

Active Recombinant Full Length Human G6PD Protein, His-tagged

Cat. No. G6PD-710H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Active Recombinant Full Length Human G6PD Protein(1-515 aa), fused with N-terminal His tag, was expressed in E.coli.
Species	Human
Source	E.coli
ProteinLength	1-515 aa
Form	PBS, pH7.4, containing 0.01% SKL, 5%Trehalose.
Bio-activity	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

 Tel: 1-631-559-9269 1-516-512-3133

 Email: info@creative-biomart.com  Fax: 1-631-938-8127

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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.

Molecular Mass	60.5kDa
Endotoxin	<1.0EU per 1µg (determined by the LAL method).
Purity	>90%
Storage	Avoid repeated freeze/thaw cycles. Store at 2-8°C for one month. Store at -20°C for 12 months. Aliquot and store at -80°C for 12 months.
Reconstitution	Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.

GENE INFORMATION

Gene Name	G6PD glucose-6-phosphate dehydrogenase [Homo sapiens]
Official Symbol	G6PD
Synonyms	G6PD; glucose-6-phosphate dehydrogenase; glucose-6-phosphate 1-dehydrogenase; G6PD1; glucose-6-phosphate dehydrogenase, G6PD;
Gene ID	2539

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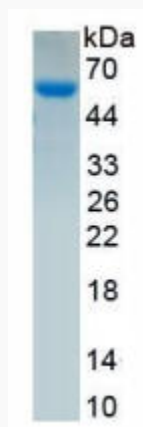
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mRNA Refseq [NM_000402](#)

Protein Refseq [NP_000393](#)

UniProt ID [P11413](#)

SDS-PAGE



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