Microbiology, 2019, 85(14): e00622-19.

[5] El Hajji L, Bunel B, Joliot O, et al. A tunable and versatile chemogenetic near-infrared fluorescent reporter[J]. Nature Communications, 2025, 16(1): 2594.

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