



Coelenterazine Sampler Kit

UltraPure Grade

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|------------------|-----------------|
| Catalog # | 71403 |
| Kit Size | 25 µg X 5 vials |

Kit Components, Storage and Handling

| Component | Description | Quantity |
|-------------|---------------------------------------|-------------------------|
| Component A | Coelenterazine analogues ¹ | 25 µg per vial, 5 vials |
| Component B | Ethanol | 10 mL |

| Component A: Coelenterazine analogues ³ | | | | | |
|--|--------------------|--------|-------------|-------------------------|----------------|
| | | | | 25 µg per vial, 5 vials | |
| Catalog# | Name | MW | Abs/Em (nm) | Relative Luminescence | Half Rise Time |
| 82255 | Coelenterazine | 423.47 | 429/466 | 1 | 6-30 ms |
| 82256 | Coelenterazine cp | 415.49 | 430/442 | 28 | 2-5 ms |
| 82257 | Coelenterazine f | 425.46 | 437/472 | 20 | 6-30 ms |
| 82259 | Coelenterazine hcp | 399.49 | 433/445 | 500 | 2-5 ms |
| 82260 | Coelenterazine n | 457.53 | 431/468 | 0.15 | 6-30 ms |

Storage and Handling

- Store all components at -20°C.

Introduction

The photoprotein aequorin has been used as a sensitive intracellular probes for Ca^{2+} . When three Ca^{2+} ions bind to it, aequorin emits blue light and decomposes itself into apoaequorin, coelenteramide and CO_2 .² Inversely, apoaequorin can regenerate into the aequorin by incubation with coelenterazine in the presence of O_2 .³ The approximately third-power dependence of aequorin's bioluminescence on Ca^{2+} concentration allows the measurement of Ca^{2+} concentrations with a broad detection range from 0.1 μM to >100 μM . Unlike fluorescent Ca^{2+} indicators, Ca^{2+} -bound aequorin can be detected without illuminating the sample, thereby eliminating interference from autofluorescence.

This Coelenterazine Sampler Kit consists of coelenterazine and four derivatives for reconstituting aequorin in cells that have been transfected with apoaequorin DNA. The coelenterazine analogs confer different Ca^{2+} affinities and spectral properties on the aequorin complex. Recombinant apoaequorin reconstitute with coelenterazine *hcp* is reported to have the best luminescence overall, with both a high quantum yield and a fast response time. However, intracellular reconstitution of aequorin from coelenterazine analogs can be relatively slow. Aequorins containing the *cp*, *f* or *h* form of coelenterazine exhibit 10-20 times stronger luminescence than that of apoaequorin reconstituted with native coelenterazine. Coelenterazine *cp* has been used in HTS screening assay for GPCRs.

References:

1. Shimomura, O. et al. *Biochem J* **296**, 549 (1993).
2. Shimomura, O. et al. *Proc Natl Acad Sci USA* **75**, 2611 (1978).
3. Shimomura, O. et al. *Nature* **256**, 236 (1975).