SANTA CRUZ BIOTECHNOLOGY, INC.

Herc1 (P-16): sc-162935

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

One of the largest human proteins, Herc1, also designated p532 or p619, is a 4,861 amino acid protein that contains a variety of functional domains, including WD repeats, RCC1 repeats, β-repeat domains and one HECT domain. Herc1 is ubiquitously expressed in human and mouse tissues and is overexpressed in several human tumor cell lines. It localizes to the cytosol and the Golgi apparatus, where it acts as a guanine nucleotide exchange factor on ARF1 and Rab proteins to mediate membrane trafficking. Herc1 also is involved in proliferation and growth through its interactions with clathrin, M2-pyruvate kinase and TSC2 proteins. Mutations in the TSC2 protein allow for binding to Herc1 in the presence of TSC1, which destabilizes the TSC2 protein. This results in tuberous sclerosis complex (TSC), an autosomal dominant disease characterized by hamartoma formation in various organs.

REFERENCES

1. Rosa, J.L., et al. 1996. p619, a giant protein related to the chromosome condensation regulator RCC1, stimulates guanine nucleotide exchange on ARF1 and Rab proteins. EMBO J. 15: 4262-4273.
2. Rosa, J.L., et al. 1997. A giant protein that stimulates guanine nucleotide exchange on ARF1 and Rab proteins forms a cytosolic ternary complex with clathrin and Hsp 70. Oncogene 15: 1-6.
3. Cruz, C., et al. 1999. Assignment of the human P532 gene (Herc1) to chromosome 15q22 by fluorescence *in situ* hybridization. Cytogenet. Cell Genet. 86: 68-69.
4. Garcia-Gonzalo, F.R., et al. 2003. Interaction between Herc1 and M2-type pyruvate kinase. FEBS Lett. 539: 78-84.
5. Garcia-Gonzalo, F.R., et al. 2004. The giant protein Herc1 is recruited to aluminum fluoride-induced actin-rich surface protrusions in HeLa cells. FEBS Lett. 559: 77-83.
6. Garcia-Gonzalo, F.R., et al. 2005. Requirement of phosphatidylinositol-4,5-bisphosphate for HERC1-mediated guanine nucleotide release from ARF proteins. FEBS Lett. 579: 343-348.
7. Chong-Kopera, H., et al. 2006. TSC1 stabilizes TSC2 by inhibiting the interaction between TSC2 and the Herc1 ubiquitin ligase. J. Biol. Chem. 281: 8313-8316.
8. Mashimo, T., et al. 2009. Progressive Purkinje cell degeneration in tambaleante mutant mice is a consequence of a missense mutation in Herc1 E3 ubiquitin ligase. PLoS Genet. 5: e1000784.

CHROMOSOMAL LOCATION

Genetic locus: HERC1 (human) mapping to 15q22.31; Herc1 (mouse) mapping to 9 C.

SOURCE

Herc1 (P-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Herc1 of human origin.

RESEARCH USE

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

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-162935 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Herc1 (P-16) is recommended for detection of Herc1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other Herc family members.

Herc1 (P-16) is also recommended for detection of Herc1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Herc1 siRNA (h): sc-90102, Herc1 siRNA (m): sc-145943, Herc1 shRNA Plasmid (h): sc-90102-SH, Herc1 shRNA Plasmid (m): sc-145943-SH, Herc1 shRNA (h) Lentiviral Particles: sc-90102-V and Herc1 shRNA (m) Lentiviral Particles: sc-145943-V.

Molecular Weight of Herc1: 532 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.