

G3BP1 Antibody (C-term) Blocking peptide
Synthetic peptide
Catalog # BP13785b

Specification

G3BP1 Antibody (C-term) Blocking peptide - Product Information

Primary Accession [Q13283](#)

G3BP1 Antibody (C-term) Blocking peptide - Additional Information

Gene ID 10146

Other Names

Ras GTPase-activating protein-binding protein 1, G3BP-1, ATP-dependent DNA helicase VIII, hDH VIII, GAP SH3 domain-binding protein 1, G3BP1, G3BP

Target/Specificity

The synthetic peptide sequence used to generate the antibody AP13785b was selected from the C-term region of G3BP1. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

G3BP1 Antibody (C-term) Blocking peptide - 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:32302570, PubMed:32302571, PubMed:<a

[32302572](http://www.uniprot.org/citations/32302572), PubMed: [36183834](http://www.uniprot.org/citations/36183834), PubMed: [36279435](http://www.uniprot.org/citations/36279435), PubMed: [34739333](http://www.uniprot.org/citations/34739333), 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: [36692217](http://www.uniprot.org/citations/36692217), PubMed: [36279435](http://www.uniprot.org/citations/36279435)). 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 Antibody (C-term) Blocking peptide - Protocols

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

- [Blocking Peptides](#)

G3BP1 Antibody (C-term) Blocking peptide - Images

G3BP1 Antibody (C-term) Blocking peptide - Background

This gene encodes one of the DNA-unwinding enzymes which prefers partially unwound 3'-tailed substrates and can also unwind partial RNA/DNA and RNA/RNA duplexes in an ATP-dependent fashion. This enzyme is a member of the heterogeneous nuclear RNA-binding proteins and is also an element of the Ras signal transduction pathway. It binds specifically to the Ras-GTPase-activating protein by associating with its SH3 domain. Several alternatively spliced transcript variants of this gene have been described, but the full-length nature of some of these variants has not been determined.

G3BP1 Antibody (C-term) Blocking peptide - References

Gao, X., et al. FEBS Lett. 584(16):3525-3532(2010) Ortega, A.D., et al. J. Cell. Sci. 123 (PT 16), 2685-2696 (2010) :Hinton, S.D., et al. Biochem. J. 427(3):349-357(2010) Shim, J.H., et al. Cancer Prev Res (Phila) 3(5):670-679(2010) Zhang, H.Z., et al. World J. Gastroenterol. 13(30):4126-4130(2007)