abcam

# ab307955

# Anti-GWL antibody [EPR26356-80]

Recombinant | RabMAb | 20ul selling size

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | EPR26356-80 |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.509 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## WB

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/1000 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Mouse |

| | |
|---|---|
| **Dilution info** | 1/1000 |
| **Notes** | - |

### Not recommended

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | - |
| **Notes** | - |

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/100 |
| **Notes** | Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. |

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/100 |
| **Notes** | Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. |

### Not recommended

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | - |
| **Notes** | Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. |

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/50 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/50 |
| **Notes** | - |

### Not recommended

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | - |
| **Notes** | - |

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/50 |
| **Notes** | - |

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| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/50 |
| **Notes** | - |

### Not recommended

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | - |
| **Notes** | - |

## IP

### Not recommended

| | |
|---|---|
| **Species** | Human, Mouse, Rat |
| **Dilution info** | - |
| **Notes** | - |

## IHC-Fr

**Not recommended**

| | |
|---|---|
| **Species** | Mouse, Rat, Human |
| **Dilution info** | - |
| **Notes** | - |

## Target data

See full target information MASTL

| | |
|---|---|
| **Function** | Serine/threonine kinase that plays a key role in M phase by acting as a regulator of mitosis entry and maintenance (PubMed:19680222). Acts by promoting the inactivation of protein phosphatase 2A (PP2A) during M phase: does not directly inhibit PP2A but acts by mediating phosphorylation and subsequent activation of ARPP19 and ENSA at 'Ser-62' and 'Ser-67', respectively (PubMed:38123684). ARPP19 and ENSA are phosphatase inhibitors that specifically inhibit the PPP2R2D (PR55-delta) subunit of PP2A. Inactivation of PP2A during M phase is essential to keep cyclin-B1-CDK1 activity high (PubMed:20818157). Following DNA damage, it is also involved in checkpoint recovery by being inhibited. Phosphorylates histone protein in vitro; however such activity is unsure in vivo. May be involved in megakaryocyte differentiation. |

## Storage

| | |
|---|---|
| **Shipped at conditions** | Conditional Ambient |
| **Appropriate short-term storage duration** | 1-2 weeks |
| **Appropriate short-term storage conditions** | +4°C |
| **Appropriate long-term storage conditions** | -20°C |
| **Aliquoting information** | Upon delivery aliquot |
| **Storage information** | Avoid freeze / thaw cycle |

## Notes

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

**What are the advantages of a recombinant monoclonal antibody?**
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 batch production

For more information, read more on recombinant antibodies.

## Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

| | |
|---|---|
| **Activity summary** | GWL also known as Greatwall kinase (and occasionally Mastl) is a protein kinase with a calculated molecular mass of about 58 kDa. This protein mainly expresses in various tissues but it shows higher expression in organs such as the heart liver and skeletal muscle. GWL plays a mechanical role in the regulation of cell cycle through its kinase activity which phosphorylates other key proteins involved in mitosis. |
| **Biological function summary** | GWL influences the cell cycle and mitotic progression by modulating the activity of the phosphatase inhibitor proteins ENSA and ARPP19. It is part of a functional complex with these proteins when activated leading to the inhibition of Protein Phosphatase 2A (PP2A) during mitosis which allows for proper chromosome condensation and segregation. This ensures that the cells divide accurately maintaining genomic stability. |
| **Pathways** | Different cellular pathways integrate their signals through GWL to regulate mitosis. One of the key pathways is the cell cycle control pathway where GWL works alongside CDK1 and is essential for the phosphorylation cascade that leads to mitotic entry. Another pathway of note is the mitotic spindle assembly checkpoint where GWL interacts with proteins such as BUB1 and MAD2 helping establish mechanisms that ensure cells do not prematurely progress through mitosis with errors. |
| **Associated diseases and disorders** | GWL dysfunction links to cancer due to its critical role in cell division. Aberrant expression or mutation of GWL can lead to aneuploidy and genomic instability factors that contribute to tumorigenesis. Moreover abnormalities in GWL expression have been associated with neurological disorders like Alzheimer's disease where it may interact with tau protein aggregation pathways. In cancer GWL often works in conjunction with oncogenes like MYC and tumor suppressors such as p53 influencing their roles in controlling cell proliferation and survival. |

## Product promise

**Tested**

We have tested this species and application combination and it works. It is covered by our product promise.

**Expected**

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

**Predicted**

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

**Not recommended**

We do not recommend this combination. It is not covered by our product promise.

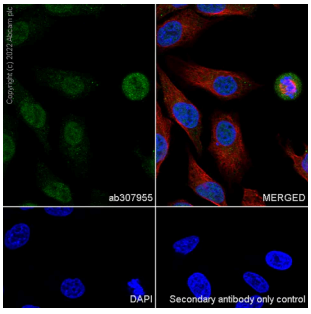
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We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

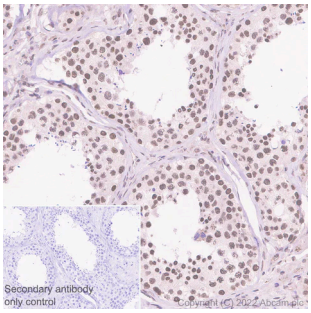
Full details and terms and conditions can be found here:
Terms & Conditions.

