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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, PubMed:20180778, PubMed:23279204, PubMed:30510222, PubMed:30804210). Plays an essential role in stress granule formation (PubMed:12642610, PubMed:20180778, PubMed:23279204, PubMed:<a

href="http://www.uniprot.org/citations/32302570" target="_blank">32302570, PubMed:32302571, PubMed:32302572, PubMed:34739333, PubMed:35977029, PubMed:36183834, PubMed:36279435, PubMed:36692217, PubMed:37379838). Stress granules are membraneless compartments that store mRNAs and proteins, such as stalled translation pre-initiation complexes, in response to stress (PubMed:12642610, PubMed:20180778, PubMed:23279204, PubMed:27022092, PubMed:32302570, PubMed:32302571, PubMed:32302572, PubMed:36279435, PubMed: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, 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: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)

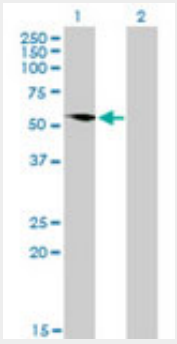
Tissue Location
Ubiquitous..

G3BP1 / G3BP Antibody (clone 2F3) - Protocols

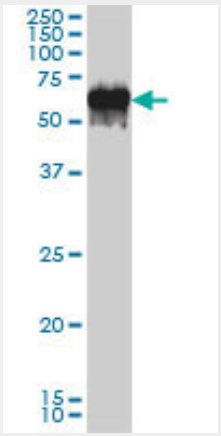
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

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.

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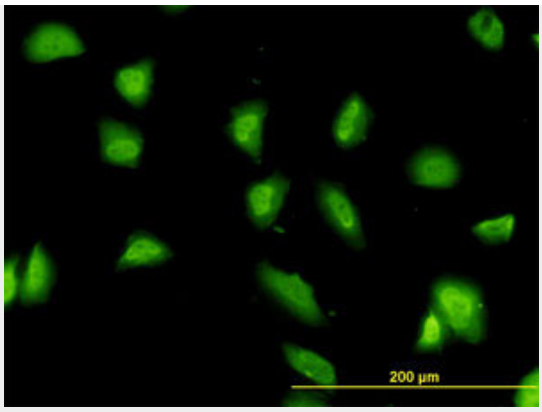
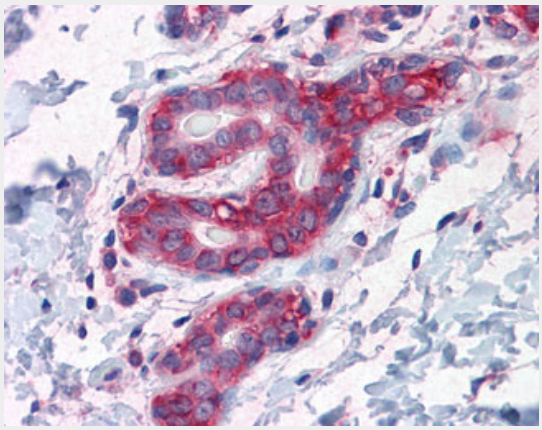
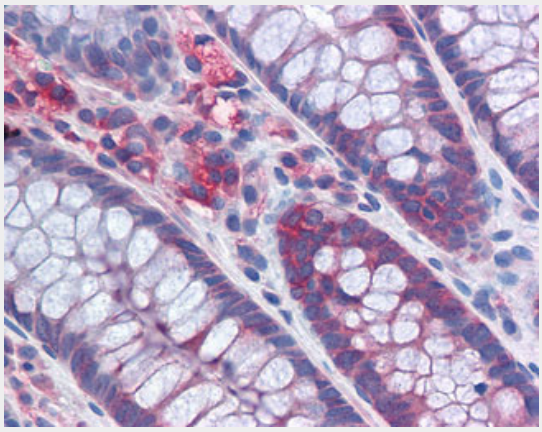


Immunofluorescence of monoclonal antibody to G3BP on HeLa cell (antibody concentration 10 ug/ml).



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.