

Product Data Sheet

Product Name: RT-AM
Cat. No.: GC34435

Chemical Properties

Cas. No. 2280796-94-1

SMILES O=C1OC2=CC(N3CCC3)=CC=C2C=C1/C=C(C#N)/C(N(CC(OCOC(C)=O)=O)CC(OCOC(C)=O)=O)=O

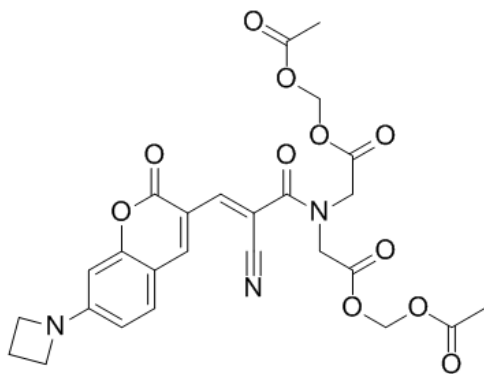
Formula $C_{26}H_{25}N_3O_{11}$ M.Wt 555.49

Solubility DMSO : 25 mg/mL (45.01 mM; Need ultrasonic) Storage Store at -20°C

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

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

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Cell experiment: The HeLa cell line is grown in DMEM media supplemented with 10% FBS and 1% 1003 Pen Strep. Cells are cultured under a controlled atmosphere (37°C, 5% CO₂). Glass bottom dishes are used for cell culture due to confocal scanning requirements. Cells are treated with RT-AM (1 µM with 1% DMSO in DMEM) for 10-15 min before imaging. Confocal images are acquired with 405 nm laser/418–495 nm filter and 488 nm laser/499–615 nm filter. All the microscope settings are kept consistent in each[1].

References:

[1]. Jiang X, et al. Quantitative real-time imaging of glutathione. Nat Commun. 2017 Jul 13;8:16087.

Background

RT-AM is a pro-drug real thiol. Real Thiol is a reversible reaction-based fluorescent probe which can quantitatively monitor the real-time glutathione dynamics in living cells.

To enhance the cell permeability of Real Thiol, the carboxylic acid groups is converted to acetoxymethyl (AM) esters, which are readily hydrolysed by esterases to regenerate Real Thiol inside cells. For cells treated with the RT-AM, real-time ratiometric images of the rapid changes of intracellular GSH concentrations in single cells can be generated by dividing the fluorescence intensity values for the 405 nm channel by the 488 nm channel at each corresponding pixel[1].

[1]. Jiang X, et al. Quantitative real-time imaging of glutathione. Nat Commun. 2017 Jul 13;8:16087.

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