Product Datasheet

PGAM1 Antibody - BSA Free
NBP1-49532

Unit Size: 0.1 ml

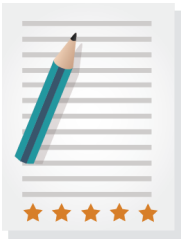
Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

www.novusbio.com technical@novusbio.com

Reviews: 1 Publications: 8

Protocols, Publications, Related Products, Reviews, Research Tools and Images at:
www.novusbio.com/NBP1-49532

Updated 9/9/2025 v.20.1



NBP1-49532

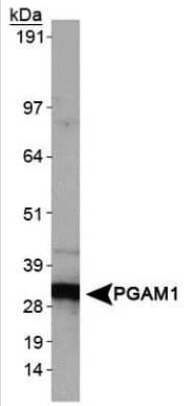
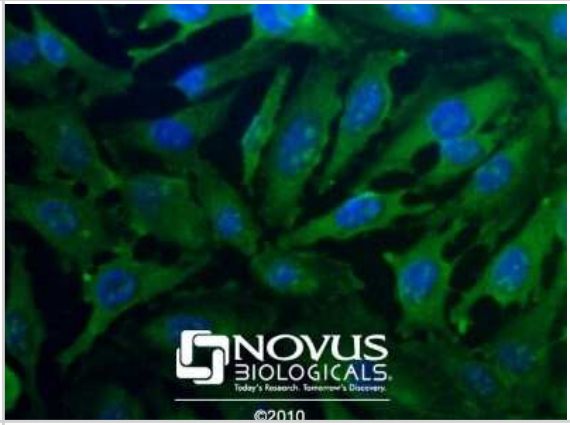
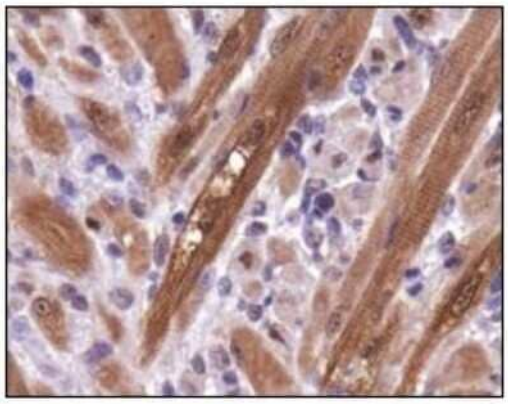
PGAM1 Antibody - BSA Free

Product Information	
Unit Size	0.1 ml
Concentration	1 mg/ml
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.05% Sodium Azide
Isotype	IgG
Purity	Immunogen affinity purified
Buffer	PBS and 30% Glycerol

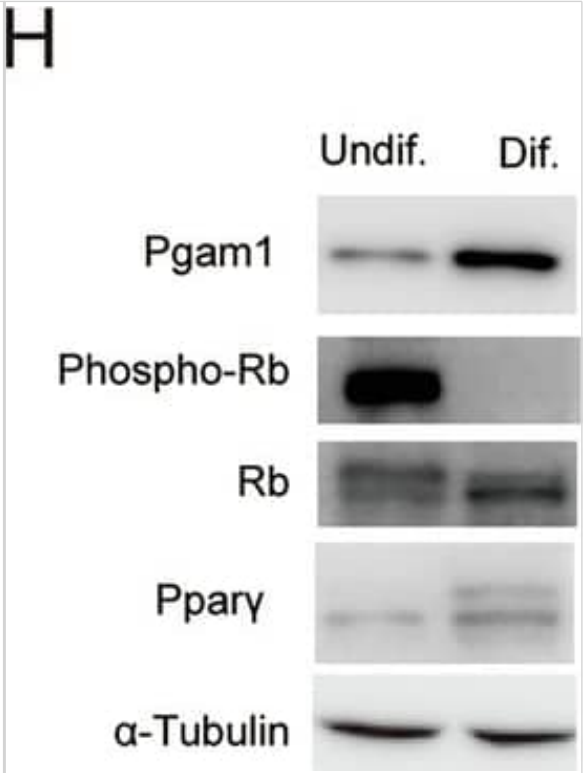
Product Description	
Description	Novus Biologicals Rabbit PGAM1 Antibody - BSA Free (NBP1-49532) is a polyclonal antibody validated for use in IHC, WB, ICC/IF and Simple Western. Anti-PGAM1 Antibody: Cited in 6 publications. All Novus Biologicals antibodies are covered by our 100% guarantee.
Host	Rabbit
Gene ID	5223
Gene Symbol	PGAM1
Species	Human, Mouse
Immunogen	A synthetic peptide made to a C-terminal portion of the human PGAM1 protein (between residues 200-254) [UniProt P18669]

