

# [KD]G3BP Rabbit mAb

Catalog # AP75467

## Product Information

|                   |                          |
|-------------------|--------------------------|
| Application       | WB, IHC-P, IHC-F, FC, IP |
| Primary Accession | <a href="#">Q13283</a>   |
| Reactivity        | Rat, Human, Mouse        |
| Host              | Rabbit                   |
| Clonality         | Monoclonal Antibody      |
| Isotype           | IgG                      |
| Conjugate         | Unconjugated             |
| Purification      | Affinity Purified        |
| Calculated MW     | 52164                    |

## Additional Information

|             |                                                                                                 |
|-------------|-------------------------------------------------------------------------------------------------|
| Gene ID     | 10146                                                                                           |
| Other Names | G3BP1                                                                                           |
| Dilution    | WB~~1:1000-1:5000 IHC-P~~N/A IHC-F~~N/A FC~~1:20-1:50 IP~~1:20                                  |
| Format      | Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA. |
| Storage     | Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.        |

## 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: <a href="#">37672657</a> , PubMed: <a href="#">20180778</a> , PubMed: <a href="#">23279204</a> , PubMed: <a href="#">30510222</a> , PubMed: <a href="#">30804210</a> ). Plays an essential role in stress granule formation (PubMed: <a href="#">37672657</a> , PubMed: <a href="#">20180778</a> , PubMed: <a href="#">23279204</a> , PubMed: <a href="#">32302570</a> , PubMed: <a href="#">32302571</a> , PubMed: <a href="#">32302572</a> , PubMed: <a href="#">34739333</a> , PubMed: <a href="#">35977029</a> , PubMed: <a href="#">36183834</a> , PubMed: <a href="#">36279435</a> , PubMed: <a href="#">36692217</a> , PubMed: <a href="#">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="#">37672657</a> , PubMed: <a href="#">20180778</a> , PubMed: <a href="#">23279204</a> , PubMed: <a href="#">27022092</a> , PubMed: <a href="#">32302570</a> , PubMed: <a href="#">32302571</a> , PubMed: <a href="#">32302572</a> , PubMed: <a href="#">36279435</a> , PubMed: <a href="#">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:[32302570](#), PubMed:[32302571](#), PubMed:[32302572](#), PubMed:[34739333](#), PubMed:[36279435](#), PubMed:[36692217](#)). Also acts as an ATP- and magnesium-dependent helicase: unwinds DNA/DNA, RNA/DNA, and RNA/RNA substrates with comparable efficiency (PubMed:[9889278](#)). Acts unidirectionally by moving in the 5' to 3' direction along the bound single-stranded DNA (PubMed:[9889278](#)). Unwinds preferentially partial DNA and RNA duplexes having a 17 bp annealed portion and either a hanging 3' tail or hanging tails at both 5'- and 3'-ends (PubMed:[9889278](#)). Plays an essential role in innate immunity by promoting CGAS and RIGI activity (PubMed:[30510222](#), PubMed:[30804210](#)). Participates in the DNA-triggered cGAS/STING pathway by promoting the DNA binding and activation of CGAS (PubMed:[30510222](#)). Triggers the condensation of cGAS, a process probably linked to the formation of membrane-less organelles (PubMed:[34779554](#)). Also enhances RIGI-induced type I interferon production probably by helping RIGI at sensing pathogenic RNA (PubMed:[30804210](#)). 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:[11604510](#)).

## 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:[37672657](#), PubMed:[20180778](#)). The unphosphorylated form is recruited to stress granules (PubMed:[37672657](#)). HRAS signaling contributes to this process by regulating G3BP dephosphorylation (PubMed:[37672657](#))

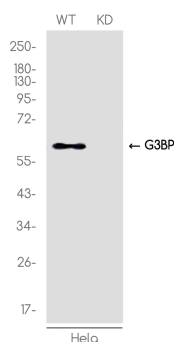
## Tissue Location

Ubiquitous..

## Background

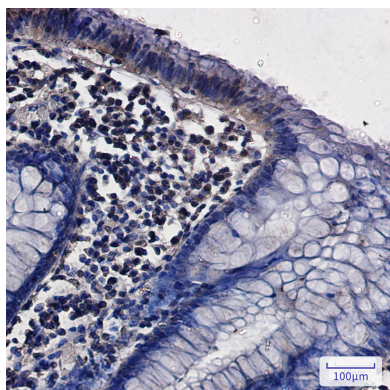
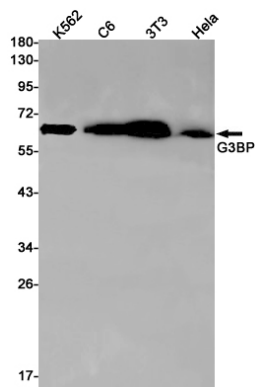
May be a regulated effector of stress granule assembly. Phosphorylation-dependent sequence-specific endoribonuclease in vitro. Cleaves exclusively between cytosine and adenine and cleaves MYC mRNA preferentially at the 3'-UTR.

## Images

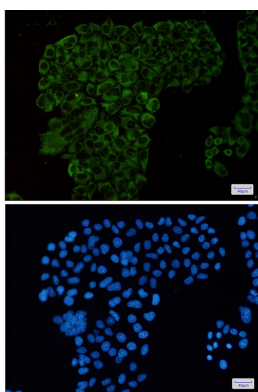


Western blot analysis of G3BP in HeLa(WT) and G3BP-Knockdown HeLa(KD) using G3BP antibody.

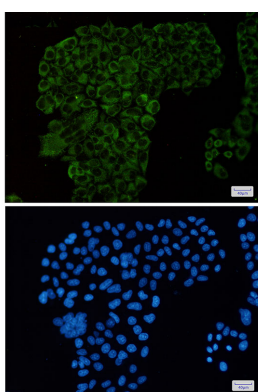
Western blot analysis of G3BP in K562, C6, 3T3, HeLa lysates using G3BP antibody.



Immunohistochemistry analysis of paraffin-embedded Human colon cancer using G3BP antibody. High-pressure and temperature Sodium Citrate pH 6.0 was used for antigen retrieval.



Immunocytochemistry analysis of G3BP (green) in HeLa using G3BP antibody, and DAPI (blue)



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