

# RNF20 (1594CT552.128.36): sc-517358

## 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). RNF20 (ring finger protein 20), also known as BRE1, BRE1A or hBRE1, is a 975 amino acid nuclear protein that belongs to the BRE1 family. As a component of the RNF20/40 complex, RNF20 functions as an E3 ubiquitin-protein ligase that regulates the monoubiquitination and subsequent degradation of select residues on target proteins, such as Histone H2B. RNF20 is required for transcriptional activation of Hox genes and is most likely recruited by p53 to the MDM2 promoter, thereby acting as a transcriptional co-activator. RNF20 contains one zinc finger domain and exists as a homodimer.

## REFERENCES

1. Zhu, B., et al. 2005. Monoubiquitination of human Histone H2B: the factors involved and their roles in HOX gene regulation. *Mol. Cell* 20: 601-611.
2. Kim, J., et al. 2005. The human homolog of yeast BRE1 functions as a transcriptional coactivator through direct activator interactions. *Mol. Cell* 20: 759-770.
3. Shema, E., et al. 2008. The histone H2B-specific ubiquitin ligase RNF20/hBRE1 acts as a putative tumor suppressor through selective regulation of gene expression. *Genes Dev.* 22: 2664-2676.
4. Buro, L.J., et al. 2010. Menin and RNF20 recruitment is associated with dynamic histone modifications that regulate signal transducer and activator of transcription 1 (STAT1)-activated transcription of the interferon regulatory factor 1 gene (IRF1). *Epigenetics Chromatin* 3: 16.
5. Gao, Z., et al. 2011. Resveratrol induces cellular senescence with attenuated mono-ubiquitination of Histone H2B in glioma cells. *Biochem. Biophys. Res. Commun.* 407: 271-276.
6. Taniue, K., et al. 2011. A member of the ETS family, EHf, and the ATPase RUVBL1 inhibit p53-mediated apoptosis. *EMBO Rep.* 12: 682-689.
7. Zhang, F. and Yu, X. 2011. WAC, a functional partner of RNF20/40, regulates Histone H2B ubiquitination and gene transcription. *Mol. Cell* 41: 384-397.
8. Nakamura, K., et al. 2011. Regulation of homologous recombination by RNF20-dependent H2B ubiquitination. *Mol. Cell* 41: 515-528.

## CHROMOSOMAL LOCATION

Genetic locus: RNF20 (human) mapping to 9q31.1.

## SOURCE

RNF20 (1594CT552.128.36) is a mouse monoclonal antibody raised against a recombinant protein corresponding to RNF20 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

RNF20 (1594CT552.128.36) is recommended for detection of RNF20 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for RNF20 siRNA (h): sc-92753, RNF20 shRNA Plasmid (h): sc-92753-SH and RNF20 shRNA (h) Lentiviral Particles: sc-92753-V.

Molecular Weight of RNF20: 114 kDa.

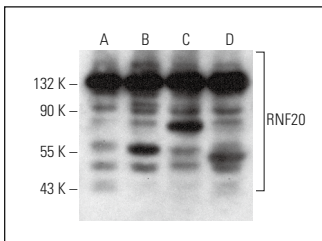
Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or U-87 MG cell lysate: sc-2411.

## 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



RNF20 (1594CT552.128.36): sc-517358. Western blot analysis of RNF20 expression in HeLa (A), Jurkat (B), HL-60 (C) and U-87 MG (D) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Fujimoto, M., et al. 2022. HSF1 phosphorylation establishes an active chromatin state via the TRRAP-TIP60 complex and promotes tumorigenesis. *Nat. Commun.* 13: 4355.
2. Feng, B., et al. 2023. ER stress modulates the immune regulatory ability in gut M2 cells of patients with ulcerative colitis. *iScience* 26: 106498.
3. Zhang, R., et al. 2023. Nuclear localization of STING1 competes with canonical signaling to activate AHR for commensal and intestinal homeostasis. *Immunity* 56: 2736-2754.e8.

## STORAGE

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

## RESEARCH USE

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