Recombinant Human Glucose-6-Phosphate 1-Dehydrogenase

Cat. No. G6PD-192H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant G6PD protein was expressed in*E.coli*and purified by conventional chromatography techniques. MW = 55.7kDa (491 aa).
Species	Human
Source	E.coli
Description	Glucose-6-phosphate dehydrogenase (G6PD) is the rate-limiting enzyme of the pento se phosphate pathway, a metabolic pathway that supplies reducing energy to cells by maintaining the level of NADPH. G6PD converts glucose-6-phosphate into 6-phospho glucono-δ-lactone and simultaneously produce NADPH. The NADPH in turn maintain s the level of glutathione in these cells that helps protect the red blood cells against o xidative damage. G6PD deficiency cause acute hemolytic anemia.
Amino Acid Sequence	MAVTQTAQAC DLVIFGAKGD LARRKLLPSL YQLEKAGQLN PDTRIIGVGR ADWDKAAYTK VVREALETFM KETIDEGLWD TLSARLDFCN LDVNDTAAFS RLGAMLDQKN RITINYFAMP PSTFGAICKG LGEAKLNAKP ARVVMEKPLG TSLATSQEIN DQVGEYFEEC QVYRIDHYLG KETVLNLLAL RFANSLFVNN WDNRTIDHVE ITVAEEVGIE GRWGYFDKAG QMRDMIQNHL LQILCMIAMS PPSDLSADSI RDEKVKVLKS LRRIDRSNVR EKTVRGQYTA GFAQGKKVPG YLEEEGANKS SNTETFVAIR VDIDNWRWAG VPFYLRTGKR LPTKCSEVVV YFKTPELNLF KESWQDLPQN KLTIRLQPDE GVDIQVLNKV PGLDHKHNLQ ITKLDLSYSE TFNQTHLADA YERLLLETMR GIQALFVRRD EVEEAWKWV DSITEAWAMDN DAPKPYQAGT WGPVASVAMI TRDGRSWNEF E.

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Form	Liquid. In 50 mM MES 6.0, 0.1 mM PMSF, 2 mM EDTA, 0.5 mM DTT,10% glycerol.
Purity	> 90% by SDS – PAGE.
Concentration	1 mg/ml (determined by Bradford assay).
Biological activity	Specific activity is 8-10 units/ml obtained by measuring the increase of NADPH in absorbance at 340 nm resulting from the reduction of NAD or NADP. One unit oxidizes 1.0 umole D-glucose-6-phosphate to 6-phospho-D-gluconate per min in the presence of beta-NADP at pH 7.4 at 25°C.
Activity Assay	1.Prepare a 3ml reaction cocktail into a suitable container: The final concentrations are 50mM gylcylglycine, 2mM D-glucose 6-phosphate, 0.67mM beta-NADP, 10mM MgCl2.2.Equilibrate to 25°C and monitor the A340nm until the value is constant using a spectrophotometer. 3.Add 4ug of recombinant G6PD into reaction cocktail and mix immediately. 4.Record the increase in A340nm for 5 minutes.
Storagee	Can be stored at +4°C short term (1-2 weeks). For long term storage, aliquot and store at -20°C or -70°C. Avoid repeated freezing and thawing cycles.

GENE INFORMATION

Gene Name	
Synonyms	G6PD; Glucose-6-phosphate 1-dehydrogenase
Gene ID	25399
mRNA Refseq	NM_000402
Protein Refseq	NP_000393

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MIM	305900
UniProt ID	P11413
Chromosome Location	Xq28
Function	glucose-6-phosphate dehydrogenase activity; oxidoreductase activity; binding

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