Creative Enzymes®

Native Vibrio fischeri (Photobacterium f) Luciferase

Cat. No. NATE-0423

Lot. No. (See product label)

Introduction

Description In enzymology, an alkanal monooxygenase (FMN-linked) (EC 1.14.14.3) is an enzyme that catalyzes the chemical reaction:RCHO + reduced FMN + O2↔ RCOOH + FMN + H2O + hnu. The 3 substrates of this enzyme are RCHO, reduced FMN, and O2, whereas its 4 products are RCOOH, FMN, H2O, and hn. This enzyme belongs to the family of oxidoreductases, specifically those acting on paired donors, with O2 as oxidant and incorporation or reduction of oxygen. The oxygen incorporated need not be derived from O2 with reduced flavin or flavoprotein as one donor, and incorporation of one atom of oxygen into the other donor.

Applications Luciferase from Vibrio fischeri has been used in a study to assess kinetics of light emission and oxygen consumption by bioluminescent bacteria. It has also been used in a study to investigate the sensitivity of dark mutants of various strains of luminescent bacteria to reactive oxygen species.

Synonyms alkanal monooxygenase (FMN); bacterial luciferase; aldehyde monooxygenase; luciferase; Vibrio fischeri luciferase; alkanal,reduced-FMN:oxygen oxidoreductase (1-hydroxylating, luminescing); alkanal,FMNH2:oxygen oxidoreductase (1-hydroxylating, luminescing); EC 1.14.14.3; 9014-00-0

Product Information

Source Vibrio fischeri (Photobacterium f)

Form lyophilized powder

EC Number EC 1.13.12.7

CAS No. 9014-00-0

Specificity Partially purified, soluble extracts containing FMN-dependent luciferase and NADH-and NADPH-dependent FMN reductases. Produces light in a system containing FMN, NADH or NADPH, and n-decyl aldehyde.