

[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)). Also enhances 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..

G3BP Rabbit mAb - 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](#)

G3BP Rabbit mAb - Images

