

Native Glutamine Synthetase from Microorganism

Cat. No. DIA-411 Lot. No. (See product label)

Introduction	
Description	Glutamine synthetase (GS) (EC 6.3.1.2) is an enzyme that plays an essential role in the metabolism of nitrogen by catalyzing the condensation of glutamate and ammonia to form glutamine: Glutamate + ATP + NH3 \rightarrow Glutamine + ADP + phosphate. Glutamine Synthetase uses ammonia produced by nitrate reduction, amino acid degradation, and photorespiration. The amide group of glutamate is a nitrogen source for the synthesis of glutamine pathway metabolites.
Synonyms	Glutamine synthetase; GS; EC 6.3.1.2; Glutamate-ammonia ligase
Product Information	
Source	Microorganism
Appearance	Light yellow lyophilizate
EC Number	EC 6.3.1.2
CAS No.	9023-70-5
Molecular Weight	ca. 900 kDa
Activity	> 7 U/mg lyophilizate
Contaminants	catalase < 0.5%
lsoelectric point	6.5
pH Stability	6.5-9.5
Optimum pH	7
Thermal stability	below 40°C
Optimum temperature	60°C
Michaelis Constant	1.5 x 10^-2 M (L-glutamate) 1.3 x 10^-4 M (ammonia) 8.7 x 10^-4 M (ATP)
Structure	57 kDa (SDS-PAGE)
Specificity	L-glutamate (100), D-glutamate (0.8), NH3 (100), NH2OH (12), ATP (100), GTP (2.5)
Activators	Mg2+, Mn2+
Inhibitors	methionine sulfoximine, carbamyl phosphate
Stabilizers	Sucrose
Unit Definition	One unit (U) is defined as the amount of enzyme which produces 1 μmol of phosphate per min at 37°C and pH 7.0.

Storage and Shipping Information

Storage at -20°C