

RNF213 (5C12): sc-293391

BACKGROUND

The RING-type zinc finger motif is present in a number of viral and eukaryotic proteins and is made up of a conserved cysteine-rich domain that is able to bind two zinc atoms. Proteins that contain this conserved domain are generally involved in the ubiquitination pathway of protein degradation. RNF213 (ring finger protein 213), also known as NET57, is a 3,280 amino acid protein containing one RING-type zinc finger domain through which it may play a role in transcriptional regulation and protein degradation. RNF213 is encoded by a gene located on human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. Tumor suppressor p53 is necessary for maintenance of cellular genetic integrity by moderating cell fate through DNA repair versus cell death. Malfunction or loss of p53 expression is associated with malignant cell growth and Li-Fraumeni syndrome. Like p53, BRCA1 is directly involved in DNA repair, though specifically it is recognized as a genetic determinant of early onset breast cancer and predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes.

REFERENCES

1. Freemont, P.S. 1993. The RING finger. A novel protein sequence motif related to the zinc finger. *Ann. N.Y. Acad. Sci.* 684: 174-192.
2. Borden, K.L., et al. 1996. The RING finger domain: a recent example of a sequence-structure family. *Curr. Opin. Struct. Biol.* 6: 395-401.
3. Saurin, A.J., et al. 1996. Does this have a familiar RING? *Trends Biochem. Sci.* 21: 208-214.
4. Lorick, K.L., et al. 1999. RING fingers mediate ubiquitin-conjugating enzyme (E2)-dependent ubiquitination. *Proc. Natl. Acad. Sci. USA* 96: 11364-11369.
5. Nusbaum, R., et al. 2006-2007. Susceptibility to breast cancer: hereditary syndromes and low penetrance genes. *Breast Dis.* 27: 21-50.
6. Suela, J., et al. 2007. Neurofibromatosis 1, and Not TP53, seems to be the main target of chromosome 17 deletions in *de novo* acute myeloid leukemia. *J. Clin. Oncol.* 25: 1151-1152.
7. Tai, Y.C., et al. 2007. Breast cancer risk among male BRCA1 and BRCA2 mutation carriers. *J. Natl. Cancer Inst.* 99: 1811-1814.

CHROMOSOMAL LOCATION

Genetic locus: RNF213 (human) mapping to 17q25.3.

SOURCE

RNF213 (5C12) is a mouse monoclonal antibody raised against amino acids 2016-2112 of RNF213 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

RNF213 (5C12) is recommended for detection of RNF213 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

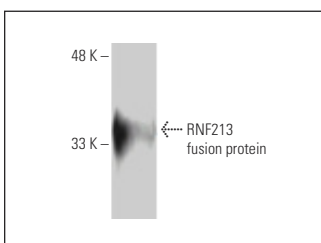
Suitable for use as control antibody for RNF213 siRNA (h): sc-94184, RNF213 shRNA Plasmid (h): sc-94184-SH and RNF213 shRNA (h) Lentiviral Particles: sc-94184-V.

Molecular Weight of RNF213: 591 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



RNF213 (5C12): sc-293391. Western blot analysis of human recombinant RNF213 fusion protein.

SELECT PRODUCT CITATIONS

1. Wang, X., et al. 2020. RNF213 suppresses carcinogenesis in glioblastoma by affecting MAPK/JNK signaling pathway. *Clin. Transl. Oncol.* 22: 1506-1516.
2. Thery, F., et al. 2021. Ring finger protein 213 assembles into a sensor for ISGylated proteins with antimicrobial activity. *Nat. Commun.* 12: 5772.
3. Kacal, M., et al. 2021. Quantitative proteomic analysis of temporal lysosomal proteome and the impact of the KFERQ-like motif and LAMP2A in lysosomal targeting. *Autophagy* 17: 3865-3874.
4. Chen, Y., et al. 2023. Novel signaling axis of FHOD1-RNF213-Col1α/Col3α in the pathogenesis of hypertension-induced tunica media thickening. *J. Mol. Cell. Cardiol.* 182: 57-72.

STORAGE

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