

Luciferase from Photinus pyralis (firefly), Recombinant

Cat. No. NATE-0424

Lot. No. (See product label)

Introduction

Description Firefly luciferase is an enzyme that catalyzes production of light from luciferin in the presence of Mg^{2+} -ATP and oxygen. The reaction of this enzyme with luciferin, ATP, and O_2 results in the emission of light. Luciferase activity can be inhibited by general anesthetics including isoflurane and ketamine/medetomidine thereby affecting the sensitivity of bioluminescence imaging.

Applications The reaction of this enzyme with luciferin, ATP, and O_2 results in the emission of light. Luciferase can be used to detect trace amounts of ATP. Firefly luciferase is also one of the most commonly utilized reporter genes for the study of gene expression. The bioluminescent reaction catalyzed by luciferase is one of the most sensitive analytical tools for measuring gene expression. < or equal to one femtomole of ATP can be detected using 0.2 μg of luciferase.

Synonyms Photinus-luciferin 4-monooxygenase (ATP-hydrolysing); firefly luciferase; luciferase (firefly luciferin); Photinus luciferin 4-monooxygenase (adenosine triphosphate-hydrolyzing); firefly luciferin luciferase; Photinus pyralis luciferase; EC 1.13.12.7; 61970-00-1

Product Information

Species Photinus pyralis (firefly)

Source E. coli

Form Colorless to pale yellow clear liquid

EC Number EC 1.13.12.7

CAS No. 61970-00-1

Molecular Weight 62 kDa

Activity $\geq 2.0 \times 10^{11}$ RLU/mg protein

Unit Definition One light unit produces a biometer peak height equivalent to 0.02 μCi of ^{14}C in PPO/POPOP cocktail. Light units measured in 50 μl assay mixture containing 5 pmol ATP and 7.5 nmol luciferin in Tris-glycine buffer, pH 7.6, at 25°C.

Storage and Shipping Information

Storage -20°C