SANTA CRUZ BIOTECHNOLOGY, INC.

BPGM (B-11): sc-393964

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

1. Haggarty, N.W., et al. 1983. The complete amino acid sequence of human erythrocyte diphosphoglycerate mutase. EMBO J. 2: 1213-1220.
2. Cohen-Solal, M., et al. 1987. Molecular cloning of the human 2,3-bisphosphoglycerate mutase cDNA and revised amino acid sequence. Biomed. Biochim. Acta 46: S126-S130.
3. Craescu, C.T., et al. 1992. Structural modeling of the human erythrocyte bisphosphoglycerate mutase. Biochimie 74: 519-526.
4. Stafforini, D.M., et al. 1993. The platelet-activating factor acetylhydrolase from human erythrocytes. Purification and properties. J. Biol. Chem. 268: 3857-3865.
5. 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.
6. Fujita, T., et al. 1998. Human erythrocyte bisphosphoglycerate mutase: inactivation by glycation *in vivo* and *in vitro*. J. Biochem. 124: 1237-1244.
7. 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 (B-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 90-119 within an internal region of BPGM of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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-393964 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

BPGM (B-11) 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 (B-11) 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.

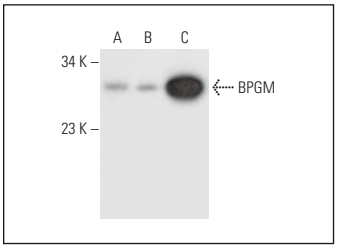
Molecular Weight of BPGM: 30 kDa.

Positive Controls: human placenta extract: sc-363772, A-431 whole cell lysate: sc-2201 or K-562 whole cell lysate: sc-2203.

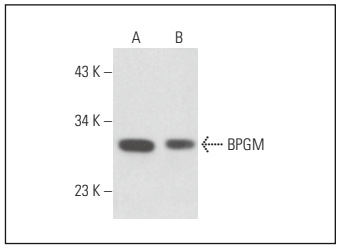
RECOMMENDED SUPPORT REAGENTS

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



BPGM (B-11): sc-393964. Western blot analysis of BPGM expression in K-562 (**A**) and A-431 (**B**) whole cell lysates and human placenta tissue extract (**C**).



BPGM (B-11): sc-393964. Western blot analysis of BPGM expression in RT-4 (**A**) and NIH/3T3 (**B**) whole cell lysates.

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.