

## Coelenterazine

## Chemical Properties

CAS No. : 55779-48-1

Formula: C<sub>26</sub>H<sub>21</sub>N<sub>3</sub>O<sub>3</sub>

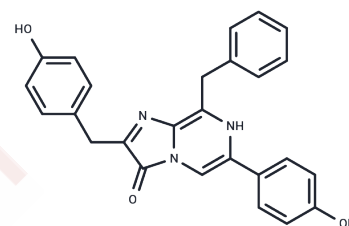
Molecular Weight: 423.46

Keep away from direct sunlight, Store at low temperature, The compound is unstable in solution.

Storage: Please use soon

Powder: -20°C for 3 years

Actual storage temperature shall be subject to the COA.



## Biological Description

Description	Coelenterazine is a superoxide anion-sensitive chemiluminescent probe that can be used to detect the chemiluminescence of peroxynitrite and can serve as a luminescent enzyme substrate for apoaequorin and Renilla luciferase.
Targets(IC50)	Others, Reactive Oxygen Species, ROS
In vitro	When monitoring various biological processes, coelenterazine (CTZ) can be catalyzed by luciferases, such as the sea pansy <i>Renilla reniformis</i> (Rluc) and the marine copepod <i>Gaussia princeps</i> (Gluc), which results in emission of blue light. In Gli36-Gluc- or Gli36-Rluc-expressing Gli36 cells, coelenterazine (8 礩/ml) shows a bioluminescence signal. [1] In RIN-5F, 4T1, HCT 116, HEK 293, 293FT, HeLa and INS-1 cells, coelenterazine can be used to assay superoxide anion concentrations. [2]
In vivo	<b>METHODS:</b> Gli36-Gluc and Gli36-Rluc cells were injected into the leg muscles of nude mice. Mice were injected intravenously with 100 礩 (4 mg/kg body weight) of coelenterazine and immediately imaged using a cooled charge-coupled device (CCD) camera. The mice were injected with 500 礩 (20 mg/kg) of water-soluble coelenterazine and imaged using a CCD camera. <b>RESULTS</b> Water-soluble coelenterazine produced 10-fold higher photon counts for Gluc and 4-fold higher photon counts for Rluc, indicating that s-coelenterazine is more sensitive for detecting coelenteric acid luciferase in vivo. [1]
Cell Research	Cells are plated at a density of 5×10 <sup>4</sup> cells per well into 24-well plates and grown to 80-100% confluency. Just before imaging, media are changed to a colorless solution containing (in mM): 2.7 KCl, 139 NaCl, 8.1 Na <sub>2</sub> HPO <sub>4</sub> , 0.7 H <sub>2</sub> O, 1.5 KH <sub>2</sub> PO <sub>4</sub> , 1.8 CaCl <sub>2</sub> , 1 MgCl <sub>2</sub> and 5.5 d-glucose. Cells are preincubated for 15 min in the absence or presence of Pgp modulator, after which Coelenterazine (final concentration of 470 nM) is added directly to the cells. They are for reference only.
Animal Research	Mice are anesthetized with metofane or isoflurane before tail vein injection of Coelenterazine (4 礩/g) formulated from an ethanol stock diluted in sodium phosphate buffer (50 mM). Bioluminescence imaging is performed on the in vivo imaging system at 2, 6, 8, and 11 min after injection. Anesthesia is maintained during imaging by nose cone delivery of 2.5% isoflurane. After imaging, animals are killed by cervical dislocation; tumors are then harvested and weighed. They are for reference only.

## Solubility Information

Solubility	Ethanol: 1 mg/mL (2.36 mM), It is not recommended to dissolve in DMSO. The compound is unstable in solution, please use soon. H <sub>2</sub> O: < 1 mg/mL (insoluble or slightly soluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)
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## Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.3615 mL	11.8075 mL	23.615 mL
5 mM	0.4723 mL	2.3615 mL	4.723 mL
10 mM	0.2361 mL	1.1807 mL	2.3615 mL
50 mM	0.0472 mL	0.2361 mL	0.4723 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

## Reference

Morse D, et al. A water-soluble coelenterazine for sensitive in vivo imaging of coelenterate luciferases. *Mol Ther.* 2012 Apr;20(4):692-3.

Hong Y, Guo H, Wei M, et al. Cell-based reporter assays for measurements of antibody-mediated cellular cytotoxicity and phagocytosis against SARS-CoV-2 spike protein. *Journal of Virological Methods.* 2022: 114564

Pichler A, et al. In vivo RNA interference-mediated ablation of MDR1 P-glycoprotein. *Clin Cancer Res.* 2005 Jun 15; 11(12):4487-94.

Markova SV, et al. Coelenterazine-dependent luciferases. *Biochemistry (Mosc).* 2015 Jun;80(6):714-32.

Lucas M, et al. Coelenterazine is a superoxide anion-sensitive chemiluminescent probe: its usefulness in the assay of respiratory burst in neutrophils. *Anal Biochem.* 1992 Nov 1;206(2):273-7.

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