**Product datasheet**

**Anti-GGT1 antibody ab55138**

- **Product name**: Anti-GGT1 antibody
- **Description**: Mouse monoclonal to GGT1
- **Host species**: Mouse
- **Tested applications**: Suitable for: WB, IHC-P, ICC, ICC/IF, Flow Cyt
- **Species reactivity**: Reacts with: Mouse, Human
- **Immunogen**: Recombinant fragment: TAHLSVVAED GSAVSATSTI NLYFGSKVRS PVSGILFNNE MDDFSSPSIT NEFGVPPSPA NFQPGKQPL SSMCPTIMVG QDGQVRMVG, corresponding to amino acids 381-471 of Human GGT1

**Properties**

- **Form**: Liquid
- **Storage instructions**: Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.
- **Storage buffer**: Preservative: None
  - PBS, pH 7.2
- **Purity**: Ascites
- **Purification notes**: Purified from ascites.
- **Clonality**: Monoclonal
- **Isotype**: IgG2a
- **Light chain type**: kappa

**Applications**

Our Abpromise guarantee covers the use of ab55138 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>WB</td>
<td>⭐⭐⭐⭐⭐</td>
<td>Use a concentration of 1 - 5 µg/ml. Predicted molecular weight: 61 kDa.</td>
</tr>
</tbody>
</table>
**Function**
Initiates extracellular glutathione (GSH) breakdown, provides cells with a local cysteine supply and contributes to maintain intracellular GSH level. It is part of the cell antioxidant defense mechanism. Catalyzes the transfer of the glutamyl moiety of glutathione to amino acids and dipeptide acceptors. Alternatively, glutathione can be hydrolyzed to give Cys-Gly and gamma glutamate. Isoform 3 seems to be inactive.

**Tissue specificity**
Detected in fetal and adult kidney and liver, adult pancreas, stomach, intestine, placenta and lung. Isoform 3 is lung-specific. There are several other tissue-specific forms that arise from alternative promoter usage but that produce the same protein.

**Pathway**
Sulfur metabolism; glutathione metabolism.

**Involvement in disease**
Defects in GGT1 are a cause of glutathionuria (GLUTH) [MIM:231950]; also known as gamma-glutamyltranspeptidase deficiency. It is an autosomal recessive disease.

**Sequence similarities**
Belongs to the gamma-glutamyltransferase family.

**Post-translational modifications**
N-glycosylated on both chains. Contains hexoses, hexosamines and sialic acid residues. Glycosylation profiles tested in kidney and liver tissues reveal the presence of tissue-specific and site-specific glycan composition, despite the overlap in composition among the N-glycans. A total of 36 glycan compositions, with 40 unique structures are observed. Up to 15 different glycans are observed at a single site, with site-specific variation in glycan composition. The difference in glycosylation profiles in the 2 tissues do not affect the enzyme activity.

**Cellular localization**
Membrane.

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### Application

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<td>IHC-P</td>
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<td>Use a concentration of 3 µg/ml.</td>
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<tr>
<td>ICC</td>
<td><img src="image" alt="Rating" /></td>
<td>Use at an assay dependent concentration.</td>
</tr>
<tr>
<td>ICC/IF</td>
<td><img src="image" alt="Rating" /></td>
<td>Use a concentration of 1 µg/ml.</td>
</tr>
</tbody>
</table>
| Flow Cyt    |           | Use 1µg for 10^6 cells.  
|             |           | *ab170191* - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody. |

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### Target

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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-GGT1 antibody (ab55138)

GGT1 antibody (ab55138) used in immunohistochemistry at 3µg/ml on formalin fixed and paraffin embedded human testis.

Western blot - Anti-GGT1 antibody (ab55138)

GGT1 antibody (ab55138) at 1µg/lane + NIH/3T3 cell lysate at 25µg/lane.

Immunocytochemistry/ Immunofluorescence - Anti-GGT1 antibody (ab55138)

ICC/IF image of ab55138 stained HepG2 cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab55138, 1µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.
Overlay histogram showing HEK293 cells stained with ab55138 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab55138, 1µg/1x10⁶ cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2a [ICIGG2A] (ab91361, 1µg/1x10⁶ cells) used under the same conditions.

Acquisition of >5,000 events was performed. This antibody gave a positive signal in HEK293 cells fixed with 100% methanol used under the same conditions.

Please note that Abcam do not have any data for use of this antibody on non-fixed cells. We welcome any customer feedback.

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