

**KD-Validated Anti-G3BP1 Rabbit Monoclonal Antibody**  
Rabbit monoclonal antibody  
Catalog # AGI1835

**Specification**

**KD-Validated Anti-G3BP1 Rabbit Monoclonal Antibody - Product Information**

Application	WB, FC
Primary Accession	<a href="#">Q13283</a>
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Calculated MW	Predicted, 52 kDa, observed, 68 kDa kDa
Gene Name	G3BP1
Aliases	G3BP1; G3BP Stress Granule Assembly Factor 1; G3BP; HDH-VIII; Ras-GTPase-Activating Protein SH3-Domain-Binding Protein; GTPase Activating Protein (SH3 Domain) Binding Protein 1; Ras GTPase-Activating Protein-Binding Protein 1; GAP SH3 Domain-Binding Protein 1; ATP-Dependent DNA Helicase VIII; DNA Helicase VIII; G3BP-1; RasGAP-Associated Endoribonuclease G3BP; GAP Binding Protein; EC 3.6.4.12; EC 3.6.4.13; HDH VIII; EC 3.6.1
Immunogen	A synthesized peptide derived from human G3BP

**KD-Validated Anti-G3BP1 Rabbit Monoclonal Antibody - Additional Information**

Gene ID	10146
<b>Other Names</b>	Ras GTPase-activating protein-binding protein 1, G3BP-1, 3.6.4.12, 3.6.4.13, ATP-dependent DNA helicase VIII, hDH VIII, GAP SH3 domain-binding protein 1, G3BP1 {ECO:0000303 PubMed:23279204, ECO:0000312 HGNC:HGNC:30292}

**KD-Validated Anti-G3BP1 Rabbit Monoclonal Antibody - Protein Information**

**Name** G3BP1 {ECO:0000303|PubMed:23279204, ECO:0000312|HGNC:HGNC:30292}

**Function**

Protein involved in various processes, such as stress granule formation and innate immunity (PubMed: [12642610](http://www.uniprot.org/citations/12642610), PubMed: [20180778](http://www.uniprot.org/citations/20180778), PubMed: [23279204](http://www.uniprot.org/citations/23279204), PubMed: [30510222](http://www.uniprot.org/citations/30510222), PubMed: [30804210](http://www.uniprot.org/citations/30804210)).

Plays an essential role in stress granule formation (PubMed:<a href="http://www.uniprot.org/citations/12642610" target="\_blank">12642610</a>, PubMed:<a href="http://www.uniprot.org/citations/20180778" target="\_blank">20180778</a>, PubMed:<a href="http://www.uniprot.org/citations/23279204" target="\_blank">23279204</a>, PubMed:<a href="http://www.uniprot.org/citations/32302570" target="\_blank">32302570</a>, PubMed:<a href="http://www.uniprot.org/citations/32302571" target="\_blank">32302571</a>, PubMed:<a href="http://www.uniprot.org/citations/32302572" target="\_blank">32302572</a>, PubMed:<a href="http://www.uniprot.org/citations/34739333" target="\_blank">34739333</a>, PubMed:<a href="http://www.uniprot.org/citations/35977029" target="\_blank">35977029</a>, PubMed:<a href="http://www.uniprot.org/citations/36183834" target="\_blank">36183834</a>, PubMed:<a href="http://www.uniprot.org/citations/36279435" target="\_blank">36279435</a>, PubMed:<a href="http://www.uniprot.org/citations/36692217" target="\_blank">36692217</a>, PubMed:<a href="http://www.uniprot.org/citations/37379838" target="\_blank">37379838</a>). Stress granules are membraneless compartments that store mRNAs and proteins, such as stalled translation pre-initiation complexes, in response to stress (PubMed:<a href="http://www.uniprot.org/citations/12642610" target="\_blank">12642610</a>, PubMed:<a href="http://www.uniprot.org/citations/20180778" target="\_blank">20180778</a>, PubMed:<a href="http://www.uniprot.org/citations/23279204" target="\_blank">23279204</a>, PubMed:<a href="http://www.uniprot.org/citations/27022092" target="\_blank">27022092</a>, PubMed:<a href="http://www.uniprot.org/citations/32302570" target="\_blank">32302570</a>, PubMed:<a href="http://www.uniprot.org/citations/32302571" target="\_blank">32302571</a>, PubMed:<a href="http://www.uniprot.org/citations/32302572" target="\_blank">32302572</a>, PubMed:<a href="http://www.uniprot.org/citations/36279435" target="\_blank">36279435</a>, PubMed:<a href="http://www.uniprot.org/citations/37379838" target="\_blank">37379838</a>). Promotes formation of stress granules phase-separated membraneless compartment by undergoing liquid-liquid phase separation (LLPS) upon unfolded RNA-binding: functions as a molecular switch that triggers RNA-dependent LLPS in response to a rise in intracellular free RNA concentrations (PubMed:<a href="http://www.uniprot.org/citations/32302570" target="\_blank">32302570</a>, PubMed:<a href="http://www.uniprot.org/citations/32302571" target="\_blank">32302571</a>, PubMed:<a href="http://www.uniprot.org/citations/32302572" target="\_blank">32302572</a>, PubMed:<a href="http://www.uniprot.org/citations/34739333" target="\_blank">34739333</a>, PubMed:<a href="http://www.uniprot.org/citations/36279435" target="\_blank">36279435</a>, PubMed:<a href="http://www.uniprot.org/citations/36692217" target="\_blank">36692217</a>). Also acts as an ATP- and magnesium-dependent helicase: unwinds DNA/DNA, RNA/DNA, and RNA/RNA substrates with comparable efficiency (PubMed:<a href="http://www.uniprot.org/citations/9889278" target="\_blank">9889278</a>). Acts unidirectionally by moving in the 5' to 3' direction along the bound single-stranded DNA (PubMed:<a href="http://www.uniprot.org/citations/9889278" target="\_blank">9889278</a>). Unwinds preferentially partial DNA and RNA duplexes having a 17 bp annealed portion and either a hanging 3' tail or hanging partial tails at both 5'- and 3'-ends (PubMed:<a href="http://www.uniprot.org/citations/9889278" target="\_blank">9889278</a>). Plays an essential role in innate immunity by promoting CGAS and RIGI activity (PubMed:<a href="http://www.uniprot.org/citations/30510222" target="\_blank">30510222</a>, PubMed:<a href="http://www.uniprot.org/citations/30804210" target="\_blank">30804210</a>). Participates in the DNA-triggered cGAS/STING pathway by promoting the DNA binding and activation of CGAS (PubMed:<a href="http://www.uniprot.org/citations/30510222" target="\_blank">30510222</a>). Triggers the condensation of cGAS, a process probably linked to the formation of membrane-less organelles (PubMed:<a href="http://www.uniprot.org/citations/34779554" target="\_blank">34779554</a>). Also enhances RIGI-induced type I interferon production probably by helping RIGI at sensing pathogenic RNA (PubMed:<a href="http://www.uniprot.org/citations/30804210" target="\_blank">30804210</a>). May also act as a phosphorylation- dependent sequence-specific endoribonuclease in vitro: Cleaves exclusively between cytosine and adenine and cleaves MYC mRNA preferentially at the 3'-UTR (PubMed:<a href="http://www.uniprot.org/citations/11604510" target="\_blank">11604510</a>).

