Native Microorganism Glutamate Dehydrogenase (NAD-dependent)

Cat. No. DIA-197

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 NH3, 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; glutamic dehydrogenase; glutamate dehydrogenase (NAD); glutamate oxidoreductase; glutamic acid dehydrogenase; L-glutamate dehydrogenase; NAD-dependent glutamate dehydrogenase; NAD-dependent glutamic dehydrogenase; NAD-glutamate dehydrogenase; NAD-linked glutamate dehydrogenase; NAD-linked glutamic dehydrogenase; NAD-specific glutamic dehydrogenase; NAD-specific glutamate dehydrogenase; NAD: glutamate oxidoreductase; NADH-linked glutamate dehydrogenase; L-glutamate: NAD+ oxidoreductase (deaminating); EC 1.4.1.2; GLDH

Product Information

Source	Microorganism
Appearance	White amorphous powder, lyophilized
EC Number	EC 1.4.1.2
CAS No.	9001-46-1
Molecular Weight	approx. 260 kDa
Activity	GradeⅡ 100 U/mg-solid or more
Contaminants	NAD oxidase < 1.0×10^{-2}%
Isoelectric point	5.6
pH Stability	pH 5.0-10.0 (25°C, 20hr)
Optimum pH	7.5-8.0 (α-KG→L-Glu) 9.0 (L-Glu→α-KG)
Thermal stability	below 50°C (pH 8.3, 10min)
Optimum temperature	55°C (α-KG→L-Glu) 50°C (L-Glu→α-KG)
Michaelis Constant	9.21×10^{-3}M (NH_3), 4.80×10^{-3}M (α-Ketoglutarate), 7.8×10^{-5}M (L-Glutamate), 1.29×10^{-4}M (NADH), 5.89×10^{-4}M (NAD^+)
Structure	6 subunits per mol of enzyme

Structure	6 subunits per mol of enzyme
Inhibitors	Heavy metals, PCMB, IAA

Storage and Shipping Information

Stability	Stable at-20°C for at least one year