

Product Data Sheet

Renilla mullerei Luciferase

Catalog Number: 0309

Product Description

Renilla mullerei is a species of soft coral that is characterized by a green fluorescence. The green fluorescent protein obtained from this organism exhibits nearly symmetrical excitation and emission peaks with a relatively small Stokes shift.¹ This is in contrast to the more commonly employed GFP from *Aequorea victoria* which has two wavelengths at which excitation occurs, and a broader emission spectra. The monomer extinction coefficient for Rr-GFP is about 5.5-fold higher than the *Aequorea* GFP which, in conjunction with a slightly higher quantum yield, produces a brighter fluorescence. Recombinant *Renilla reniformis* GFP has the same level of fluorescence as the native protein.²

Product Specifications

Protein	1mg (0309-1), 300µg (0309-2)
Long-term Storage	2 years at -80°C Aliquot to avoid repeated freezing and thawing
Short-term Storage	1 month at 4°C
Formulation	In: 10mM Na ₂ HPO ₄ , 140 mM NaCl, 2 mM KH ₂ PO ₄ , 3mM KCl, 20% glycerol, pH 7.6
Molecular Weight	26kDa by SDS-PAGE 22kDa

Technical Information

Length	331 aa
Molecular Weight	36,110
Molar Extinction Coefficient	62640
Isoelectric Point	5.98
Excitation	NA
Emission	480 nm

Instructions for Use

1. The amount of luciferase used for a given assay should be empirically determined by titrating the enzyme. The amount of luciferase that gives the highest signal: noise ratio should be selected.
2. Prepare a coelenterazine stock by dissolving the powder in 1mL of acidified methanol (50µL concentrated HCl to 10mL of anhydrous methanol) to give a 200µM solution. Aliquot and store at -80°C for up to 4 weeks. A working solution of coelenterazine is prepared by diluting the stock solution to 10µM in 18Mohm water. Important Notice: Coelenterazine is unstable in aqueous solutions. It is recommended that working solutions are prepared daily. Activity results will vary depending on concentration of Coelenterazine used.
3. For performing luciferase assays, dilute the enzyme in 50mM Tris-Cl, 0.5M NaCl, pH 7.8 to the desired RFU per assay. Add coelenterazine to 2.5µM and immediately measure the light production at 480nm with a 5-10 second integration.



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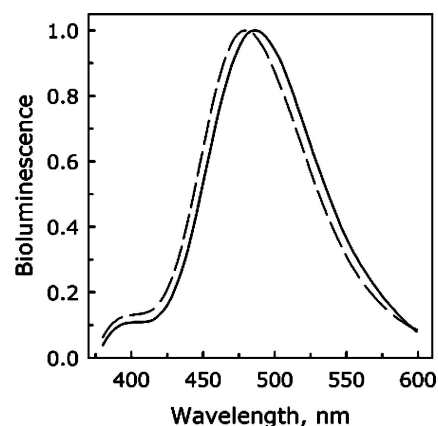


Figure 1. The emission spectrum for *Renilla mulleri* luciferase with free coelenterazine (solid line) and in the presence of the coelenterazine binding protein (dashed line). (From Titushin et al. 2008.)

Material Safety Data

FOR RESEARCH USE ONLY. NOT INTENDED OR APPROVED FOR HUMAN, DIAGNOSTICS OR VETERINARY USE. Do not ingest, swallow or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. For complete safety information see full Material Safety Data Sheet.

References

- ¹ Labas, Y. A., Gurskaya, N. G., Yanushevich, Y. G., Fradkov, A. F., Lukyanov, K. A., Lukyanov, S. A., and Matz, M. V. 2002. Diversity and evolution of the green fluorescent protein family. *Proc. Natl. Acad. Sci. USA.* 99:4256-4261.
- ² Bryan, B. J., Szent-Gyorgyi, C. 2001. Luciferases, fluorescent proteins, nucleic acids encoding the luciferases and fluorescent proteins and the use thereof in diagnostics, high throughput screening and novelty items. U.S. Patent No. 6,232,107.