Product Application Details	
Applications	Western Blot, Simple Western, Immunohistochemistry-Paraffin, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Knockdown Validated
Recommended Dilutions	Western Blot 0.5ug/ml, Simple Western 1:400, Immunohistochemistry 1:300, Immunocytochemistry/ Immunofluorescence 1:50, Immunohistochemistry-Paraffin 1:300, Knockdown Validated reported in scientific literature (PMID 28122957)
Application Notes	This PGAM1 antibody may be used in Western blot, Immunohistochemistry paraffin embedded sections and Immunocytochemistry/Immunofluorescence. In Simple Western only 10 - 15 uL of the recommended dilution is used per data point. See Simple Western Antibody Database for Simple Western validation: Tested in Jurkat lysate 0.05 mg/mL, separated by Size, antibody dilution of 1:400, apparent MW was 35 kDa. Separated by Size-Wes, Sally Sue/Peggy Sue.

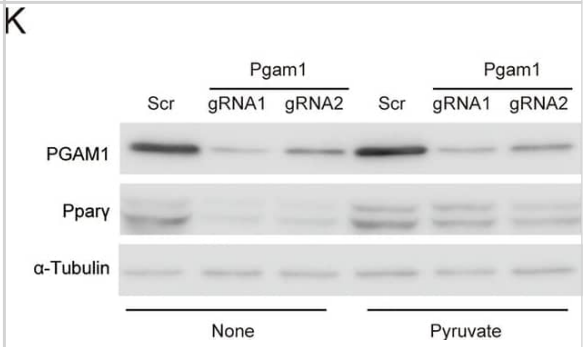
Images

Western Blot: PGAM1 Antibody [NBP1-49532] - Analysis of PGAM1 in Jurkat whole cell extracts	
Immunocytochemistry/Immunofluorescence: PGAM1 Antibody [NBP1-49532] - Analysis of PGAM1 in HeLa cells using NBP1-49532. Nuclei (Blue) are counterstained using Hoechst 33258.	
Immunohistochemistry: PGAM1 Antibody [NBP1-49532] - Analysis of PGAM1 in mouse tongue.	
Simple Western: PGAM1 Antibody [NBP1-49532] - Simple Western lane view shows a specific band for PGAM1 in 0.05 mg/ml of Jurkat lysate. This experiment was performed under reducing conditions using the 12-230 kDa separation system.	

