**Overview**

**Product name**  
Anti-Glucose 6 Phosphate Dehydrogenase antibody [EPR20668]  

**Description**  
Rabbit monoclonal [EPR20668] to Glucose 6 Phosphate Dehydrogenase

**Host species**  
Rabbit

**Tested applications**  
Suitable for: ICC/IF, Flow Cyt, IHC-P, WB, IP

**Species reactivity**  
Reacts with: Mouse, Rat, Human

**Immunogen**  
Recombinant fragment within Human Glucose 6 Phosphate Dehydrogenase aa 1-300. The exact sequence is proprietary.  
Database link: P11413

**Positive control**  
WB: Rat brain, liver and spleen lysates; Mouse spleen and testis lysates; HeLa, C2C12, MCF7, RAW 264.7, C6, NIH/3T3 and PC-12 whole cell lysates. IHC-P: Human liver, hepatocellular carcinoma and gastric adenocarcinoma tissue; Mouse liver tissue; Rat liver tissue. ICC/IF: HeLa and MCF7 cells. Flow Cyt: HeLa cells. IP: HeLa whole cell lysate.

**General notes**  
This product is a recombinant monoclonal antibody, which offers several advantages including:  
- High batch-to-batch consistency and reproducibility  
- Improved sensitivity and specificity  
- Long-term security of supply  
- Animal-free production  
For more information see here.

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

**Properties**

**Form**  
Liquid

**Storage instructions**  

**Storage buffer**  
Preservative: 0.01% Sodium azide  
Constituents: 0.05% BSA, 40% Glycerol, PBS
Purity
Protein A purified

Clonality
Monoclonal

Clone number
EPR20668

Isotype
IgG

Applications

Our Abpromise guarantee covers the use of ab210702 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

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<td>ICC/IF</td>
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<td>Flow Cyt</td>
<td>1/400.</td>
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<tr>
<td>WB</td>
<td>1/1000. Detects a band of approximately 59 kDa (predicted molecular weight: 59 kDa).</td>
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<td>IP</td>
<td>1/40.</td>
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Target

Function
Catalyzes the rate-limiting step of the oxidative pentose-phosphate pathway, which represents a route for the dissimilation of carbohydrates besides glycolysis. The main function of this enzyme is to provide reducing power (NADPH) and pentose phosphates for fatty acid and nucleic acid synthesis.

Tissue specificity
Isoform Long is found in lymphoblasts, granulocytes and sperm.

Pathway
Carbohydrate degradation; pentose phosphate pathway; D-ribulose 5-phosphate from D-glucose 6-phosphate (oxidative stage): step 1/3.

Involvement in disease
Anemia, non-spherocytic hemolytic, due to G6PD deficiency

Sequence similarities
Belongs to the glucose-6-phosphate dehydrogenase family.

Post-translational modifications
Acetylated by ELP3 at Lys-403; acetylation inhibits its homodimerization and enzyme activity. Deacetylated by SIRT2 at Lys-403; deacetylation stimulates its enzyme activity.
Western blot - Anti-Glucose 6 Phosphate Dehydrogenase antibody [EPR20668] (ab210702)

**All lanes:** Anti-Glucose 6 Phosphate Dehydrogenase antibody [EPR20668] (ab210702) at 1/5000 dilution

**Lane 1:** HeLa (human epithelial cell line from cervix adenocarcinoma cell line) whole cell lysate at 20 µg

**Lane 2:** C2C12 (mouse myoblast cell line) whole cell lysate at 20 µg

**Lane 3:** Mouse testis lysate at 20 µg

**Lane 4:** MCF7 (human breast adenocarcinoma cell line) whole cell lysate at 10 µg

**Lane 5:** RAW 264.7 (mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate at 10 µg

**Secondary**

**All lanes:** Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

**Predicted band size:** 59 kDa

**Observed band size:** 59 kDa

Blocking/Dilution buffer: 5% NFDM/TBST.

Exposure times: Lanes 1/2/3: 3 minutes; Lanes 4/5: 3 seconds.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.


Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
Immunofluorescent analysis of methanol-fixed MCF7 (human breast adenocarcinoma cell line) cells labeling Glucose 6 Phosphate Dehydrogenase with ab210702 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on MCF7 cell line.

The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

Immunofluorescent analysis of methanol-fixed HeLa (human epithelial cell line from cervix adenocarcinoma) cells labeling Glucose 6 Phosphate Dehydrogenase with ab210702 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on HeLa cell line.

The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

Immunohistochemical analysis of paraffin-embedded human gastric adenocarcinoma tissue (left panel) and human gastric paracarcinoma (right panel) labeling Glucose 6 Phosphate Dehydrogenase with ab210702 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ready to use. Strong cytoplasmic staining on human gastric adenocarcinoma, compared with weak cytoplasmic staining on the paired paracarcinoma stomach (PMID: 22012600). Both tissue sections are derived from the same patient sample. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.


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Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
Immunohistochemical analysis of paraffin-embedded rat liver tissue labeling Glucose 6 Phosphate Dehydrogenase with ab210702 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ready to use. Cytoplasmic staining on rat liver (PMID: 24994855, PMID: 26583321). Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

**All lanes**: Anti-Glucose 6 Phosphate Dehydrogenase antibody [EPR20668] (ab210702) at 1/1000 dilution

**Lane 1**: Rat brain lysate
**Lane 2**: Rat liver lysate
**Lane 3**: Rat spleen lysate
**Lane 4**: Mouse spleen lysate
**Lane 5**: C6 (rat glial tumor cell line) whole cell lysate
**Lane 6**: NIH/3T3 (mouse embryo fibroblast cell line) whole cell lysate
**Lane 7**: PC-12 (rat adrenal gland pheochromocytoma cell line) whole cell lysate

Lysates/proteins at 10 µg per lane.

**Secondary**

**All lanes**: Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

**Predicted band size**: 59 kDa
Observed band size: 59 kDa

Blocking/Dilution buffer: 5% NFDM/TBST.

Exposure times: Lanes 1/2/3: 3 minutes; Lane 4: 15 seconds; Lanes 5/6: 30 seconds; Lane 7: 15 seconds.

Flow cytometric analysis of 4% paraformaldehyde-fixed HeLa (human epithelial cell line from cervix adenocarcinoma) cell line labeling Glucose 6 Phosphate Dehydrogenase with ab210702 at 1/400 (red) compared with an isotype control rabbit monoclonal IgG (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) at 1/2000 dilution was used as the secondary antibody.

Glucose 6 Phosphate Dehydrogenase was immunoprecipitated from 0.35mg of HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab210702 at 1/40 dilution. Western blot was performed from the immunoprecipitate using ab210702 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.

Lane 1: HeLa whole cell lysate 10 μg (Input).
Lane 2: ab210702 IP in HeLa whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab210702 in HeLa whole cell lysate.

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: 30 seconds.

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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