

Herc4 (N-13): sc-164579

BACKGROUND

Ubiquitination is an important mechanism through which three classes of enzymes act in concert to target short-lived or abnormal proteins for destruction. The three classes of enzymes involved in ubiquitination are the ubiquitin-activating enzymes (E1s), the ubiquitin-conjugating enzymes (E2s) and the ubiquitin-protein ligases (E3s). Herc4 (HECT domain and RCC1-like domain-containing protein 4) is a 1,057 amino acid cytoplasmic protein that contains one HECT domain and 7 RCC1 repeats. Involved in the pathway of protein modification, Herc4 is thought to function as an E3 ubiquitin-protein ligase that accepts ubiquitin (in the form of a thioester) from an E2 ubiquitin-conjugating enzyme and transfers that ubiquitin residue to substrates targeted for degradation. With highest expression in testis during spermatogenesis, Herc4 is required for proper maturation and removal of the cytoplasmic droplet in order for spermatozoan to become fully functional. There are six isoforms of Herc4 that are produced as a result of alternative splicing events.

REFERENCES

1. Garcia-Gonzalo, F.R., et al. 2005. The HERC proteins: functional and evolutionary insights. *Cell. Mol. Life Sci.* 62: 1826-1838.
2. Hochrainer, K., et al. 2005. The human HERC family of ubiquitin ligases: novel members, genomic organization, expression profiling, and evolutionary aspects. *Genomics* 85: 153-164.
3. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609248. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Rodriguez, C.I., et al. 2007. Disruption of the ubiquitin ligase HERC4 causes defects in spermatozoan maturation and impaired fertility. *Dev. Biol.* 312: 501-508.
5. Mahlknecht, U., et al. 2009. Chromosomal characterization and localization of the NAD⁺-dependent histone deacetylase gene sirtuin 1 in the mouse. *Int. J. Mol. Med.* 23: 245-252.

CHROMOSOMAL LOCATION

Genetic locus: HERC4 (human) mapping to 10q21.3; Herc4 (mouse) mapping to 10 B4.

SOURCE

Herc4 (N-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Herc4 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-164579 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Herc4 (N-13) is recommended for detection of Herc4 of mouse, rat and 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 (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.

Herc4 (N-13) is also recommended for detection of Herc4 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for Herc4 siRNA (h): sc-90436, Herc4 siRNA (m): sc-145945, Herc4 shRNA Plasmid (h): sc-90436-SH, Herc4 shRNA Plasmid (m): sc-145945-SH, Herc4 shRNA (h) Lentiviral Particles: sc-90436-V and Herc4 shRNA (m) Lentiviral Particles: sc-145945-V.

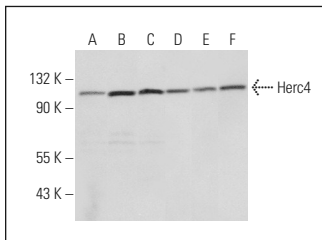
Molecular Weight of Herc4 isoforms 1-6: 119/117/110/12/13/107 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, NIH/3T3 whole cell lysate: sc-2210 or mouse testis extract: sc-2405.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



Herc4 (N-13): sc-164579. Western blot analysis of Herc4 expression in HeLa (A), HEK293 (B), NIH/3T3 (C), ACHN (D) and JAR (E) whole cell lysates and mouse testis tissue extract (F).

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.