Induction of PGAM is essential for myogenic and adipogenic differentiation.A Heatmap of genes related to glycolysis in a time course microarray sampled during differentiation in C2C12 cells. B IB of the indicated proteins in differentiated and undifferentiated C2C12 cells. C mRNA expression levels of the indicated genes in C2C12 cells expressing scramble or Rb shRNA. C2C12 cells were differentiated under low serum conditions for 7 days. Tukey's HSD test was performed. ****P < 0.0001 and *P < 0.05. D IB of the indicated proteins in C2C12 cells expressing scramble or Pgam2 shRNA those with or without exposure to stimuli to induce myogenic differentiation. E Immunocytochemistry of myosin heavy chain (MHC) in C2C12 cells expressing scramble or Pgam2 shRNA and exposed to stimuli to induce myogenic differentiation for 7 days. F mRNA expression levels of the indicated genes in C2C12 cells expressing scramble or Rb shRNA. Cells were differentiated in the presence or absence of pyruvate for 7 days. Tukey's HSD test was performed. **P < 0.01, *P < 0.05 and n.s.; not significant. G RNA-seq heatmap of genes related to glycolysis during adipogenic differentiation in 3T3L1 cells. H IB of the indicated proteins in differentiated and undifferentiated 3T3L1 cells. I IB of the indicated proteins in PGAM1-depleted 3T3L1 after exposure to stimuli to induce adipogenic differentiation. J Oil red staining of 3T3L1 cells transduced with the indicated gRNA and treated with vehicle or 4 mM pyruvate under the culture conditions to induce adipogenic differentiation. K IB of the indicated proteins in PGAM1-depleted 3T3L1 cells after exposure to stimuli to induce adipogenic differentiation in the presence or absence of 4 mM pyruvate. All data are shown as the mean +/- SEM. Image collected and cropped by CiteAb from the following open publication (https://www.nature.com/articles/s41419-025-07850-3), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Induction of PGAM is essential for myogenic and adipogenic differentiation.A Heatmap of genes related to glycolysis in a time course microarray sampled during differentiation in C2C12 cells. B IB of the indicated proteins in differentiated and undifferentiated C2C12 cells. C mRNA expression levels of the indicated genes in C2C12 cells expressing scramble or Rb shRNA. C2C12 cells were differentiated under low serum conditions for 7 days. Tukey's HSD test was performed. ****P < 0.0001 and *P < 0.05. D IB of the indicated proteins in C2C12 cells expressing scramble or Pgam2 shRNA those with or without exposure to stimuli to induce myogenic differentiation. E Immunocytochemistry of myosin heavy chain (MHC) in C2C12 cells expressing scramble or Pgam2 shRNA and exposed to stimuli to induce myogenic differentiation for 7 days. F mRNA expression levels of the indicated genes in C2C12 cells expressing scramble or Rb shRNA. Cells were differentiated in the presence or absence of pyruvate for 7 days. Tukey's HSD test was performed. **P < 0.01, *P < 0.05 and n.s.; not significant. G RNA-seq heatmap of genes related to glycolysis during adipogenic differentiation in 3T3L1 cells. H IB of the indicated proteins in differentiated and undifferentiated 3T3L1 cells. I IB of the indicated proteins in PGAM1-depleted 3T3L1 after exposure to stimuli to induce adipogenic differentiation. J Oil red staining of 3T3L1 cells transduced with the indicated gRNA and treated with vehicle or 4 mM pyruvate under the culture conditions to induce adipogenic differentiation. K IB of the indicated proteins in PGAM1-depleted 3T3L1 cells after exposure to stimuli to induce adipogenic differentiation in the presence or absence of 4 mM pyruvate. All data are shown as the mean +/- SEM. Image collected and cropped by CiteAb from the following open publication (https://www.nature.com/articles/s41419-025-07850-3), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Kohno S, Okahashi N, Wan Y et al. RB1 controls differentiation through positive regulation of phosphoglycerate mutases Cell Death & Disease 2025-07-24 [PMID: 40707487]

di Domenico F The Role of Ankef1 in Male Fertility Thesis 2021-01-01 (WB)

Sikorski K, Mehta A et al. A high-throughput pipeline for validation of antibodies. Nat Methods 2018-01-11 [PMID: 30377371] (Human)

Details:
Antibody validation based on denaturing gel electrophoresis of biotinylated cell lysates (PAGE) followed by mass spectrometry (MS) and antibody array analysis (MAP).

