

Native *Pseudomonas fragi* Acyl-CoA Synthetase

Cat. No. NATE-0027

Lot. No. (See product label)

Introduction

Description

The Long chain fatty acyl-CoA synthetase enzyme is a member of the ligase family that activates the breakdown of complex fatty acids. Long chain fatty acyl-CoA synthetase plays a crucial role in intermediary metabolism by catalyzing the formation of fatty acyl-CoA by a two-step process proceeding through an adenylated intermediate. It is an enzyme present in all organisms from bacteria to humans. It catalyzes the pre-step reaction for β -oxidation of fatty acids or can be incorporated in phospholipids.

Applications

Useful in the enzymatic determination of fatty acid when coupled with Acyl-CoA oxidase

Synonyms

EC 6.2.1.3; ACS; acyl-CoA synthetase; fatty acid thiokinase (long chain); acyl-activating enzyme; palmitoyl-CoA synthase; lignoceroyl-CoA synthase; arachidonyl-CoA synthetase; acyl coenzyme A synthetase; acyl-CoA ligase; palmitoyl coenzyme A synthetase; thiokinase; palmitoyl-CoA ligase; acyl-coenzyme A ligase; fatty acid CoA ligase; long-chain fatty acyl coenzyme A synthetase; oleoyl-CoA synthetase; stearoyl-CoA synthetase; long chain fatty acyl-CoA synthetase; long-chain acyl CoA synthetase; fatty acid elongase; LCFA synthetase; pristanoyl-CoA synthetase; ACS3; long-chain acyl-CoA synthetase I; long-chain acyl-CoA synthetase II; fatty acyl-coenzyme A synthetase; long-chain acyl-coenzyme A synthetase; FAA1

Product Information

Source

Pseudomonas fragi

Appearance

White powder

Form

Freeze dried powder

EC Number

EC 6.2.1.3

CAS No.

9013-18-7

Molecular Weight

60 kDa (Sephadex G-150) SDS-PAGE 62 kDa

Activity

2-8 U/mg

Contaminants

Catalase < 1.00%; Glucose oxidase < 0.1%

Isoelectric point

pH 5.2

pH Stability

6.0-8.0 (37°C, 2 hrs)

Optimum pH

7.7

Thermal stability

Stable at 50°C and below (pH 7.5, 10 mins)

Michaelis Constant

Palmitic acid $1.1 \times 10^{-5}M$; ATP $1.7 \times 10^{-4}M$; CoA $3.2 \times 10^{-4}M$

Activators

Triton X-100

Stabilizers

ATP

Unit Definition

One unit is defined as the amount of enzyme which converts 1 μ mole of fatty acid

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One unit is defined as the amount of enzyme which converts 1 μ mole of fatty acid to acyl-CoA per minute at 37°C under the conditions specified in the assay procedure.

Storage and Shipping Information**Storage**

Keep in freezer (-20°C to -80°C), dry place in well-closed containers and away from direct sun light).

Stability

At least one year at -20°C