## 8 product images



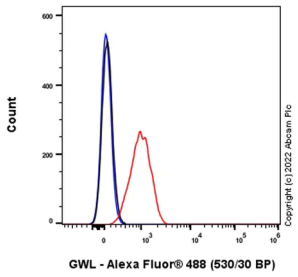

### Immunocytochemistry/ Immunofluorescence - Anti-GWL antibody [EPR26356-80] (ab307955)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labeling GWL with ab307955 at 1/50 dilution (10.18 ug/ml) followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (2 ug/ml) (Green). Confocal image showing positive staining in HeLa cells. Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8). ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (2.5 ug/ml) (Red). The nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution (2 ug/ml) (Green).



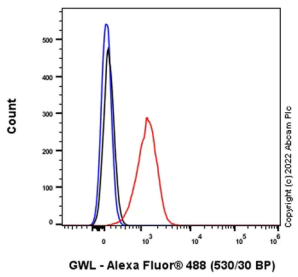

### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GWL antibody [EPR26356-80] (ab307955)

Immunohistochemical analysis of paraffin-embedded human testis tissue labeling GWL with ab307955 at 1/100 dilution (5.09 ug/ml) followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP polymer). Positive staining on human testis. The section was incubated with ab307955 at 4°C overnight. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP polymer). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0).



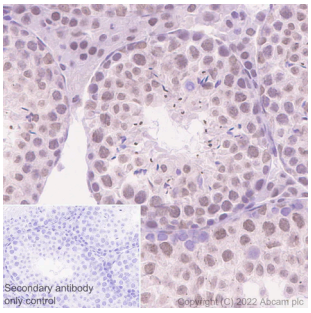

## Flow Cytometry (Intracellular) - Anti-GWL antibody [EPR26356-80] (ab307955)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (Human cervix adenocarcinoma epithethial cell) cells labeling GWL with ab307955 at 1/50 dilution (1 ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



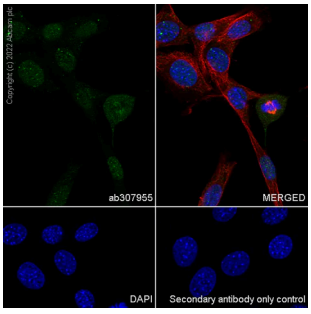

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Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labeling GWL with ab307955 at 1/50 dilution (1 ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



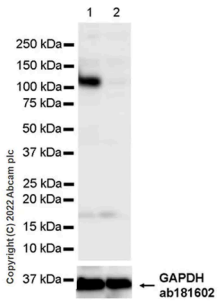

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Immunohistochemical analysis of paraffin-embedded mouse testis tissue labeling GWL with ab307955 at 1/100 dilution (5.09 ug/ml) followed by a ready to use Goat Anti-Rabbit IgG H&L (HRP polymer). Positive staining on mouse testis. The section was incubated with ab307955 at 4°C overnight. Counterstained with Hematoxylin. Secondary antibody only control: Secondary antibody is a ready to use Goat Anti-Rabbit IgG H&L (HRP polymer). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0).




## Immunocytochemistry/ Immunofluorescence - Anti-GWL antibody [EPR26356-80] (ab307955)

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## Western blot - Anti-GWL antibody [EPR26356-80] (ab307955)

Blocking/Dilution buffer: 5% NFDM/TBST. In Western blot, anti-GAPDH antibody (ab181602) loading control staining at 1/200000 dilution. Exposure time: 26 seconds.
All lanes:
Western blot - Anti-GWL antibody [EPR26356-80] (ab307955) at 1/1000 dilution

Lane 1:
HeLa (human cervix adenocarcinoma epithelial cell) transfected with scrambled siRNA control whole cell lysate at 20 µg

Lane 2:
HeLa transfected with siRNA specifically targeting GWL whole cell lysate at 20 µg

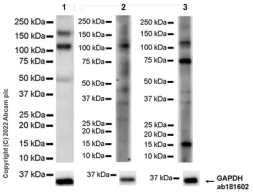
Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 97 kDa

Observed band size: 110 kDa

Exposure time: 26s




## Western blot - Anti-GWL antibody [EPR26356-80] (ab307955)

GWL Western blot staining using rabbit Anti-GWL antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure times: Lane 1: 158 seconds, Lane 2: 92 seconds, Lane 3: 81 seconds.

The Lanes 2 and 3 were developed using a high sensitivity ECL substrate.

The identity of band at approximately 150 kDa (in lane 1) and 75 kDa (in lane 3) are unknown.

In Western blot, anti-GAPDH antibody (ab181602) loading control staining at 1/200000 dilution.

All lanes:
Western blot - Anti-GWL antibody [EPR26356-80] (ab307955) at 1/1000 dilution

Lane 1:
Human testis tissue lysate at 20 µg

Lane 2:
Mouse testis tissue lysate at 20 µg

Lane 3:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Developed using the ECL technique.

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