Alam H, Tang M, Maitituoheti M et al. KMT2D Deficiency Impairs Super-Enhancers to Confer a Glycolytic Vulnerability in Lung Cancer Cancer Cell 2020-04-13 [PMID: 32243837]

Qu J, Sun W, Zhong J et al. Phosphoglycerate mutase 1 regulates dNTP pool and promotes homologous recombination repair in cancer cells J Cell Biol. 2016-07-03 [PMID: 28122957] (ICC/IF, WB, KD, Human)

Sun Qian, Li Shuzhan, Wang Yanan et al. Phosphoglyceric acid mutase-1 contributes to oncogenic mTOR-mediated tumor growth and confers non-small cell lung cancer patients with poor prognosis. Cell Death and Differentiation 2018-01-01 [PMID: 29362480] (IF/IHC, Human)

Qu J, Sun W, Zhong J et al. Correction: Phosphoglycerate mutase 1 regulates dNTP pool and promotes homologous recombination repair in cancer cells J. Cell Biol. 2017-07-24 [PMID: 28739677] (WB, Human)

Details:
Novus' PGAM1 antibbody was used to look at PGAM1 levels in HeLa cells that were either treated with 100uM dNTPs or not treated

Liu Y, Cao Y, Zhang W et al. A small-molecule inhibitor of glucose transporter 1 downregulates glycolysis, induces cell-cycle arrest, and inhibits cancer cell growth in vitro and in vivo Mol Cancer Ther 2012-08-01 [PMID: 22689530] (WB, Human)

Procedures

Western Blot protocol specific for PGAM1 Antibody (NBP1-49533)
PGAM1 Antibody:
Western Blot Protocol
1. Perform SDS-PAGE (4-12% MOPS) on samples to be analyzed, loading 40 ug of total protein per lane.
2. Transfer proteins to Nitrocellulose according to the instructions provided by the manufacturer of the transfer apparatus.
3. Rinse membrane with dH2O and then stain the blot using Ponceau S for 1-2 minutes to access the transfer of proteins onto the nitrocellulose membrane. Rinse the blot in water to remove excess stain and mark the lane locations and locations of molecular weight markers using a pencil.
4. Rinse the blot in TBS for approximately 5 minutes.
5. Block the membrane using 5% NFDM + 1% BSA in TBS + Tween, 1 hour at RT.
6. Rinse the membrane in dH2O and then wash the membrane in wash buffer [TBS + 0.1% Tween] 3 times for 10 minutes each.
7. Dilute the rabbit anti-PGAM1 primary antibody (NBP1-49532) in blocking buffer and incubate 1 hour at room temperature.
8. Rinse the membrane in dH2O and then wash the membrane in wash buffer [TBS + 0.1% Tween] 3 times for 10 minutes each.
9. Apply the diluted rabbit-IgG HRP-conjugated secondary antibody in blocking buffer (as per manufacturers instructions) and incubate 1 hour at room temperature.
10. Wash the blot in wash buffer [TBS + 0.1% Tween] 3 times for 10 minutes each (this step can be repeated as required to reduce background).
11. Apply the detection reagent of choice in accordance with the manufacturers instructions (Pierce ECL).

**Note: Tween-20 can be added to the blocking or antibody dilution buffer at a final concentration of 0.05-0.2%, provided it does not interfere with antibody-antigen binding.

Immunocytochemistry/Immunofluorescence protocol for PGAM1 Antibody (NBP1-49532)
PGAM1 Antibody:
Immunocytochemistry Protocol

Culture cells to appropriate density in 35mm culture dishes or 6-well plates.

1. Pull off culture medium with and add 10% formalin to the dish. Fix at room temperature for 30 minutes..
2. Take off the formalin and add ice cold methanol (kept in well sealed bottle in -20C). Incubate for 5-10 minutes.
3. Take off methanol and add PBS (You can add 0.1% Tween-20 to PBS used here and all subsequent steps), be sure to not let the specimen dry out. Wash 3 times 10 minutes before proceeding to blocking step.
4. To block nonspecific antibody binding incubate in 10% normal goat serum for a minimum of 1 hr at room temp. Cells can also block overnight at 4C for this step.
5. Add primary antibody at appropriate dilution and incubate at room temp for 2 hrs or overnight at room temp.
6. Remove primary antibody and replace with PBS. Wash 3 x 10 min in PBS.
7. Add secondary antibody at appropriate dilution. Incubate for 1 hr at room temperature
8. Remove antibody and replace with PBS, wash 1 x 10 min in PBS. Add Hoechst 33258 to PBS at 1:25,0000 and incubate for 10 min. Wash a third time with PBS for 10 min (total of 3X10min PBS washes).
9. Cells can be viewed directly after washing. The plates can also be stored in PBS containing Azide and parafilmed. Cells can also be coverslipped using Fluoromount. If storing coverslip be sure to seal the edges with clear nail polish.

