SANTA CRUZ BIOTECHNOLOGY, INC.

G6PD (G-6): sc-373887

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 a 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

1. 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.
2. Martini, G., et al. 1986. Structural analysis of the X-linked gene encoding human glucose 6-phosphate dehydrogenase. EMBO J. 5: 1849-1855.
3. 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_{2a} 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.

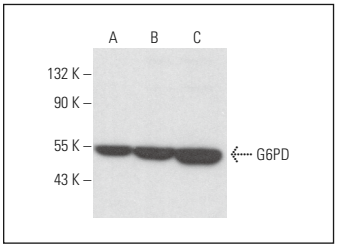
Molecular Weight of G6PD: 58 kDa.

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

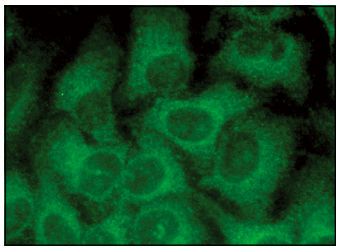
STORAGE

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

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

1. 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.
2. 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.
3. 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.
4. 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.
5. Yang, J.H., et al. 2020. Snail augments fatty acid oxidation by suppression of mitochondrial ACC2 during cancer progression. Life Sci. Alliance 3: e202000683.
6. Barbiera, A., et al. 2022. Taurine administration counteracts aging-associated impingement of skeletal muscle regeneration by reducing inflammation and oxidative stress. Antioxidants 11: 1016.
7. Fang, J., et al. 2022. RRx-001 exerts neuroprotection against LPS-induced microglia activation and neuroinflammation through disturbing the TLR4 pathway. Front. Pharmacol. 13: 889383.
8. Zhang, X., et al. 2024. Identification of hub glycolysis-related genes in acute myocardial infarction and their correlation with immune infiltration using bioinformatics analysis. BMC Cardiovasc. Disord. 24: 349.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.