### Cellular Location

Cytoplasm, cytosol. Perikaryon {ECO:0000250|UniProtKB:P97855}. Cytoplasm, Stress granule.

Nucleus Note=Cytoplasmic in proliferating cells (PubMed:11604510). Cytosolic and partially nuclear in resting cells (PubMed:11604510). Recruited to stress granules in response to arsenite treatment (PubMed:12642610, PubMed:20180778). The unphosphorylated form is recruited to stress granules (PubMed:12642610). HRAS signaling contributes to this process by regulating G3BP dephosphorylation (PubMed:12642610)

#### Tissue Location

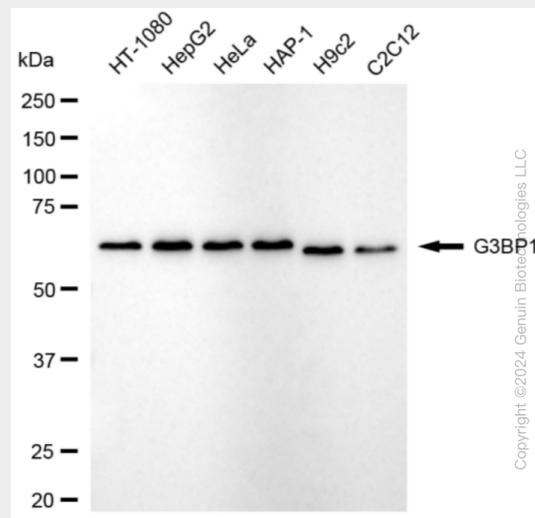
Ubiquitous..

#### KD-Validated Anti-G3BP1 Rabbit Monoclonal Antibody - Protocols

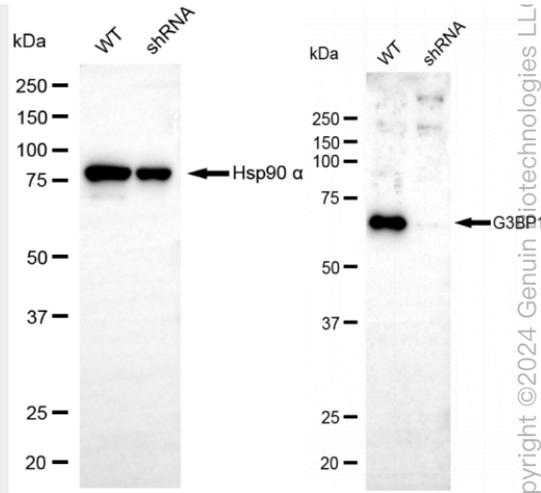
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

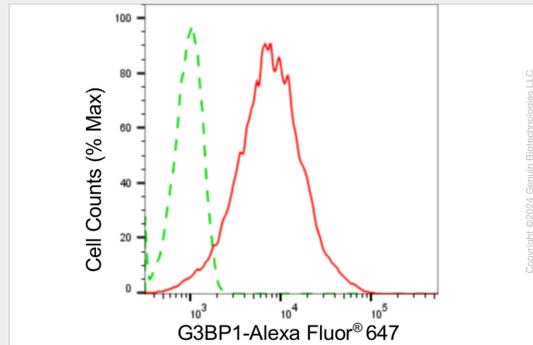
#### KD-Validated Anti-G3BP1 Rabbit Monoclonal Antibody - Images



Western blotting analysis using anti-G3BP1 antibody (Cat#AGI1835). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-G3BP1 antibody (Cat#AGI1835, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-G3BP1 antibody (Cat#AGI1835). G3BP1 expression in wild type (WT) and G3BP1 shRNA knockdown (KD) HeLa cells with 20  $\mu$ g of total cell lysates. Hsp90  $\alpha$  serves as a loading control. The blot was incubated with anti-G3BP1 antibody (Cat#AGI1835, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Flow cytometric analysis of G3BP1 expression in HepG2 cells using anti-G3BP1 antibody (Cat#AGI1835, 1:2,000). Green, isotype control; red, G3BP1.