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Product Information

Anti-phospho-G3BP (pSer^{149})
produced in rabbit, affinity isolated antibody

Product Number **G8046**

Product Description

Anti-phospho-G3BP (pSer^{149}), is produced in rabbit using as immunogen a synthetic phosphopeptide corresponding to a fragment containing (pSer^{149}) of human G3BP (GeneID: 10146) conjugated to KLH. The corresponding sequence is identical in rat and mouse. The antibody is affinity-purified using the immunizing peptide immobilized on agarose, and then further purified by specific absorption on the corresponding non-phosphorylated G3BP peptide, to remove undesired antibodies to non-phosphorylated G3BP.

Anti-phospho-G3BP (pSer^{149}) recognizes phosphorylated human G3BP (not yet tested in other species). The antibody may be used in several techniques including immunoblotting (~68 kDa). Detection of phospho-G3BP (pSer^{149}) by immunoblotting is specifically inhibited with the immunizing peptide and is not inhibited with the corresponding non-phosphorylated-peptide.

G3BP (Ras-GTPase-activating protein SH3 domain-binding protein 1) is a phosphorylation-dependent single-strand-specific endoribonuclease that exclusively cleaves between cytosine and adenine (CA).[1-2] G3BP interacts with RasGAP in dividing cells, linking between a RasGAP-mediated signaling pathway and RNA turnover.[3] G3BP is an evolutionarily conserved RNA-binding protein. It contains a carboxyl- terminal RNA binding domain, the RRM-type domain, an amino-terminal domain homologous to nuclear transporter factor 2 (NTF2), and a central domain rich in acidic residues. The RRM domain mediates the binding of G3BP to specific RNA sequences so G3BP can exert its function as a CA dinucleotide-specific endoribonuclease.[2] Phosphorylation of G3BP at Ser^{149}, which is 20 amino acids C terminal to the NTF2-like domain, plays a key role in mediating protein-protein interactions and in controlling G3BP's subcellular localization.[4]

G3BP is involved in the assembly of stress granules (SGs).[5] SGs are dynamic cytoplasmic structures that play a critical role in the regulation of mRNA metabolism during stress.[6] The N-terminal NTF2-like domain and the RNA-binding domain of G3BP mediate its recruitment to SGs. Dephosphorylation of Ser^{149} leads to oligomerization and SG assembly.[5] G3BP is overexpressed in many kinds of malignant tumors such as lung cancer, colon cancer, gastric cancer, and breast cancer. The level of G3BP expression in breast cancer specimens correlates positively with the presence of lymph node metastasis.[7]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 5-10 μg/mL is recommended using a whole extract of human K562 and HeLa cells.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration..

References

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VS,ST,KAA,PHC,MAM 01/19-1