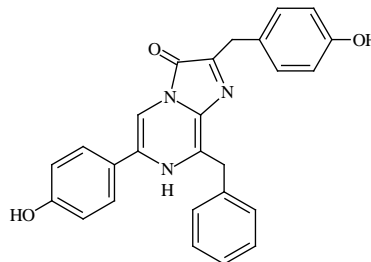


## PRODUCT AND SAFETY DATA SHEET

**PRODUCT NAME:** Coelenterazine (also known as "Native Coelenterazine")**CATALOG #:** 10110/10110-1/10110-2**MOLECULAR INFORMATION:** C<sub>26</sub>H<sub>21</sub>N<sub>3</sub>O<sub>3</sub>  
Mwt: 423.5  
[55779-48-1]**PROPERTIES:**

|                               |                                                                      |
|-------------------------------|----------------------------------------------------------------------|
| <b>Color &amp; Form</b>       | Yellow crystalline powder                                            |
| <b>Purity</b>                 | ≥ 98% by HPLC                                                        |
| <b>Solubility</b>             | Hardly soluble in water. Soluble in MeOH or EtOH. <b>AVOID DMSO.</b> |
| <b>Absorption/Emission</b>    | 429 nm/466nm                                                         |
| <b>Extinction Coefficient</b> | ca. 7400 cm <sup>-1</sup> M <sup>-1</sup> at 427 nm                  |

**STORAGE AND HANDLING:**

Solution is susceptible to oxidation by air. For best results, keep solution from light and store at < -70°C under nitrogen or argon. Keep solid at -20 °C or -70 °C and protect from light under nitrogen or argon for long-term storage. Keep calcium free when stored in solution (avoid using glass container).

**APPLICATION:**

Coelenterazine (native form) is a luminescent enzyme substrate for apoaequorin and *Renilla* luciferase. The aequorin complex has been used as an excellent calcium indicator that can measure a broad concentration range of calcium from ~0.1 μM to >100 μM.<sup>1-4</sup> *Renilla* luciferase, encoded by the *luc* gene, has been widely used as a reporter protein. *Renilla* luciferase/coelenterazine has also been used as the bioluminescence donor in bioluminescence resonance energy transfer (BRET)<sup>5</sup> to study protein-protein interactions.

Other uses of coelenterazine include chemiluminescent detection of superoxide anion and peroxynitrite in cells or tissues.<sup>6-9</sup>

Use methanol or ethanol to prepare the stock solution (> 1mg/mL). Do not use DMSO (dimethylsulfoxide), as coelenterazine may be unstable in this solvent.

The stock solution can be further diluted with buffer to the appropriate working concentration. We recommend fresh working concentration be prepared each time to avoid precipitate and decomposition.

**REFERENCE:**

1) *Meth. Cell Biol.* **40**, 305(1994); 2) *Meth. Enzymol.* **172**, 164(1989); 3) *J. Cell Biol.* **115**, 1259(1991); 4) *Cell Calcium*, **14**, 373 (1993); 5) *Proc. Natl. Acad. Sci. USA* **96**, 151(1999); 6) *Free Radic. Biol. Med.* **28**, 1232(2000); 7) *Circ. Res.* **84**, 1203(1999); 8) *Immunol. Today* **15**, 7(1994); 9) *Anal. Biochem.* **206**, 273(1992); 10) *Biochem. Biophys. Res. Commun.* **233**, 349(1997); 11) *Mol Imaging*, **3** (1), 43(2004 Jan)

**Luminescent Properties of Coelenterazine Products with Apoaequorin\***

| Cat. # | Coelenterazine Product | Emission Maximum (nm) | Relative Luminescence capacity | Relative Intensity | Half-rise Time (s) |
|--------|------------------------|-----------------------|--------------------------------|--------------------|--------------------|
| 10110  | native                 | 466                   | 1.00                           | 1.00               | 0.4-0.8            |
| 10112  | <i>cp</i>              | 442                   | 0.95                           | 15                 | 0.15-0.3           |
| 10124  | <i>e</i>               | 405/465               | 0.5                            | 4                  | 0.15-0.3           |
| 10114  | <i>f</i>               | 473                   | 0.80                           | 18                 | 0.4-0.8            |
| 10117  | <i>fcp</i>             | 452                   | 0.57                           | 135                | 0.4-0.8            |
| 10111  | <i>h</i>               | 466                   | 0.82                           | 10                 | 0.4-0.8            |
| 10113  | <i>hcp</i>             | 444                   | 0.67                           | 190                | 0.15-0.3           |
| 10121  | <i>i</i>               | 476                   | 0.70                           | 0.03               | 8                  |
| 10116  | <i>ip</i>              | 441                   | 0.54                           | 47                 | 1                  |
| 10115  | <i>n</i>               | 467                   | 0.26                           | 0.01               | 5                  |

\*All data from *Biochem. J.* **261**, 913(1989)

**Luminescent Properties of Coelenterazine Analogs with *Renilla* Luciferase\***

| Cat. # | Coelenterazine Product | Emission Maximum (nm) | Total Light (%) | Initial Intensity (%) |
|--------|------------------------|-----------------------|-----------------|-----------------------|
| 10110  | native                 | 475                   | 100             | 100                   |
| 10112  | <i>cp</i>              | 470                   | 23              | 16                    |
| 10124  | <i>e</i>               | 418 and 475           | 137             | 750                   |
| 10114  | <i>f</i>               | 473                   | 28              | 58                    |
| 10111  | <i>h</i>               | 475                   | 41              | 57                    |
| 10115  | <i>n</i>               | 475                   | 47              | 68                    |

\* All data from *Biochem. Biophys. Res. Commun.* **233**, 349(1997).

**TOXICITY:** Unknown

**FIRST AID:** Potentially harmful. Avoid prolonged or repeated exposure. Avoid getting in eyes, on skin, or on clothing. Wash thoroughly after handling. If eye or skin contact occurs, wash affected areas with plenty of water for 15 minutes and seek medical advice. In case of inhaling or swallowing, move individual to fresh air and seek medical advice immediately.

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