

# p-G3BP1 (Ser 232): sc-101684

## BACKGROUND

G3BP1 (GTPase activating protein (SH3 domain) binding protein 1), also known as G3BP or HDH-VIII, is a ubiquitously expressed protein that localizes to the cytoplasm in proliferating cells and to the nucleus in non-proliferating cells. One of several DNA-unwinding enzymes, G3BP1 functions as a sequence-specific, phosphorylation-dependent helicase that unwinds partial RNA and DNA duplexes containing hanging 3'- or 5'- ends. G3BP1 uses magnesium as a cofactor and, in addition to its helicase activity, acts as an endoribonuclease that cleaves mRNA between adenine and cytosine residues at the 3'-UTR. An element of the Ras signaling pathway, G3BP1 binds to the SH3 domain of Ras GTPase-activating protein (Ras GAP) in proliferating cells, thereby regulating Ras signaling events in developing tissues. Human G3BP1 can be phosphorylated on specific serine residues, producing a phosphoprotein (p-G3BP1) that may have a different conformation and/or localization than endogenous G3BP1. Due to its involvement in both DNA replication and signaling pathways within the cell, G3BP1 expression is implicated in the pathogenesis of several cancers, including esophageal squamous carcinoma.

## REFERENCES

1. Parker, F., et al. 1996. A Ras-GTPase-activating protein SH3-domain-binding protein. *Mol. Cell. Biol.* 16: 2561-2569.
2. Costa, M., et al. 1999. Human DNA helicase VIII: a DNA and RNA helicase corresponding to the G3BP protein, an element of the Ras transduction pathway. *Nucleic Acids Res.* 27: 817-821.
3. Tourrière, H., et al. 2001. RasGAP-associated endoribonuclease G3Bp: selective RNA degradation and phosphorylation-dependent localization. *Mol. Cell. Biol.* 21: 7747-7760.
4. Soncini, C., et al. 2001. RasGAP SH3 domain binding protein (G3BP) is a modulator of USP10, a novel human ubiquitin specific protease. *Oncogene* 20: 3869-3879.
5. Tourrière, H., et al. 2003. The RasGAP-associated endoribonuclease G3BP assembles stress granules. *J. Cell Biol.* 160: 823-831.
6. Irvine, K., et al. 2004. Rasputin, more promiscuous than ever: a review of G3BP. *Int. J. Dev. Biol.* 48: 1065-1077.
7. Zhang, H.Z., et al. 2007. Expression of G3BP and RhoC in esophageal squamous carcinoma and their effect on prognosis. *World J. Gastroenterol.* 13: 4126-4130.

## CHROMOSOMAL LOCATION

Genetic locus: G3BP1 (human) mapping to 5q33.1.

## SOURCE

p-G3BP1 (Ser 232) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 232 of G3BP1 of human origin.

## PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

p-G3BP1 (Ser 232) is recommended for detection of Ser 232 phosphorylated G3BP1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 µg per 100–500 µg of total protein (1 ml of cell lysate)], immunofluorescence and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for G3BP1 siRNA (h): sc-75076.

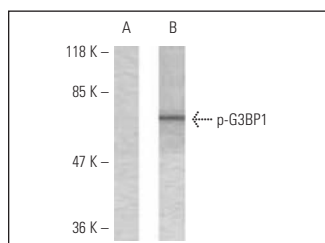
Molecular Weight of p-G3BP1: 68 kDa.

Positive Controls: human breast carcinoma tissue or 293 whole cell lysate.

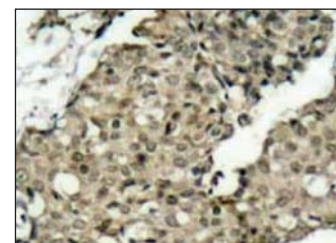
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



Western blot analysis of phosphorylated G3BP1 expression in 293 whole cell lysate (A,B). Blots were probed with p-G3BP1 (Ser 232): sc-101684 preincubated with cognate phosphorylated peptide (A) and p-G3BP1 (Ser 232): sc-101684 (B).



p-G3BP1 (Ser 232): sc-101684. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing cytoplasmic staining.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.