

# G3BP1 Polyclonal Antibody

Catalog # AP69991

## Product Information

<b>Application</b>	WB, IHC-P, IF, ICC, E
<b>Primary Accession</b>	<a href="#">Q13283</a>
<b>Reactivity</b>	Human, Mouse, Monkey
<b>Host</b>	Rabbit
<b>Clonality</b>	Polyclonal
<b>Calculated MW</b>	52164

## Additional Information

<b>Gene ID</b>	10146
<b>Other Names</b>	G3BP1; G3BP; Ras GTPase-activating protein-binding protein 1; G3BP-1; ATP-dependent DNA helicase VIII; hDH VIII; GAP SH3 domain-binding protein 1
<b>Dilution</b>	WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/10000. Not yet tested in other applications. IHC-P~~N/A IF~~1:50~200 ICC~~N/A E~~N/A
<b>Format</b>	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
<b>Storage Conditions</b>	-20°C

## Protein Information

<b>Name</b>	G3BP1 {ECO:0000303 PubMed:23279204, ECO:0000312 HGNC:HGNC:30292}
<b>Function</b>	Protein involved in various processes, such as stress granule formation and innate immunity (PubMed: <a href="#">12642610</a> , PubMed: <a href="#">20180778</a> , PubMed: <a href="#">23279204</a> , PubMed: <a href="#">30510222</a> , PubMed: <a href="#">30804210</a> ). Plays an essential role in stress granule formation (PubMed: <a href="#">12642610</a> , PubMed: <a href="#">20180778</a> , PubMed: <a href="#">23279204</a> , PubMed: <a href="#">32302570</a> , PubMed: <a href="#">32302571</a> , PubMed: <a href="#">32302572</a> , PubMed: <a href="#">34739333</a> , PubMed: <a href="#">35977029</a> , PubMed: <a href="#">36183834</a> , PubMed: <a href="#">36279435</a> , PubMed: <a href="#">36692217</a> , PubMed: <a href="#">37379838</a> ). Stress granules are membraneless compartments that store mRNAs and proteins, such as stalled translation pre-initiation complexes, in response to stress (PubMed: <a href="#">12642610</a> , PubMed: <a href="#">20180778</a> , PubMed: <a href="#">23279204</a> , PubMed: <a href="#">27022092</a> , PubMed: <a href="#">32302570</a> , PubMed: <a href="#">32302571</a> , PubMed: <a href="#">32302572</a> , PubMed: <a href="#">36279435</a> , PubMed: <a href="#">37379838</a> ). 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](#))

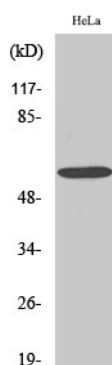
### Tissue Location

Ubiquitous..

## Background

ATP- and magnesium-dependent helicase (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](#)). 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](#)). Phosphorylation-dependent sequence-specific endoribonuclease in vitro (PubMed:[11604510](#)). Cleaves exclusively between cytosine and adenine and cleaves MYC mRNA preferentially at the 3'-UTR (PubMed:[11604510](#)). May be a regulated effector of stress granule assembly (PubMed:[12642610](#), PubMed:[20180778](#)).

## Images



Western Blot analysis of various cells using G3BP1 Polyclonal Antibody

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