

[KD]G3BP Rabbit mAb

Catalog # AP76799

Product Information

Application	WB, IHC-P, FC, IP
Primary Accession	Q13283
Reactivity	Human
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Purification	Affinity Purified
Calculated MW	52164

Additional Information

Gene ID	10146
Other Names	G3BP1
Dilution	WB~~1:1000 IHC-P~~N/A FC~~1:10~50 IP~~N/A
Format	Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

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: 37672657 , PubMed: 20180778 , PubMed: 23279204 , PubMed: 30510222 , PubMed: 30804210). Plays an essential role in stress granule formation (PubMed: 37672657 , PubMed: 20180778 , PubMed: 23279204 , PubMed: 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: 37672657 , 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:[37672657](#), PubMed:[20180778](#)). The unphosphorylated form is recruited to stress granules (PubMed:[37672657](#)). HRAS signaling contributes to this process by regulating G3BP dephosphorylation (PubMed:[37672657](#))

Tissue Location

Ubiquitous..

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.

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