

# G3BP1 (P-18): sc-70286

## 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. 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. Ras-GAP 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; G3bp1 (mouse) mapping to 11 B1.3.

## SOURCE

G3BP1 (P-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of G3BP1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-70286 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

G3BP1 (P-18) is recommended for detection of G3BP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

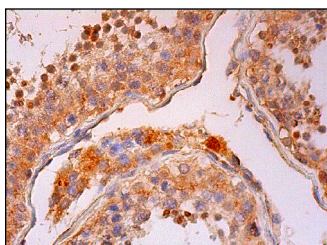
G3BP1 (P-18) is also recommended for detection of G3BP1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for G3BP1 siRNA (h): sc-75076, G3BP1 siRNA (m): sc-75077, G3BP1 shRNA Plasmid (h): sc-75076-SH, G3BP1 shRNA Plasmid (m): sc-75077-SH, G3BP1 shRNA (h) Lentiviral Particles: sc-75076-V and G3BP1 shRNA (m) Lentiviral Particles: sc-75077-V.

Molecular Weight of G3BP1: 68 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, K-562 whole cell lysate: sc-2203 or Jurkat whole cell lysate: sc-2204.

## DATA



G3BP1 (P-18): sc-70286. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic and nuclear staining of cells in glomeruli and cytoplasmic staining of cells in tubules.

## 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.



Try **G3BP1 (H-10): sc-365338** or **G3BP1 (TT-Y): sc-81940**, our highly recommended monoclonal alternatives to G3BP1 (P-18). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **G3BP1 (H-10): sc-365338**.