

G3BP Antibody

Rabbit mAb Catalog # AP92285

Product Information

Application WB, IHC, IF, FC, ICC, IP, IHF

Primary Accession Q13283

Reactivity Rat, Human, Mouse

Clonality Monoclonal

Other Names G3BP; G3bp1; hDH VIII;

IsotypeRabbit IgGHostRabbitCalculated MW52164

Additional Information

Dilution WB 1:500~1:2000 IHC 1:50~1:200 ICC/IF 1:50~1:200 IP 1:20 FC 1:50

Purification Affinity-chromatography

ImmunogenA synthesized peptide derived from human G3BPDescriptionMay 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.

Storage Condition and Buffer Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium

azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term.

Avoid freeze / thaw cycle.

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:<u>12642610</u>, PubMed:<u>20180778</u>, PubMed:<u>23279204</u>, PubMed:<u>32302570</u>, PubMed:<u>32302571</u>, PubMed:<u>32302572</u>, PubMed:<u>34739333</u>, PubMed:<u>35977029</u>, PubMed:<u>36183834</u>, PubMed:<u>36279435</u>, PubMed:<u>36692217</u>,

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:<u>23279204</u>, PubMed:<u>27022092</u>, PubMed:<u>32302570</u>, PubMed:<u>32302571</u>, PubMed:<u>32302572</u>, PubMed:<u>36279435</u>,

PubMed: <u>37379838</u>). 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).

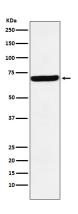
Cellular Location

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..

Images



Western blot analysis of G3BP expression in Hela cell lysate.

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