SANTA CRUZ BIOTECHNOLOGY, INC.

G6PD (N-12): sc-46971

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 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 cofactor 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. Kayser, L. and Thomsen, J. 2005. Glucose-6-phosphate dehydrogenase activity in monolayer cultures of thyroid epithelial cells: TSH and inhibition of nitrogen oxide synthase affect the enzyme activity and the oxygen sensitivity of the histochemical assay. Acta Histochem. 107: 31-41.
4. Huang, C.S., et al. 2005. Genetic factors related to unconjugated hyperbilirubinemia amongst adults. Pharmacogenet. Genomics 15: 43-50.
5. Kotaka, M., et al. 2005. Structural studies of glucose-6-phosphate and $NADP^+$ binding to human glucose-6-phosphate dehydrogenase. Acta Crystallogr. D Biol. Crystallogr. 61: 495-504.

CHROMOSOMAL LOCATION

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

SOURCE

G6PD (N-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of G6PD of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-46971 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

G6PD (N-12) is recommended for detection of G6PD of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

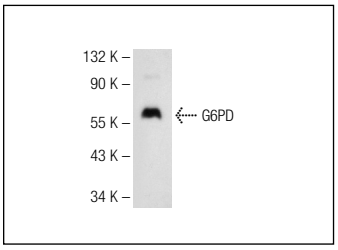
G6PD (N-12) is also recommended for detection of G6PD in additional species, including equine, canine, bovine and porcine.

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.

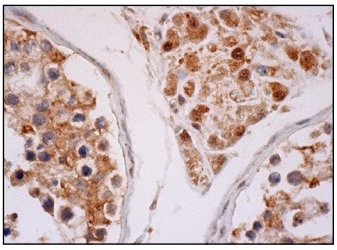
Molecular Weight of G6PD: 58 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

DATA



G6PD (N-12): sc-46971. Western blot analysis of G6PD expression in 293T whole cell lysate.



G6PD (N-12): sc-46971. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of cells in seminiferous ducts and cytoplasmic and nuclear staining of Leydig cells.

SELECT PRODUCT CITATIONS

1. Rada, P., et al. 2011. SCF/β-TrCP promotes glycogen synthase kinase 3-dependent degradation of the Nrf2 transcription factor in a Keap1-independent manner. Mol. Cell. Biol. 31: 1121-1133.

PROTOCOLS

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