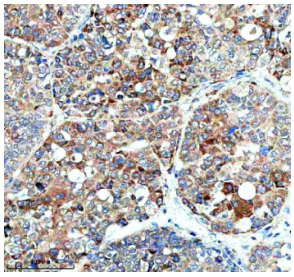
HERC4 Antibody / HECT domain and RCC1-like domain-containing protein 4 (FY12725)

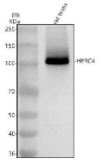
Catalog No.	Formulation	Size
FY12725	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

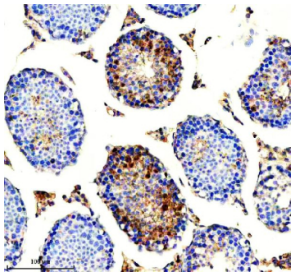
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q5GLZ8
Localization	Cytoplasm
Applications	Western Blot : 0.25-0.5ug/ml Immunohistochemistry : 2-5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This HERC4 antibody is available for research use only.



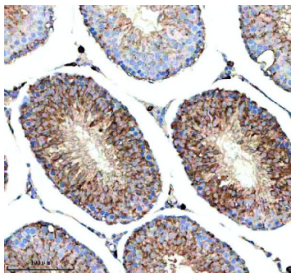
Immunohistochemical staining of HERC4 using anti-HERC4 antibody. HERC4 was detected in a paraffin-embedded section of human liver cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-HERC4 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



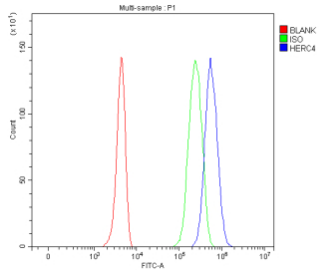
Western blot analysis of HERC4 using anti-HERC4 antibody. Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: rat testis tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-HERC4 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. A band is observed just above the 100 kDa marker, consistent with the reported anomalous migration of full-length HERC4 (predicted 119 kDa) observed for members of the HECT E3 ligase family.



Immunohistochemical staining of HERC4 using anti-HERC4 antibody. HERC4 was detected in a paraffin-embedded section of mouse testis tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-HERC4 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



Immunohistochemical staining of HERC4 using anti-HERC4 antibody. HERC4 was detected in a paraffin-embedded section of rat testis tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-HERC4 antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



Flow Cytometry analysis of 293T cells using anti-HERC4 antibody. Overlay histogram showing 293T cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-HERC4 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

Description

HERC4 antibody detects Probable E3 ubiquitin-protein ligase HERC4, a member of the HERC family of ubiquitin ligases that mediate selective protein ubiquitination and degradation. Encoded by the HERC4 gene on chromosome 10q22.1, this large enzyme (approximately 1100 amino acids) contains an N-terminal RCC1-like domain and a C-terminal HECT domain that catalyzes the transfer of ubiquitin from E2 conjugating enzymes to target substrates. Through this mechanism, HERC4 regulates diverse cellular processes including DNA repair, mitochondrial quality control, and spermatogenesis. As a multifunctional E3 ligase, it controls protein turnover and signaling by directing specific substrates to the proteasome for degradation.

HERC4 expression is widespread but most pronounced in testis, brain, and skeletal muscle. Functional studies have demonstrated roles in germ cell differentiation and embryonic development. In the testis, HERC4 localizes to elongating spermatids and regulates ubiquitin-dependent remodeling of proteins essential for sperm maturation. Loss of HERC4 in model organisms leads to male infertility and abnormal spermatid morphology, confirming its requirement for

spermatogenesis. In somatic tissues, HERC4 participates in protein quality control and signaling regulation, including modulation of TGF-beta and Wnt pathways.

The HERC4 antibody is commonly used in cell biology and reproductive biology research to detect HERC4 protein expression and localization. Western blot analysis typically reveals a 120 kilodalton band corresponding to the ligase, while immunofluorescence shows cytoplasmic and perinuclear localization consistent with its role in ubiquitin-mediated trafficking. Elevated HERC4 expression has been reported in several cancer types, including breast and liver carcinoma, where it promotes degradation of tumor suppressors and supports proliferation. Because HERC4 also influences mitochondrial dynamics, the antibody is valuable for studies examining proteostasis, signaling, and metabolism.

Mechanistically, HERC4 acts through its HECT domain to catalyze the formation of polyubiquitin chains, often targeting regulatory proteins involved in stress response and apoptosis. It interacts with molecular chaperones and ubiquitin ligase adaptors to fine-tune degradation specificity. Dysregulation of HERC4 activity leads to aberrant protein accumulation and altered signaling balance. The HERC4 antibody is therefore a versatile tool for exploring E3 ligase function in development, reproduction, and cancer biology. NSJ Bioreagents provides this antibody validated for its applications, ensuring specificity for HERC4 across human and model systems.

Application Notes

Optimal dilution of the HERC4 antibody should be determined by the researcher.

Immunogen

E.coli-derived human HERC4 recombinant protein (Position: D18-I1057) was used as the immunogen for the HERC4 antibody.

Storage

After reconstitution, the HERC4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.