

Product Data Sheet

Product Name: Coelenterazine TFA

Cat. No.: GC81763

Chemical Properties

Cas. No.

Formula $C_{28}H_{22}F_3N_3O_5$ M.Wt 537.49

Solubility DMSO: 100 mg/mL (186.05 mM; Need ultrasonic) Storage Store at 4°C, sealed storage, away from moisture

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



Background

Coelenterazine TFA is a luminescent enzyme substrate for apoaeguorin and Renilla luciferase. Renilla luciferase and substrate Coelenterazine TFA has been used as the bioluminescence donor in

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bioluminescence resonance energy transfer (BRET) to detect protein-protein interactions. Coelenterazine TFA is a superoxide anion-sensitive chemiluminescent probe and it can also be used in chemiluminescent detection of peroxynitrite (Ex/Em = 429/466 nm) [1] [2] [3].

In Vivo, HCC1806-RR cells modified with Rluc are xenografted into mice [4]. Coelenterazine (2 mg/kg) TFA is injected intravenously. After 5 minutes, the mice are fixed and imaged for 3 to 5 minutes. All mice demonstrated very high Rluc activity at the primary site with the majority of mice simultaneously showing metastases to inguinal ILNs[4].

In Vitro, HCT-8 control cells, transiently expressing Renilla luciferase (RLuc), showed low bioluminescence due to P-glycoprotein-mediated efflux transport of Coelenterazine TFA. By comparison, transiently expressing RLuc HCT-8 cells, wherein P-glycoprotein was down-regulated with shRNAi, showed high bioluminescence[3]. Guidelines (Following is our recommended protocol. This protocol only provides a guideline, and should be modified according to your specific needs).

Measurement of free radical production[5]. 1. The measurements are performed in 0.1 M potassium phosphate buffer, pH 7.0. 2. Coelenterazine TFA (2.5 μ M) is added to the buffer immediately prior to measurements. 3. Add 2 mg/mL NADH. 4. At room temperature using a luminometer.

References:

- [1]. Markova SV, et al, Coelenterazine-dependent luciferases. Biochemistry (Mosc). 2015 Jun;80(6):714-32.
- [2]. 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.
- [3]. Pichler A, et al. In vivo RNA interference-mediated ablation of MDR1 P-glycoprotein. Clin Cancer Res. 2005 Jun 15;11(12):4487-94.
- [4]. Volk-Draper LD, et al. Novel model for basaloid triple-negative breast cancer: behavior in vivo and response to therapy. Neoplasia. 2012 Oct;14(10):926-42.
- [5]. Raha S, et al. Control of oxygen free radical formation from mitochondrial complex I: roles for protein kinase A and pyruvate dehydrogenase kinase. Free Radic Biol Med. 2002 Mar 1;32(5):421-30.

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