

[35977029](http://www.uniprot.org/citations/35977029), PubMed:<[36183834](http://www.uniprot.org/citations/36183834)>, PubMed:<[36279435](http://www.uniprot.org/citations/36279435)>, PubMed:<[36692217](http://www.uniprot.org/citations/36692217)>, PubMed:<[37379838](http://www.uniprot.org/citations/37379838)>). Stress granules are membraneless compartments that store mRNAs and proteins, such as stalled translation pre-initiation complexes, in response to stress (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:<[27022092](http://www.uniprot.org/citations/27022092)>, PubMed:<[32302570](http://www.uniprot.org/citations/32302570)>, PubMed:<[32302571](http://www.uniprot.org/citations/32302571)>, PubMed:<[32302572](http://www.uniprot.org/citations/32302572)>, PubMed:<[36279435](http://www.uniprot.org/citations/36279435)>, PubMed:<[37379838](http://www.uniprot.org/citations/37379838)>). 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](http://www.uniprot.org/citations/32302570)>, PubMed:<[32302571](http://www.uniprot.org/citations/32302571)>, PubMed:<[32302572](http://www.uniprot.org/citations/32302572)>, PubMed:<[34739333](http://www.uniprot.org/citations/34739333)>, PubMed:<[36279435](http://www.uniprot.org/citations/36279435)>, PubMed:<[36692217](http://www.uniprot.org/citations/36692217)>). Also acts as an ATP- and magnesium-dependent helicase: unwinds DNA/DNA, RNA/DNA, and RNA/RNA substrates with comparable efficiency (PubMed:<[9889278](http://www.uniprot.org/citations/9889278)>). Acts unidirectionally by moving in the 5' to 3' direction along the bound single-stranded DNA (PubMed:<[9889278](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/9889278)>). Plays an essential role in innate immunity by promoting CGAS and RIGI activity (PubMed:<[30510222](http://www.uniprot.org/citations/30510222)>, PubMed:<[30804210](http://www.uniprot.org/citations/30804210)>). Participates in the DNA-triggered cGAS/STING pathway by promoting the DNA binding and activation of CGAS (PubMed:<[30510222](http://www.uniprot.org/citations/30510222)>). Triggers the condensation of cGAS, a process probably linked to the formation of membrane-less organelles (PubMed:<[34779554](http://www.uniprot.org/citations/34779554)>). Enhances also RIGI-induced type I interferon production probably by helping RIGI at sensing pathogenic RNA (PubMed:<[30804210](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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: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

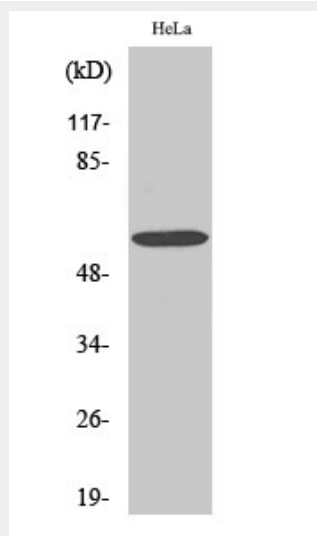
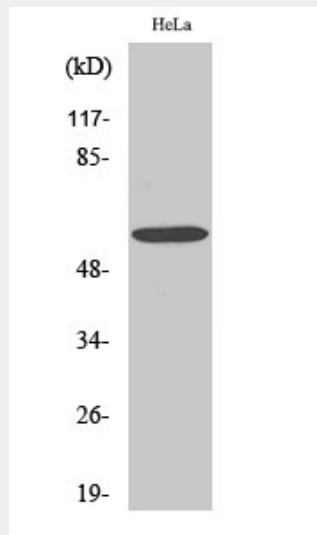
Ubiquitous..

G3BP1 Polyclonal 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](#)

G3BP1 Polyclonal Antibody - Images



G3BP1 Polyclonal Antibody - Background

ATP- and magnesium-dependent helicase (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). 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). Phosphorylation-dependent sequence-specific endoribonuclease in vitro (PubMed:11604510). Cleaves exclusively between cytosine and adenine and cleaves MYC mRNA preferentially at the 3'-UTR (PubMed:11604510). May be a regulated effector of stress granule assembly (PubMed:12642610, PubMed:20180778).