Native Proteus sp. Glutamate Dehydrogenase (NADP-dependent)

Cat. No. DIA-196

Lot. No. (See product label)

Introduction

Description	Glutamate dehydrogenase (GLDH) is an enzyme, present in most microbes and the mitochondria of eukaryotes, as are some of the other enzymes required for urea synthesis, that converts glutamate to α-ketoglutarate, and vice versa. In animals, the produced ammonia is usually used as a substrate in the urea cycle. Typically, the α-ketoglutarate to glutamate reaction does not occur in mammals, as glutamate dehydrogenase equilibrium favours the production of ammonia and α-ketoglutarate.
Applications	This enzyme is useful for enzymatic determination of NH_3, α-ketoglutaric acid and L-glutamic acid, and for assay of leucine aminopeptidase and urease. This enzyme is also used for enzymatic determination of urea when coupled with urease in clinical analysis.
Synonyms	glutamate dehydrogenase (NADP+); glutamic dehydrogenase; dehydrogenase; glutamate (nicotinamide adenine dinucleotide (phosphate)); glutamic acid dehydrogenase; L-glutamate dehydrogenase; L-glutamic acid dehydrogenase; NAD(P)-glutamate dehydrogenase; NAD(P)H-dependent glutamate dehydrogenase; glutamate dehydrogenase (NADP); EC 1.4.1.4; GLDH

Product Information

Source	Proteus sp.
Appearance	Solution with 50mM Tris-HCl buffer containing 0.05% NaN_3 and 5.0mM EDTA, pH 7.8
EC Number	EC 1.4.1.4
CAS No.	2604121
Molecular Weight	approx. 300 kDa
Activity	GradeⅡ•Ⅲ 300U/mg-protein or more (9,000U/ml or more)
Contaminants	NADPH oxidase < 1.0×10^{-2}% Glutathione reductase < 1.0×10^{-2}% (GradeⅡ-209) < 1.0×10^{-1}% (GradeⅢ-309)
Isoelectric point	4.6
pH Stability	pH 6.0-8.5 (25°C, 20hr)
Optimum pH	8.5 (α-KG→L-Glu) 9.8 (L-Glu→α-KG)
Thermal stability	below 50°C (pH 7.4, 10min)
Optimum temperature	45°C (α-KG→L-Glu) 45-55°C (L-Glu→α-KG)
Michaelis Constant	1.1×10^{-3}M (NH_3), 3.4×10^{-4}M (α-Ketoglutarate), 1.2×10^{-3}M (L-Glutamate), 1.4×10^{-5}M (NADPH), 1.5×10^{-5}M ($NADP^+$)
Structure	6 subunits (M.W.50,000) per mol of enzyme

Structure	8 subunits (M.W.50,000) per mol of enzyme
Inhibitors	Hg^{++}, Cd^{++}, p-chloromercuribenzoate, pyridine, 4-4'-dithiopyridine, 2,2'-dithiopyridine
Stabilizers	Ethylenediaminetetraacetic acid (EDTA)

Storage and Shipping Information

Stability	Stable at 5°C for at least 6 months