

BPGM (F-2): sc-376578

BACKGROUND

BPGM (2,3-bisphosphoglycerate mutase) is a 259 amino acid protein that belongs to the phosphoglycerate mutase family and exists as a homodimer that plays a crucial role in the regulation of hemoglobin oxygen. Specifically, BPGM catalyzes the conversion of 3-phospho-D-glyceroyl phosphate to 2,3-bisphospho-D-glycerate (2,3-BPG), a reaction that is essential for controlling the concentration of 2,3-BPG within the cell. The gene encoding BPGM maps to human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in some of the genes localized to chromosome 7 have been linked to osteogenesis imperfecta, Williams-Beuren syndrome, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome.

REFERENCES

- Haggarty, N.W., et al. 1983. The complete amino acid sequence of human erythrocyte diphosphoglycerate mutase. *EMBO J.* 2: 1213-1220.
- Cohen-Solal, M., et al. 1987. Molecular cloning of the human 2,3-bisphosphoglycerate mutase cDNA and revised amino acid sequence. *Biochim. Acta* 46: S126-S130.
- Craescu, C.T., et al. 1992. Structural modeling of the human erythrocyte bisphosphoglycerate mutase. *Biochimie* 74: 519-526.
- Stafforini, D.M., et al. 1993. The platelet-activating factor acetylhydrolase from human erythrocytes. Purification and properties. *J. Biol. Chem.* 268: 3857-3865.
- Fokina, K.V., et al. 1997. A study on the complexes between human erythrocyte enzymes participating in the conversions of 1,3-diphosphoglycerate. *Arch. Biochem. Biophys.* 345: 185-192.
- Fujita, T., et al. 1998. Human erythrocyte bisphosphoglycerate mutase: inactivation by glycation *in vivo* and *in vitro*. *J. Biochem.* 124: 1237-1244.
- Wang, Y., et al. 2004. Crystal structure of human bisphosphoglycerate mutase. *J. Biol. Chem.* 279: 39132-39138.

CHROMOSOMAL LOCATION

Genetic locus: BPGM (human) mapping to 7q33; Bpgm (mouse) mapping to 6 B1.

SOURCE

BPGM (F-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 89-123 within an internal region of BPGM of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376578 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

BPGM (F-2) is recommended for detection of BPGM 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).

BPGM (F-2) is also recommended for detection of BPGM in additional species, including equine, canine and bovine.

Suitable for use as control antibody for BPGM siRNA (h): sc-72656, BPGM siRNA (m): sc-72657, BPGM shRNA Plasmid (h): sc-72656-SH, BPGM shRNA Plasmid (m): sc-72657-SH, BPGM shRNA (h) Lentiviral Particles: sc-72656-V and BPGM shRNA (m) Lentiviral Particles: sc-72657-V.

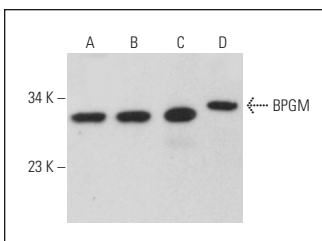
Molecular Weight of BPGM: 30 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, NIH/3T3 whole cell lysate: sc-2210 or A-431 whole cell lysate: sc-2201.

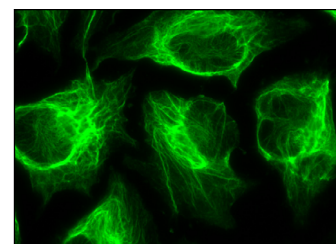
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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



BPGM (F-2): sc-376578. Western blot analysis of BPGM expression in K-562 (A), A-431 (B), NIH/3T3 (C) and C6 (D) whole cell lysates.



BPGM (F-2): sc-376578. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoskeletal localization.

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.