

Renilla luciferase

- CATALOG NUMBER:** 4400
- LOT NUMBER:**
- QUANTITY:** Approximately 2.5×10^6 Relative Light Units (RLU)
- DESCRIPTION:** Renilla luciferase is a recombinant luciferase from the anthozoan coelenterate *Renilla reniformis*, the Sea Pansy. Renilla luciferase has a light emission spectrum and kinetics identical to the native protein⁽¹⁾.
- MOLECULAR WEIGHTS:** A single polypeptide with a molecular weight of 61,000 Daltons.
Glutathione S-transferase (GST) is 26,000 Daltons. Renilla luciferase is 35,000 Daltons.
- FORMAT:** A single vial containing purified (>95%), recombinant GST-Renilla luciferase in 0.25M Na₂HPO₄ buffer, pH 7.0, containing 30% glycerol. The protein concentrations and volume will vary from lot to lot. See label for lot specific information.
- APPLICATIONS:** A stock solution of luciferase may be prepared by diluting the preparation with 1.0 mL of 0.01M KH₂PO₄, 0.5 M NaCl, 0.001 M EDTA, 0.1mg/mL bovine serum albumin, pH 7.5. Luciferase catalyzes the following reaction:
$$\text{Coelenterazine} + \text{O}_2 \rightarrow \text{Oxycoelenterazine} = \text{CO}_2 + \text{h}\nu (\lambda_{\text{max}} = 480 \text{ nm})$$

The reaction kinetics depend on the ratio of enzyme to substrate and must be optimized appropriately. Instrument parameters should be set for "glow" kinetics since the reaction is sustained for several minutes depending upon conditions; however, like some chemiluminescent reactions, the light emission starts immediately upon addition of substrate solution, coelenterazine.
- NOTES:** The "glow" kinetics of *Renilla luciferase* make this reagent more amenable to reporter gene applications and applications involving film detection for signal integration where the signal is amplified due to the enzymatic turnover of coelenterazine⁽²⁾. Luminescence is initiated by exposure of luciferase to its substrate. Light production is immediate.
Variations in Relative Light Units (RLUs) may be observed due to a variety of factors including substrate activity and luminometer used for determination.
- PRESENTATION:** One vial of recombinant luciferase in 0.25M Na₂HPO₄ buffer, pH 7.0, containing 30% glycerol.
- STORAGE/HANDLING:** Store Renilla luciferase at 2° to 8°C for up to one week or at -20°C for up to 24 months.

REFERENCES:

- 1) Matthews, J.C., Hori, K., and Cormier, M.J. (1977) "Purification and Properties of *Renilla reniformis* Luciferase" *Biochemistry* **16**, 85-91.
- 2) Stults, N.L., Stocks, N.A., Cummings, R.D., Cormier, M.J., and Smith, D.F. Applications of Recombinant Bioluminescent Proteins as Probes for Proteins and Nucleic Acids. In: *Bioluminescence and Chemiluminescence: Current Status* (P. Stanley and L. Kricka, eds.), John Wiley and Sons, Chichester, U.K. 1991, pp. 533-536.

For research use only; not for use in diagnostic procedures.