

PGD (37.1Y): sc-100316



The Power to Question

BACKGROUND

PGD (phosphogluconate dehydrogenase), also referred to as 6PGD, is a 483 amino acid enzyme that is involved in the pentose phosphate shunt. Pentose is required for nucleic acid biosynthesis and the pentose phosphate cycle is a major source of NADPH. As the second dehydrogenase in the pentose phosphate cycle, PGD catalyzes the oxidative decarboxylation of PGD to ribulose 5-phosphate, following the release of CO₂ and the reduction of NADP. PGD deficiency increases the level of erythrocyte pyruvate kinase (PK) activity and reduces glutathione synthetase (GSH), resulting in hemolysis. Defects in PGD are generally asymptomatic and are inherited in an autosomal dominant fashion. Catalytic active regions of PGD, such as those forming the substrate and coenzyme binding sites, are highly conserved in most species.

REFERENCES

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- SWISS-PROT/TrEMBL (P52209). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>
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- Hanau, S., et al. 2004. 6-phosphogluconate dehydrogenase: a target for drugs in African trypanosomes. *Curr. Med. Chem.* 11: 2639-2650.
- Goulielmos, G.N., et al. 2004. Functional constraints of 6-phosphogluconate dehydrogenase (6-PGD) based on sequence and structural information. *J. Mol. Evol.* 59: 358-371.

CHROMOSOMAL LOCATION

Genetic locus: PGD (human) mapping to 1p36.22.

SOURCE

PGD (37.1Y) is a mouse monoclonal antibody raised against recombinant PGD of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

PGD (37.1Y) is recommended for detection of PGD of 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).

Suitable for use as control antibody for PGD siRNA (h): sc-78779, PGD shRNA Plasmid (h): sc-78779-SH and PGD shRNA (h) Lentiviral Particles: sc-78779-V.

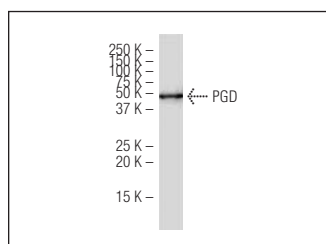
Molecular Weight of PGD: 52 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

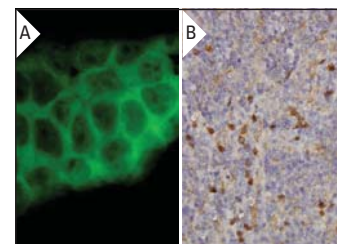
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

DATA



PGD (37.1Y): sc-100316. Western blot analysis of PGD expression in A-431 whole cell lysate.



PGD (37.1Y): sc-100316. Immunofluorescence staining of paraformaldehyde-fixed A-431 cells showing cytoplasmic localization (A) and immunoperoxidase staining of formalin-fixed, paraffin-embedded human lymph node tissue showing nuclear and cytoplasmic localization (B).

STORAGE

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

PROTOCOLS

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