

## 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:  $\text{RCHO} + \text{reduced FMN} + \text{O}_2 \leftrightarrow \text{RCOOH} + \text{FMN} + \text{H}_2\text{O} + \text{h}\nu$ . The 3 substrates of this enzyme are RCHO, reduced FMN, and  $\text{O}_2$ , whereas its 4 products are RCOOH, FMN,  $\text{H}_2\text{O}$ , and  $\text{h}\nu$ . This enzyme belongs to the family of oxidoreductases, specifically those acting on paired donors, with  $\text{O}_2$  as oxidant and incorporation or reduction of oxygen. The oxygen incorporated need not be derived from  $\text{O}_2$  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, FMN $\text{H}_2$ :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.