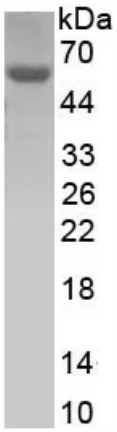
Active Glucose-6-phosphate Dehydrogenase (G6PD)

Catalog#:PEH12479

概述（Summary）

别称（Alternative Names）	Glucose-6-phosphate 1-dehydrogenase
纯度（Purity）	Greater than 90% as determined by reducing SDS-PAGE.
内毒素（Endotoxin level）	Please contact with the lab for this information
蛋白构建（Construction）	【Met1-Leu515】
Accession #	P11413
表达宿主（Host）	E.coli
种属（Species）	Homo sapiens (Human)
预测分子量（Predicted MW）	60.5 kDa
制剂（Form）	Lyophilized from a 0.2 μm filtered solution of PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
运输方式（Shipping）	The product is shipped with ice bag. Upon receipt, store it immediately at the temperature listed below.
稳定性&储存（Stability &Storage）	12 months at -20°C to -80°C in lyophilized state.6 months at -20°C to -80°C under sterile conditions after reconstitution.7-10 days at 2°C to 8°C under sterile conditions after reconstitution.Please minimize freeze-thaw cycles.
复溶（Reconstitution）	Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.
背景介绍（References）	Catalyzes the rate-limiting step of the oxidative pentose-phosphate pathway, which represents a route for the dissimilation of carbohydrates besides glycolysis. The main function of this enzyme is to provide reducing power (NADPH) and pentose phosphates for fatty acid and nucleic acid synthesis.

电泳图（SDS-PAGE image）



Greater than 90% as determined by reducing SDS-PAGE.

活性图（Bioactivity image）

Specific Activity (pmol/min/ug)=

$$\frac{\text{Adjusted } V_{max}^{*} \text{ (OD/min) x well volume (L) x } 10^{12} \text{ pmol/mol}}{\text{ext. coeff}^{**} \text{ (M}^{-1}\text{cm}^{-1}\text{) x path corr.}^{***} \text{ (cm) x amount of enzyme (ug)}}$$

*Adjusted for Substrate Blank
**Using the extinction coefficient 6220 $M^{-1}cm^{-1}$
***Using the path correction 0.320 cm

Glucose-6-phosphate dehydrogenase (G6PD) converts D-glucose 6-phosphate (G6P) into 6-phosphoglucono-δ-lactone and generate co-enzyme nicotinamide adenine dinucleotide phosphate (NADPH). G6PD is the rate-limiting enzyme of the pentose phosphate pathway that supplies reducing energy to cells by maintaining the level of NADPH, which in turn maintains the level of glutathione in these cells that helps protect the red blood cells against oxidative damage from compounds like hydrogen peroxide. More importantly, NADPH is used for biosynthesis of fatty acids or isoprenoids. G6PD is generally found as a dimer of two identical monomers. Depending on conditions, such as pH, these dimers can themselves dimerize to form tetramers. Each monomer in the complex has a substrate binding site that binds to G6P, and a catalytic coenzyme binding site that binds to NADP /NADPH using the Rossman fold. Its activity is stimulated by the substrate G6P and NADP . The activity of recombinant human G6PD was measured by its ability to dehydrogenate glucose-6-phosphate. The reaction was performed in 25 mM Tris, 50 mM NaCl, 10 mM MgCl2, pH 8.0 (Assay Buffer), initiated by addition 50 µL of various concentrations of G6PD (diluted by Assay Buffer) to 50 µl substrate mixture consists of 1 mM NADP and 1 mM G6P. The final well serves as a negative control with no G6PD, replaced with 50 µL assay buffer. Then read at a wavelength of 340 nm in kinetic mode for 5 minutes. The specific activity of recombinant human G6PD is >280 pmol/min/µg.

注意事项（Note）

For Research Use Only , Not for Diagnostic Use.