Luciferase from *Photinus pyralis* (firefly) recombinant, expressed in *Escherichia coli*

Catalog Number SRE0045
Storage Temperature –20 °C

CAS RN 61970-00-1
EC 1.13.12.7
Synonyms: Luciferin 4-monoxygenase, Firefly Luciferase

**Product Description**
Firefly luciferase is a 62 kDa protein that catalyzes the production of light. The enzyme requires ATP, molecular oxygen, and the heterocyclic compound, firefly luciferin, to generate light in a two-step process. 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.

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.

This product is a recombinant luciferase from *Photinus pyralis* (American firefly) produced from the *luc* gene expressed in *E. coli*. It is lyophilized from a buffered solution containing HEPES, pH 7.5, NaCl, MgCl\(_2\), EDTA, DTT, and a carbohydrate stabilizer.

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 20–25 °C over a 10 second period, measured in 100 μl assay mixture containing 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.

**Preparation Instructions**
To obtain maximal solubility it is important to reconstitute the enzyme at a high salt concentration, such as 1 M Tris buffer with any counter ion at pH 7–8. The enzyme can be prepared at a concentration of up to 5 mg protein/ml. Do not vortex and avoid agitation.

**Storage/Stability**
After reconstitution, the enzyme solutions can kept at 4–8 °C for up to 2 days or frozen in working aliquots at –20 °C for at least one month. Repeated freezing and thawing is not recommended. Do not store in a frost-free freezer.

**References**


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