

# G6PD (G-6): sc-373887

## BACKGROUND

Glucose-6-phosphate 1-dehydrogenase (G6PD) plays an important role in the pentose phosphate pathway. It is a member of the glucose-6-phosphate dehydrogenase family of proteins. G6PD is an ubiquitous enzyme that produces pentose sugars for nucleic acid synthesis, but is also involved in carbohydrate degradation, as it is one of the main producers of NADPH reducing power. G6PD has NADP as a co-factor and structural element. It can be found as a homodimer or homotetramer, and is primarily detected in lymphoblasts, granulocytes and sperm. Defects in G6PD can cause chronic non-spherocytic hemolytic anemia (CNSHA), especially in areas in which malaria is an epidemic. Individuals with a high level of G6PD-deficiency are at higher risk of acute hemolytic attacks.

## REFERENCES

- Persico, M.G., et al. 1986. Isolation of human glucose-6-phosphate dehydrogenase (G6PD) cDNA clones: primary structure of the protein and unusual 5' non-coding region. *Nucleic Acids Res.* 14: 2511-2522.
- Martini, G., et al. 1986. Structural analysis of the X-linked gene encoding human glucose 6-phosphate dehydrogenase. *EMBO J.* 5: 1849-1855.
- Huang, C.S., et al. 2005. Genetic factors related to unconjugated hyperbilirubinemia amongst adults. *Pharmacogenet. Genomics* 15: 43-50.

## CHROMOSOMAL LOCATION

Genetic locus: G6PD (human) mapping to Xq28; G6pdx (mouse) mapping to X A7.3.

## SOURCE

G6PD (G-6) is a mouse monoclonal antibody raised against amino acids 356-515 mapping at the C-terminus of G6PD of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

G6PD (G-6) is recommended for detection of G6PD of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for G6PD siRNA (h): sc-60667, G6PD siRNA (m): sc-60668, G6PD shRNA Plasmid (h): sc-60667-SH, G6PD shRNA Plasmid (m): sc-60668-SH, G6PD shRNA (h) Lentiviral Particles: sc-60667-V and G6PD shRNA (m) Lentiviral Particles: sc-60668-V.

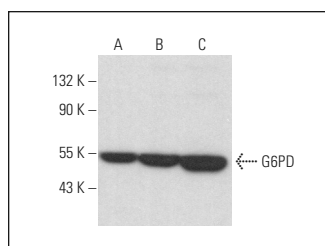
Molecular Weight of G6PD: 58 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, DU 145 cell lysate: sc-2268 or MDA-MB-231 cell lysate: sc-2232.

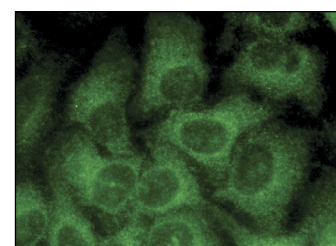
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



G6PD (G-6): sc-373887. Western blot analysis of G6PD expression in MCF7 (A), MDA-MB-231 (B) and DU 145 (C) whole cell lysates.



G6PD (G-6): sc-373887. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Shan, G., et al. 2015. Increase in blood glutathione and erythrocyte proteins related to glutathione generation, reduction and utilization in African-American old women with diabetes. *J. Sci. Technol. Environ.* 5: 3000251.
- Kudinov, A.E., et al. 2016. Musashi-2 (MSI2) supports TGF-β signaling and inhibits claudins to promote non-small cell lung cancer (NSCLC) metastasis. *Proc. Natl. Acad. Sci. USA* 113: 6955-6960.
- Kim, N.H., et al. 2017. Snail reprograms glucose metabolism by repressing phosphofructokinase PFKP allowing cancer cell survival under metabolic stress. *Nat. Commun.* 8: 14374.
- Liu, C.L., et al. 2020. Targeting the pentose phosphate pathway increases reactive oxygen species and induces apoptosis in thyroid cancer cells. *Mol. Cell. Endocrinol.* 499: 110595.
- Yang, J.H., et al. 2020. Snail augments fatty acid oxidation by suppression of mitochondrial ACC2 during cancer progression. *Life Sci. Alliance* 3: e202000683.
- Barbiera, A., et al. 2022. Taurine administration counteracts aging-associated impingement of skeletal muscle regeneration by reducing inflammation and oxidative stress. *Antioxidants* 11: 1016.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.