

RNF123 (N-13): sc-100116

BACKGROUND

The RING-type zinc finger motif is present in a number of viral and eukaryotic proteins and is made of a conserved cysteine-rich domain that is able to bind two zinc atoms. Proteins that contain this conserved domain are generally involved in protein-protein interactions and protein-DNA interactions. RNF123 (RING finger protein 123), also known as KPC1 (p27^{Kip1} ubiquitination-promoting complex protein 1) or FP1477, contains one RING-type zinc finger domain and one SPRY domain. Localizing to the cytoplasm, RNF123 functions as the catalytic component of the KPC complex that acts as an E3 ubiquitin-protein ligase. Specifically, RNF123 is essential for the ubiquitination and subsequent degradation of p27 during the cell cycle G₁ phase. Via its N-terminus, RNF123 is known to interact with GBDR1 (another component of the KPC) and p27 (a cyclin-dependent kinase inhibitor). Due to alternative splicing events, two isoforms exist for RNF123.

REFERENCES

1. Kamura, T., et al. 2004. Cytoplasmic ubiquitin ligase KPC regulates proteolysis of p27^{Kip1} at G₁ phase. *Nat. Cell Biol.* 6: 1229-1235.
2. Kotoshiba, S., et al. 2005. Molecular dissection of the interaction between p27 and Kip1 ubiquitylation-promoting complex, the ubiquitin ligase that regulates proteolysis of p27 in G₁ phase. *J. Biol. Chem.* 280: 17694-17700.
3. Hara, T., et al. 2005. Role of the UBL-UBA protein KPC2 in degradation of p27 at G₁ phase of the cell cycle. *Mol. Cell. Biol.* 25: 9292-9303.
4. Kotoshiba, S., et al. 2005. The degradation of p27 and cancer. *Nippon Rinsho* 63: 2047-2056.
5. Parcellier, A., et al. 2006. HSP27 favors ubiquitination and proteasomal degradation of p27^{Kip1} and helps S-phase re-entry in stressed cells. *FASEB J.* 20: 1179-1181.
6. Hattori, T., et al. 2007. Pirh2 promotes ubiquitin-dependent degradation of the cyclin-dependent kinase inhibitor p27^{Kip1}. *Cancer Res.* 67: 10789-10795.
7. Nakakuki, M., et al. 2007. A transcription factor of lipid synthesis, sterol regulatory element-binding protein (SREBP)-1 α causes G₁ cell-cycle arrest after accumulation of cyclin-dependent kinase (cdk) inhibitors. *FEBS J.* 274: 4440-4452.
8. Lee, J.G., et al. 2008. Involvement of two distinct ubiquitin E3 ligase systems for p27 degradation in corneal endothelial cells. *Invest. Ophthalmol. Vis. Sci.* 49: 189-196.

CHROMOSOMAL LOCATION

Genetic locus: RNF123 (human) mapping to 3p21.31; Rnf123 (mouse) mapping to 9 F2.

SOURCE

RNF123 (N-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of RNF123 of human origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-100116 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

RNF123 (N-13) is recommended for detection of RNF123 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).

RNF123 (N-13) is also recommended for detection of RNF123 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for RNF123 siRNA (h): sc-78247, RNF123 siRNA (m): sc-153006, RNF123 shRNA Plasmid (h): sc-78247-SH, RNF123 shRNA Plasmid (m): sc-153006-SH, RNF123 shRNA (h) Lentiviral Particles: sc-78247-V and RNF123 shRNA (m) Lentiviral Particles: sc-153006-V.

Molecular Weight of RNF123: 140 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.

SELECT PRODUCT CITATIONS

1. Shi, P., et al. 2011. Dihydrotestosterone induces p27 degradation via direct binding with SKP2 in ovarian and breast cancer. *Int. J. Mol. Med.* 28: 109-114.

RESEARCH USE

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



Try **RNF123 (267.1): sc-101122**, our highly recommended monoclonal alternative to RNF123 (N-13).