PRODUCT INFORMATION

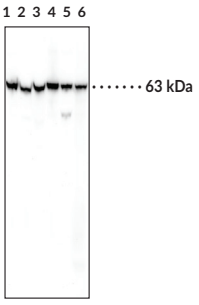
Glucose-6-phosphate Isomerase Monoclonal Antibody (Clone 5B6)

Item No. 30881

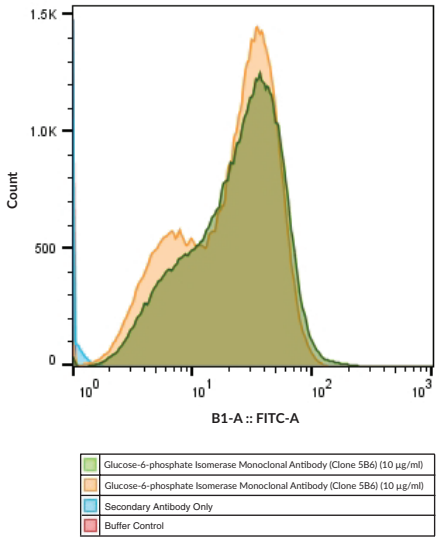
Overview and Properties

Contents:	This vial contains 100 µg of protein G-affinity purified monoclonal antibody.
Synonyms:	GPI, PGI, PHI, Phosphoglucose Isomerase, Phosphohexose Isomerase
Immunogen:	Recombinant human glucose-6-phosphate isomerase protein
Species Reactivity:	(+) Human
Uniprot No.:	P06744
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone:	5B6
Host:	Mouse
Isotype:	IgG1
Applications:	ELISA, Flow Cytometry (FC), and Western blot (WB); the recommended starting dilution for ELISA and WB is 1:500-1,000 and 1:200-500 for FC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: A549 cell lysate (50 µg)
Lane 2: A431 cell lysate (50 µg)
Lane 3: MCF-7 cell lysate (50 µg)
Lane 4: Human cerebellum homogenate (25 µg)
Lane 5: Human skeletal muscle homogenate (25 µg)
Lane 6: Human spleen homogenate (25 µg)



A549 cells were fixed with 3.7% formaldehyde for 15 minutes on ice and blocked and permeabilized with PBS containing 5% FBS and 0.1% saponin for 1 hour at room temperature. Glucose-6-phosphate Isomerase Monoclonal Antibody (Clone 5B6) was used at the indicated concentrations. Goat Anti-Mouse (IgG+IgM) FITC (Item No. 10006617) was used as the secondary antibody at a dilution of 1:200.

Note: Due to the parameters set on this flow cytometry, both controls (secondary antibody only and buffer control) are mostly out of frame (to the left) of this graph.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Glucose-6-phosphate isomerase (GPI) is a glycolytic enzyme that catalyzes the conversion of D-glucose-6-phosphate (Item No. 20376) to D-fructose-6-phosphate.[1,2] It exists as a dimer where each monomer is composed of a large and small globular domain, which form a cleft that contains the catalytic active site, and a C-terminal tail.[2,3] GPI is ubiquitously expressed and localized to the cytoplasm.[1,2] It also functions as a neurotrophic growth factor and has a role in immunoglobulin synthesis.[2] GPI is an autoantigen in rheumatoid arthritis (RA).[4] Immunization with recombinant human GPI induces inflammatory cell infiltration, cartilage destruction, and bone erosion in the inflamed joints of mice, an effect that is reduced in *Padi4* knockout mice, which lack peptidyl arginine deiminase 4 (PAD4), an enzyme involved in protein citrullination.[5] Cayman's Glucose-6-phosphate Isomerase Monoclonal Antibody (Clone 5B6) can be used for ELISA, flow cytometry (FC), and Western blot (WB) applications. The antibody recognizes glucose-6-phosphate isomerase at 63 kDa from human samples.

References

1. Schaller, M., Burton, D.R., and Ditzel, H.J. Autoantibodies to GPI in rheumatoid arthritis: Linkage between an animal model and human disease. *Nat. Immunol.* **2(8)**, 746-753 (2001).
2. Sun, Y.-J., Chou, C.-C., Chen, W.-S., *et al*. The crystal structure of a multifunctional protein: Phosphoglucose isomerase/autocrine motility factor/neuroleukin. *Proc. Natl. Acad. Sci. USA* **96(10)**, 5412-5417 (1999).
3. Cordeiro, A.T., Michels, P.A.M., Delboni, L.F., *et al*. The crystal structure of glucose-6-phosphate isomerase from *Leishmania mexicana* reveals novel active site features. *Eur. J. Biochem.* **271(13)**, 2765-2772 (2004).
4. Umeda, N., Matsumoto, I., Ito, I., *et al*. Anti-citrullinated glucose-6-phosphate isomerase peptide antibodies in patients with rheumatoid arthritis are associated with *HLA-DRB*$_1$ shared epitope alleles and disease activity. *Clin. Exp. Immunol.* **172(1)**, 44-53 (2013).
5. Seri, Y., Shoda, H., Suzuki, A., *et al*. Peptidylarginine deiminase type 4 deficiency reduced arthritis severity in a glucose-6-phosphate isomerase-induced arthritis model. *Sci. Rep.* **5**, 13041 (2015).

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