

Leucine dehydrogenase, Enzyme Activity

Catalog	Unit
TBP0033-100U	100 U
TBP0033-500U	500 U

Preparation and Specification

Appearance: White amorphous powder, lyophilized

Activity: GradeII 20U/mg-solid or more (containing approx. 70% of stabilizers)

Contaminants: Leucylpeptide decomposing enzymes

(Leu-Val) $\leq 1.0 \times 10^{-2}\%$

(Leu-Gly-Gly) $\leq 1.0 \times 10^{-2}\%$

NADH oxidase $\leq 1.0 \times 10^{-2}\%$

L-Lactate : oxygen oxidoreductase (EC 1.13.12.4)

L-Lactate + O₂ \longrightarrow Pyruvate + H₂O₂

Stabilizers: 2-Mercaptoethanol, L-cysteine, dithiothreitol, ethylenediaminetetraacetate

Properties

Stability: Stable at -20°C for at least One year

Molecular weight: 245,000

Michaelis constants: $1.0 \times 10^{-3}\text{M}$ (L-Leucine), $3.9 \times 10^{-4}\text{M}$ (NAD⁺), $3.5 \times 10^{-5}\text{M}$ (NADH),

$3.1 \times 10^{-4}\text{M}$ [α -Ketoisocaproate (α -KIC)], $2.0 \times 10^{-1}\text{M}$ (NH₃)

Structure: 6 subunits per enzyme molecule

Inhibitors: Na₂S, Hg⁺⁺, Cu⁺⁺, Co⁺⁺, Mg⁺⁺, p-chloromercuribenzoate

Optimum pH: 10.5-10.8 (L-Leu $\rightarrow\alpha$ -KIC), 9.4 (α -KIC \rightarrow L-Leu)

Optimum temperature: above 70°C

pH Stability: pH 5.5-10.5 (25°C, 20hr)

Thermal stability: below 60°C (pH 6.9, 10min)

Applications

This enzyme is useful for enzyme determination of L-leucine and the activity of leucine amino-peptidase.

For research use only