ENZYMES

Glucose-6-Phosphate Dehydrogenase

ORIGIN *Leuconostoc mesenteroides*

CAT# GLPD-70-1201; EC# 1.1.1.49

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SPECIFICATIONS

Appearance	White/off white free-flowing powder	
Solution Quality	Clear, colourless solution, essentially free from particulate matter (10mg/mL in demineralised water)	
Activity	>200 U/mg powder at 25°C	
Specific Activity	>300 U/mg protein at 25°C	
Contaminants	Creatine Kinase (including AK)	<0.002%
	Hexokinase	<0.05%
	Phosphoglucomutase	<0.002%
	Phosphoglucose Isomerase	<0.002%

APPLICATION

Useful for enzymatic determination of glucose or ATP when coupled with hexokinase.

UNIT DEFINITION

One unit of activity is defined as the amount of enzyme that will catalyse the reduction of 1.0 micromole of NAD+ per minute at 25°C under the standard assay method conditions. Refer to Table 1 for guidance on factors to adjust units according to temperature of assay.

TABLE 1: TEMPERATURE FACTORS FOR UNIT CONVERSION

ASSAY TEMPERATURE (°C)	FACTOR RELATIVE TO 25°C
25°C	1.00
30°C	1.25
37°C	1.6

ASSAY PRINCIPLE

Glucose-6-Phosphate Dehydrogenase (G-6-PDH) catalyses the oxidation of glucose-6-phosphate to 6-phosphogluconolactone.

$$\text{Glucose 6-phosphate} + NAD^{+} \xrightarrow{\text{G-6-PDH}} \text{6-phosphogluconolactate} + NADH + H^{+}$$

The production of NADH in the reaction may be detected by direct measurement of the increase in absorbance observed at 340nm.

CHARACTERISTICS

Optimum pH: 7.4 to 8.0 in 0.1M Tris-HCl buffer

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