Creative Enzymes®

Native Photobacterium phosphoreum (Lux) Bacterial Luciferase

Cat. No. NATE-1743

Lot. No. (See product label)

Introduction

Description	P. phosphoreum
Applications	Bacterial luciferase is purified from a Photobacterium phosphoreum strain isolated from squid by our team and selected for its brightest luminescence. The luxab gene was amplified by PCR and cloned. The sequences of cloned α and β subunits have shown 94% and 92% identity to P24113 and P12744 proteins of Photobacterium phosphoreum (SwissProt Entry).
Synonyms	aldehyde monooxygenase; luciferase; Vibrio fischeri luciferase; alkanal,reduced-FMN:oxygen oxidoreductase (1-hydroxylating, luminescing); alkanal,FMNH2:oxygen oxidoreductase (1-hydroxylating, luminescing); alkanal monooxygenase (FMN); aldehyde,FMNH2:oxygen oxidoreductase (1-hydroxylating, luminescing)

Product Information

Species	Luciferase
Appearance	In luminescent marine photobacteria, the production of light results from two successive reactions: The first one is catalyzed by the NAD(P)H-FMN oxidoreductase (EC 1.6.8.1), that produces FMNH2 acting as a substrate for the second reaction, which is catalyzed by a luciferase (EC 1.14.14.3) to generate light in the presence of an aliphatic aldehyde and molecular oxygen. In the presence of limiting concentrations of NADH substrate, light intensity is proportional to NAD(P)H concentration. The coupling of bacterial luciferase to FMN-NAD(P)H oxidoreductase has been used to provide ultrasensitive analytical tools for the quantification of NAD(P)H and the substrates of NADH-, NADPH-dependent enzymes (e.g. glucose, lactate, malate, ethanol, sorbitol, oxaloacetate). Bacterial Luciferase can be used for NAD(P)H quantification or in dehydrogenase-coupled assays. The enzyme is provided lyophilized, alone or with lyophilized FMN-reductase
EC Number	EC 1.14.14.3
CAS No.	9014-00-0
Activity	>500,000 RLU per second per µg of protein in the presence of 10µM NADH and 3.5mU/ml FMN-reductase as measured with an Optocomp 1 (Celsis) luminometer.

Usage and Packaging

Package	stable lyophilized form