Creative Enzymes®

Native Bacillus stearothermophilus Phosphofructokinase

Cat. No. NATE-0551

Lot. No. (See product label)

Introduction

Description	Phosphofructokinase is a kinase enzyme that phosphorylates fructose 6-phosphate in glycolysis. The enzyme-catalysed transfer of a phosphoryl group from ATP is an important reaction in a wide variety of biological processes. One enzyme that utilizes this reaction is phosphofructokinase (PFK), which catalyses the phosphorylation of fructose-6-phosphate to fructose-1,6-bisphosphate, a key regulatory step in the glycolytic pathway. PFK exists as a homotetramer in bacteria and mammals (where each monomer possesses 2 similar domains) and as an octomer in yeast (where there are 4 alpha-(PFK1) and 4 beta-chains (PFK2), the latter, like the mammalian monomers, possessing 2 similar domains[3]). This protein may use the morpheein model of allosteric regulation.
Applications	Useful for enzymatic determiantion of fructose-6-phosphate
Synonyms	PFKWII; EC 2.7.1.11; PFK; phosphofructokinase; 6-phosphofructokinase; Phosphofructokinase I; Phosphohexokinase

Product Information

Source	Bacillus stearothermophilus
Appearance	White to pale yellow powder
Form	Freeze dried powder
EC Number	EC 2.7.1.11
CAS No.	9001-80-3
Molecular Weight	72 kDa (gel filtration); 35 kDa (SDS–PAGE)
Activity	> 250 U/mg
Contaminants	NADPH oxidase < 0.01%; ATPase < 0.005%
Isoelectric point	pH 5.9
pH Stability	6.0-10.0 (37°C, 60 mins)
Optimum pH	9
Thermal stability	Stable at 55°C and below (pH 8.5, 30 mins)
Michaelis Constant	D–Fructose–6–phosphate (D–F–6–P) 5.8 mM (at 37°C); ATP 0.07 mM (at 37°C)
Activators	Mg2+
Unit Definition	One unit is defined as the amount of enzyme which converts 1 µmole of fructose–6–phosphate to Fructose–1,6 –bisphosphate per minute at 37°C under the conditions specified in the assay procedure.

Storage and Shipping Information

Storage	Storage at-20°C in the presence of a desiccant is recommended.