

Human Glucose-6-Phosphate Isomerase ELISA Kit ab171575

SimpleStep ELISA

[4 References](#) [4 Images](#)

Overview

Product name Human Glucose-6-Phosphate Isomerase ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
HeLa Lysate	9			2%

Inter-assay

Sample	n	Mean	SD	CV%
HeLa Lysate	3			2.6%

Sample type Serum, Cell Lysate, Tissue Homogenate

Assay type Sandwich (quantitative)

Sensitivity 61 pg/ml

Range 0.156 ng/ml - 10 ng/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	86	75% - 92%
Cell culture media	113	111% - 115%
Goat Serum	85	82% - 86%
Fetal Bovine Serum	127	121% - 134%

Assay time 1h 30m

Assay duration One step assay

Species reactivity**Reacts with:** Human**Product overview**

Human Glucose-6-phosphate isomerase ELISA kit (ab171575) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Glucose-6-phosphate isomerase protein in human cell and tissue extracts, plasma and serum samples. It uses our proprietary SimpleStep ELISA® technology. Quantitate human Glucose-6-phosphate isomerase with 61 pg/ml sensitivity.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

- Single-wash protocol reduces assay time to 90 minutes or less
- High sensitivity, specificity and reproducibility from superior antibodies
- Fully validated in biological samples
- 96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate (**ab203359**) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.

Notes

Glucose-6-phosphate isomerase (GPI) is a glycolytic enzyme. Mammalian GPI can function as a tumor-secreted cytokine and an angiogenic factor (AMF) that stimulates endothelial cell motility. GPI is also a neurotrophic factor (Neuroleukin) for spinal and sensory neurons. Phosphorylation at Ser-185 by CK2 has been shown to decrease enzymatic activity and may contribute to secretion by a non-classical secretory pathway. Defects in GPI are the cause of hemolytic anemia non-spherocytic due to glucose phosphate isomerase deficiency (HA-GPID) [MIM:613470]. It is a form of anemia in which there is no abnormal hemoglobin or spherocytosis and is caused by glucose phosphate isomerase deficiency. Severe GPI deficiency can be associated with hydrops fetalis, resulting in immediate neonatal death and neurological impairment.

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Platform

Microplate

Properties**Storage instructions**

Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Human Glucose-6-phosphate isomerase Capture Antibody	1 x 600µl
10X Human Glucose-6-phosphate isomerase Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
50X Cell Extraction Enhancer Solution (ab193971)	1 x 1ml

Components	1 x 96 tests
5X Cell Extraction Buffer PTR (ab193970)	1 x 10ml
Antibody Diluent 4B	1 x 6ml
Human Glucose-6-phosphate isomerase Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

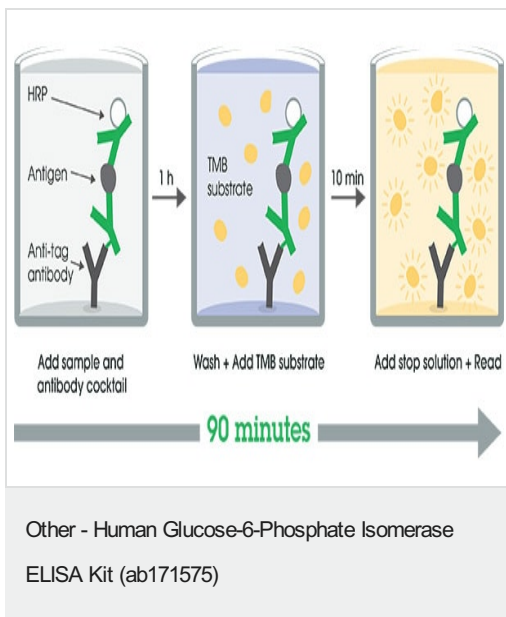
Relevance

This gene belongs to the GPI family whose members encode multifunctional phosphoglucose isomerase proteins involved in energy pathways. The protein encoded by this gene is a dimeric enzyme that catalyzes the reversible isomerization of glucose-6-phosphate and fructose-6-phosphate. The protein functions in different capacities inside and outside the cell. In the cytoplasm, the gene product is involved in glycolysis and gluconeogenesis, while outside the cell it functions as a neurotrophic factor for spinal and sensory neurons. Defects in this gene are the cause of nonspherocytic hemolytic anemia and a severe enzyme deficiency can be associated with hydrops fetalis, immediate neonatal death and neurological impairment.

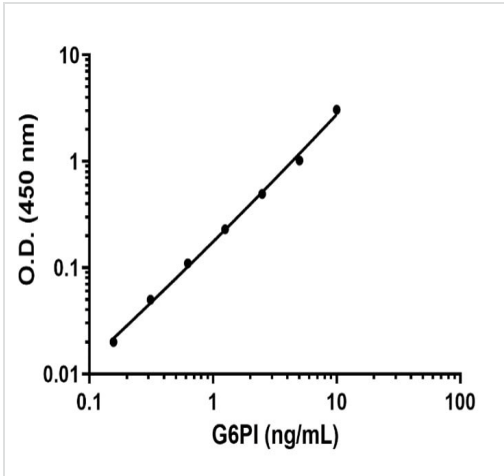
Cellular localization

Cytoplasmic and Secreted

Images

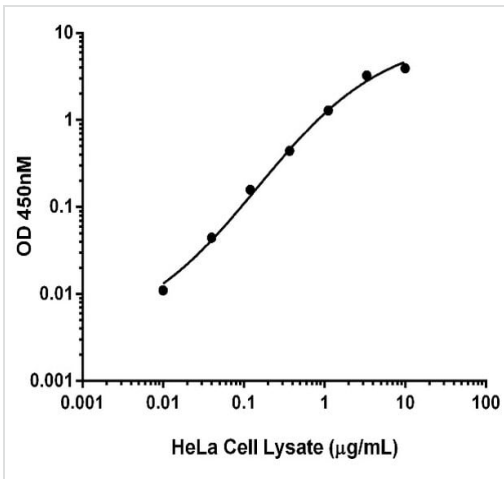


SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



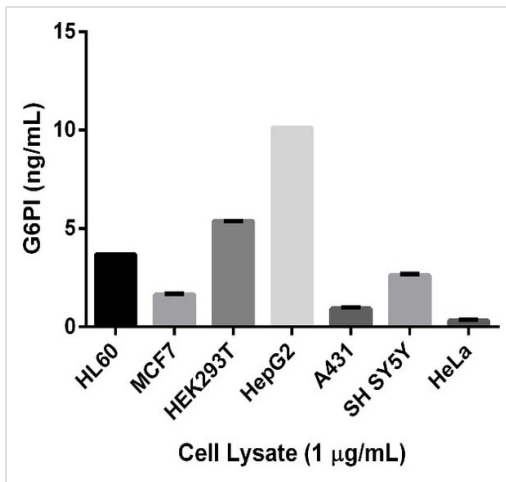
Example GPI standard curve. Background-subtracted data values (mean +/- SD) are graphed.

Example GPI standard curve.



Titration of HeLa cell lysate within the working range of the assay. Interpolated values from background subtracted data are plotted.

Titration of HeLa cell lysate within the working range of the assay.



Quantification of GPI expression in different mammalian cell lines. Interpolated values of GPI are plotted for the indicated cell lines based on a lysate concentration of 1 µg/mL.

Quantification of GPI expression in different mammalian cell lines.

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