

Product Information

Luciferase from *Photinus pyralis* (firefly)

Recombinant, expressed in *E. coli*, buffered aqueous solution, $\geq 10 \times 10^{10}$ units/mg protein

L9420

Product Description

CAS Registry Number: 61970-00-1

Enzyme Commission (EC) Number: 1.13.12.7

Synonyms: Luciferin 4-monooxygenase, Firefly Luciferase

Storage Temperature: $-20\text{ }^{\circ}\text{C}$

Firefly luciferase is a 62 kDa protein that catalyzes the production of light. The enzyme requires ATP, molecular oxygen, and luciferin, a heterocyclic compound, to generate light in a two-step process.¹ The light-producing reaction is initiated by luciferin activation (adenylation of its carboxylate group) and proceeds in the presence of molecular oxygen to yield a photon of yellow-green light.^{1,2}

Firefly luciferase is used extensively in molecular and cell biology, in particular for the efficient detection and quantitation of ATP and as a reporter for genetic function.^{3,4}

This product is a recombinant luciferase from *Photinus pyralis* (American firefly) produced from the *luc* gene expressed in *E. coli*. Several references cite use of this L9420 product in their research.⁵⁻⁸

Product

This product is supplied in a buffered solution that contains Tris-acetate (pH 7.8), ammonium sulfate, glycerol, ethylene glycol, EDTA, and DTT.

Specific Activity: $\geq 10 \times 10^{10}$ light units/mg protein

Unit definition: One luciferase enzyme unit will produce one Relative Light Unit (RLU) at $20\text{--}25\text{ }^{\circ}\text{C}$ over a 10-second period, measured in a 100 μL assay mixture that contains 40 pmole ATP and 15 nmole luciferin in Tris-glycine buffer (pH 7.6), using a GloMax™ 20/20 Luminometer.

Precautions and Disclaimer

This product is for R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store the product at $-20\text{ }^{\circ}\text{C}$.

Preparation Instructions

The product can be stored at $2\text{--}8\text{ }^{\circ}\text{C}$ for up to 1 week without loss of activity. **Do not vortex.** Avoid vigorous agitation.

References

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6. Wang, L. *et al.*, *PLoS One*, **14(10)**, e0223096 (2019).
7. Yang, G. *et al.*, *Autophagy*, **17(5)**, 1193-1204 (2021).
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