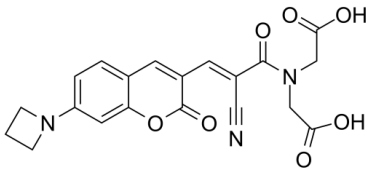
Data Sheet

Product Name:	Real Thiol
Cat. No.:	CS-8083
CAS No.:	2280796-90-7
Molecular Formula:	C20H17N3O7
Molecular Weight:	411.36
Target:	Others
Pathway:	Others
Solubility:	DMSO : ≥ 101 mg/mL (245.53 mM)



BIOLOGICAL ACTIVITY:

Real Thiol is a reversible reaction-based fluorescent probe which can quantitatively monitor the real-time glutathione dynamics in living cells. **In Vitro:** Real Thiol (RT) shows ratiometric fluorescence responses with a wide dynamic range when reacting with Glutathione (GSH). Real Thiol and its GSH adduct (RT-GSH) shows fluorescence maxima at 487 and 562 nm with excitation wavelengths at 405 and 488 nm, respectively. The K_d for the reaction between Real Thiol and GSH is 3.7 mM. Real Thiol has much improved quantum yields and photostability. The wide dynamic range of Real Thiol allows for monitoring of the GSH level changes within 1 to 10 mM in both directions in living cells. Gel permeation chromatography (GPC) analysis shows that 10% of Real Thiol reacts with thiolated proteins while 90% of Real Thiol reacts with GSH[1].

PROTOCOL (Extracted from published papers and Only for reference)

Kinase Assay: [1]Real Thiol (RT) stock solution is diluted with PBS to the desired concentrations. Equal volumes (typically 20 to 100 μL) of various Glutathione (GSH) solutions with different concentrations are mixed with the Real Thiol solution 10 to 15 min before measurement. All samples are prepared on one 96-well/384-well plate with 3 replicates each. The plate reader is set to read absorption of all samples first. Fluorescent signals are then recorded at λ_{ex}=405 nm, λ_{em}=485 nm, and λ_{ex}=488 nm, λ_{em}=565 nm with bottom read. For testing fluorescent interference by environmental factors, the Real Thiol stock solution is directly diluted with corresponding solutions (for example, certain pH buffer or glycerol solution) and measured using the plate reader with the same settings stated above[1].

References:

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

CAIndexNames:

2,2'-((3-(7-(Azetidin-1-yl)-2-oxo-2H-chromen-3-yl)-2-cyanoacryloyl)azanediyl)diacetic acid

SMILES:

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

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

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