

# RNF20 (Y-16): sc-107290

## 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

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Zhang, F., et al. 2011. WAC, a functional partner of RNF20/40, regulates histone H2B ubiquitination and gene transcription. *Mol. Cell* 41: 384-397.
- Nakamura, K., et al. 2011. Regulation of homologous recombination by RNF20-dependent H2B ubiquitination. *Mol. Cell* 41: 515-528.
- Shema, E., et al. 2011. RNF20 inhibits TFIIIS-facilitated transcriptional elongation to suppress pro-oncogenic gene expression. *Mol. Cell* 42: 477-488.

## CHROMOSOMAL LOCATION

Genetic locus: RNF20 (human) mapping to 9q31.1; Rnf20 (mouse) mapping to 4 B1.

## SOURCE

RNF20 (Y-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of RNF20 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-107290 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

RNF20 (Y-16) is recommended for detection of RNF20 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); non cross-reactive with other RNF family members.

Suitable for use as control antibody for RNF20 siRNA (h): sc-92753, RNF20 siRNA (m): sc-153035, RNF20 shRNA Plasmid (h): sc-92753-SH, RNF20 shRNA Plasmid (m): sc-153035-SH, RNF20 shRNA (h) Lentiviral Particles: sc-92753-V and RNF20 shRNA (m) Lentiviral Particles: sc-153035-V.

Molecular Weight of RNF20: 114 kDa.

## 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.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.