SANTA CRUZ BIOTECHNOLOGY, INC.

p-BRIP1 (Ser 994): sc-32840

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Genes that contribute to tumorigenesis can be broadly classified as either gatekeepers or caretakers. Genes in the gatekeeper class directly regulate cell division or cell death, and their alteration results in the uncontrolled cellular proliferation that characterizes tumor cells. Genes in the caretaker class are involved in DNA metabolic processes and are responsible for maintaining the overall stability of the genome. An unusual mutator phenotype in *Caenorhabditis elegans*, characterized by deletions that start around the 3' end of polyguanine tracts and terminate at variable positions 5' from such tracts, results from disruption of a gene that encodes BRIP1 (also designated BACH1 or BRCA1-associated carboxy-terminal helicase-1). BRCA1 interacts *in vivo* with BRIP1, a member of the DEAH helicase family. BRIP1 contains the seven helicase-specific motifs that are conserved among members of the DEAH family, and the helicase domain includes a nuclear localization signal. BRIP1 is ubiquitously expressed with highest levels in testis, an expression pattern similar to that of BRCA1. BRIP1 binds directly to the BRCT repeats of BRCA1 and the BRIP1-BRCA1 complex formation contributes to a key BRCA1 activity. BRIP1 is required to resolve the secondary structures of guanine-rich DNA that occasionally form during lagging-strand DNA synthesis. Phosphorylated BRIP1/BACH1 binds directly to the BRCT domain of BRCA1. This interaction is dependent on the phosphorylation of BRIP1/BACH1 at Ser 990, and is required for DNA damage-induced checkpoint control during the G_2 to M phase transition of the cell cycle.

REFERENCES

1. Cantor, S., et al. 2001. BACH1, a novel helicase-like protein, interacts directly with BRCA1 and contributes to its DNA repair function. Cell 105: 149-160.
2. Liu, Y., et al. 2002. Distinct functions of BRCA1 and BRCA2 in double-strand break repair. Breast Cancer Res. 4: 9-13.
3. Yu, X., et al. 2003. The BRCT domain is a phosphoprotein binding domain. Science 302: 639-642.
4. Rodriguez, M., et al. 2003. Phosphopeptide binding specificities of BRCA1 COOH-terminal (BRCT) domains. J. Biol. Chem. 278: 52914-52918.

CHROMOSOMAL LOCATION

Genetic locus: Brip1 (mouse) mapping to 11 C.

SOURCE

p-BRIP1 (Ser 994) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 994 of BRIP1 of mouse 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-32840 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-BRIP1 (Ser 994) is recommended for detection of Ser 994 phosphorylated BRIP1 of mouse 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 (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for BRIP1 siRNA (m): sc-61836, BRIP1 shRNA Plasmid (m): sc-61836-SH and BRIP1 shRNA (m) Lentiviral Particles: sc-61836-V.

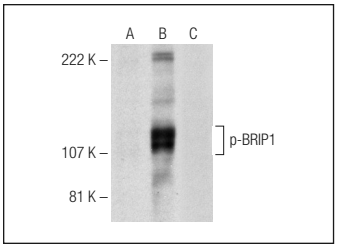
Molecular Weight of p-BRIP1: 140 kDa.

Positive Controls: mouse spleen extract: sc-2391.

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), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 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.

DATA



Western blot analysis of BRIP1 phosphorylation in untreated (**A**), calyculin A treated (**B**) and calyculin A and lambda protein phosphatase (sc-200312A) treated (**C**) SH-SY5Y whole cell lysates. Antibody tested is p-BRIP1 (Ser 994): sc-32840 (**A**,**B**,**C**).

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 or our catalog for detailed protocols and support products.