

G3BP1 / G3BP Antibody (clone 2F3)
Mouse Monoclonal Antibody
Catalog # ALS13459**Specification**

G3BP1 / G3BP Antibody (clone 2F3) - Product Information

Application	WB, IHC-P, IF, E, RNAi
Primary Accession	Q13283
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Calculated MW	52kDa KDa
Dilution	WB~~1:1000 IHC-P~~N/A IF~~1:50~200 E~~N/A RNAi~~N/A

G3BP1 / G3BP Antibody (clone 2F3) - Additional Information

Gene ID 10146

Other Names

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, G3BP

Reconstitution & Storage

Store at -20°C. Aliquot to avoid freeze/thaw cycles.

Precautions

G3BP1 / G3BP Antibody (clone 2F3) is for research use only and not for use in diagnostic or therapeutic procedures.

G3BP1 / G3BP Antibody (clone 2F3) - 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: [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)).

[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: [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)). 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

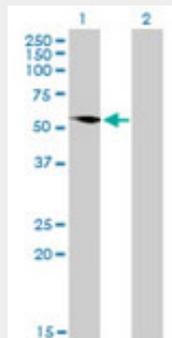
Ubiquitous..

G3BP1 / G3BP Antibody (clone 2F3) - Protocols

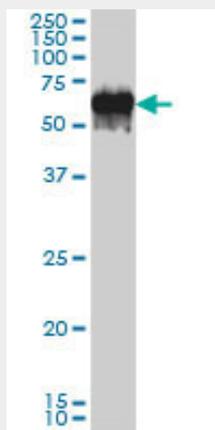
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)

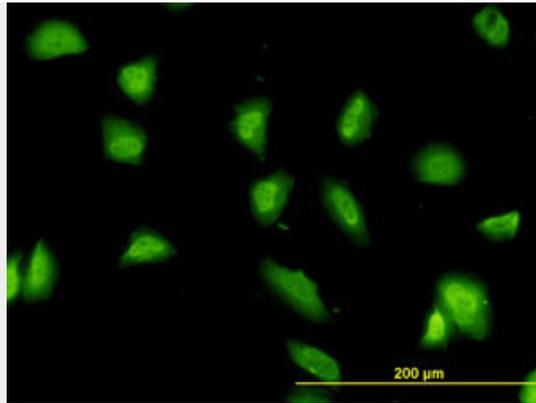
G3BP1 / G3BP Antibody (clone 2F3) - Images



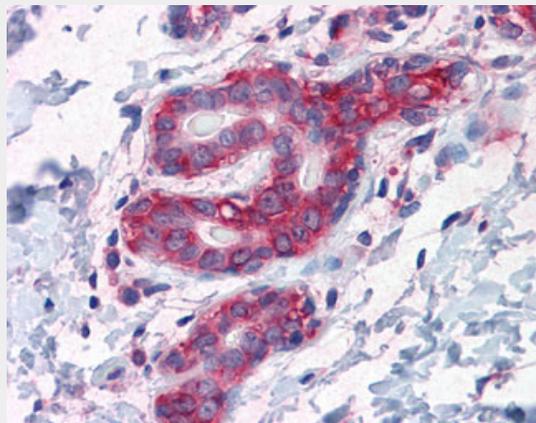
Western blot of G3BP expression in transfected 293T cell line by G3BP monoclonal antibody clone 2F3.



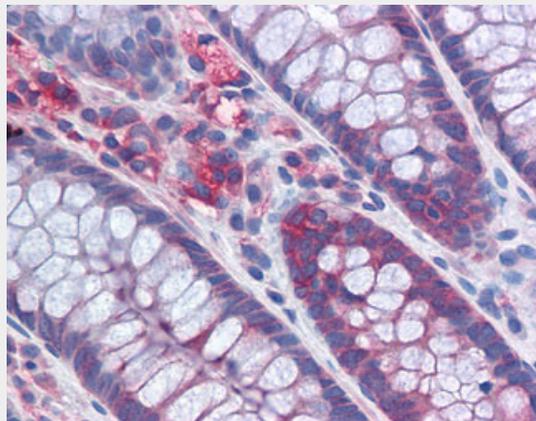
G3BP monoclonal antibody clone 2F3 Western blot of G3BP expression in A-431.



Immunofluorescence of monoclonal antibody to G3BP on HeLa cell (antibody concentration 10 ug/ml).



Anti-G3BP1 / G3BP antibody IHC of human breast.



Anti-G3BP1 / G3BP antibody IHC of human colon.

G3BP1 / G3BP Antibody (clone 2F3) - 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. ATP- and magnesium- dependent helicase. 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. Unwinds DNA/DNA, RNA/DNA, and RNA/RNA substrates with comparable efficiency. Acts unidirectionally by moving in the 5' to 3' direction along the bound single-stranded DNA.

G3BP1 / G3BP Antibody (clone 2F3) - References

- Parker F.,et al.Mol. Cell. Biol. 16:2561-2569(1996).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Bechtel S.,et al.BMC Genomics 8:399-399(2007).
Schmutz J.,et al.Nature 431:268-274(2004).
Bienvenut W.V.,et al.Submitted (DEC-2008) to UniProtKB.