*The above information is only intended as a guide. The researcher should determine what protocol best meets their needs. Please follow safe laboratory procedures.

Immunohistochemistry-Paraffin protocol for PGAM1 Antibody (NBP1-49532)
PGAM1 Antibody:
Immunohistochemistry-paraffin embedded sections

Antigen Unmasking:
Bring slides to a boil in 10 mM sodium citrate buffer pH 6.0 then maintain at a sub-boiling temperature for 10 minutes. Cool slides on bench top for 30 minutes.

Staining:
1. Wash sections in dH2O three times for 5 minutes each.
2. Wash section in wash buffer (1X PBS/0.1% Tween-20 (1X PBST)) for 5 minutes.
3. Block each section with 100-400 ul blocking solution (1X PBST, 5% goat serum) for 1 hour at room temperature.
4. Remove blocking solution and add 100-400 ul primary antibody diluted in 1X PBST, 5% goat serum to each section. Incubate overnight at 4C.
5. Remove antibody solution and wash sections in wash buffer three times for 5 minutes each.
6. Add 100-400 ul biotinylated secondary antibody, diluted in 1X PBST, 5% goat serum. Incubate 30 minutes at room temperature.
7. Remove secondary antibody solution and wash sections three times with wash buffer for 5 minutes each.
8. Add 100-400 ul Striptavidin-HRP reagent to each section and incubate for 30 minutes at room temperature.
9. Wash sections three times in wash buffer for 5 minutes each.
10. Add 100-400 ul DAB substrate to each section and monitor staining closely.
11. As soon as the sections develop, immerse slides in dH2O.
12. Counterstain sections in hematoxylin.
13. Wash sections in dH2O two times for 5 minutes each.
14. Dehydrate sections.
15. Mount coverslips.

Novus Biologicals USA
10730 E. Briarwood Avenue
Centennial, CO 80112
USA
Phone: 303.730.1950
Toll Free: 1.888.506.6887
Fax: 303.730.1966
nb-customerservice@bio-techne.com

Bio-Techne Canada
21 Canmotor Ave
Toronto, ON M8Z 4E6
Canada
Phone: 905.827.6400
Toll Free: 855.668.8722
Fax: 905.827.6402
canada.inquires@bio-techne.com

Bio-Techne Ltd
19 Barton Lane
Abingdon Science Park
Abingdon, OX14 3NB, United Kingdom
Phone: (44) (0) 1235 529449
Free Phone: 0800 37 34 15
Fax: (44) (0) 1235 533420
info.EMEA@bio-techne.com

General Contact Information
www.novusbio.com
Technical Support: nb-technical@bio-techne.com
Orders: nb-customerservice@bio-techne.com
General: novus@novusbio.com

Products Related to NBP1-49532

NB800-PC1	HeLa Whole Cell Lysate
NBP2-33376H	Blue Marker Antibody (6F4-F6) [HRP]
HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control

Limitations

This product is for research use only and is not approved for use in humans or in clinical diagnosis. Primary Antibodies are guaranteed for 1 year from date of receipt.

For more information on our 100% guarantee, please visit www.novusbio.com/guarantee

Earn gift cards/discounts by submitting a review: www.novusbio.com/reviews/submit/NBP1-49532

Earn gift cards/discounts by submitting a publication using this product: www.novusbio.com/publications