

## 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 determination of fructose-6-phosphate

**Synonyms** PFKWII; EC 2.7.1.11; PFK; phosphofructokinase; 6-phosphofructokinase; Phosphofructokinase I; Phosphohexokinase

### Product Information

|                           |   |
|---------------------------|---|
| <b>Source</b>             | Bacillus stearothermophilus   |
| <b>Appearance</b>         | White to pale yellow powder   |
| <b>Form</b>               | Freeze dried powder   |
| <b>EC Number</b>          | EC 2.7.1.11   |
| <b>CAS No.</b>            | 9001-80-3   |
| <b>Molecular Weight</b>   | 72 kDa (gel filtration); 35 kDa (SDS-PAGE)  |
| <b>Activity</b>           | > 250 U/mg  |
| <b>Contaminants</b>       | NADPH oxidase < 0.01%; ATPase < 0.005%  |
| <b>Isoelectric point</b>  | pH 5.9  |
| <b>pH Stability</b>       | 6.0-10.0 (37°C, 60 mins)  |
| <b>Optimum pH</b>         | 9   |
| <b>Thermal stability</b>  | Stable at 55°C and below (pH 8.5, 30 mins)  |
| <b>Michaelis Constant</b> | D-Fructose-6-phosphate (D-F-6-P) 5.8 mM (at 37°C); ATP 0.07 mM (at 37°C)  |
| <b>Activators</b>         | Mg <sup>2+</sup>  |
| <b>Unit Definition</b>    | 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.