

RHINO (K-20): sc-241233

BACKGROUND

DNA damage or incomplete replication of DNA results in the inhibition of cell cycle progression at the G₁ to S or G₂ to M phase checkpoints by conserved regulatory mechanisms. RHINO (RAD9-HUS1-RAD1 interacting nuclear orphan 1), also known as RHNO1, C12orf32 or HKMT1188, is a 238 amino acid protein that plays a central role in DNA damage response and in cell cycle regulation. Strongly expressed in breast cancer cells and weakly expressed in testis, prostate, ovary, thymus and small intestine, RHINO is recruited to DNA damaged sites through interaction with 9-1-1 cell-cycle checkpoint response complex and ATR activator TopBP1. RHINO is required for cell cycle progression, specifically during G₁ to S phase transition. RHINO exists as two alternatively spliced isoforms and is encoded by a gene located on human chromosome 12p13.33.

REFERENCES

1. Scherer, S.E., et al. 2006. The finished DNA sequence of human chromosome 12. *Nature* 440: 346-351.
2. Matsuoka, S., et al. 2007. ATM and ATR substrate analysis reveals extensive protein networks responsive to DNA damage. *Science* 316: 1160-1166.
3. Kim, J.W., et al. 2010. Involvement of C12orf32 overexpression in breast carcinogenesis. *Int. J. Oncol.* 37: 861-867.
4. Cotta-Ramusino, et al. 2011. A DNA damage response screen identifies RHINO, a 9-1-1 and TopBP1 interacting protein required for ATR signaling. *Science* 332: 1313-1317.
5. Heikkinen, T., et al. 2014. Evaluation of the RHINO gene for breast cancer predisposition in Finnish breast cancer families. *Breast Cancer Res. Treat.* 144: 437-441.
6. Lindsey-Boltz, L.A., et al. 2015. RHINO forms a stoichiometric complex with the 9-1-1 checkpoint clamp and mediates ATR-Chk1 signaling. *Cell Cycle* 14: 99-108.
7. SWISS-PROT/TrEMBL (Q9BSD3). World Wide Web URL: <http://www.uniprot.org>

CHROMOSOMAL LOCATION

Genetic locus: RHNO1 (human) mapping to 12p13.33.

SOURCE

RHINO (K-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of RHINO 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.

RESEARCH USE

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

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-241233 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

RHINO (K-20) is recommended for detection of RHINO of 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).

Suitable for use as control antibody for RHINO siRNA (h): sc-95847, RHINO shRNA Plasmid (h): sc-95847-SH and RHINO shRNA (h) Lentiviral Particles: sc-95847-V.

Molecular Weight of RHINO: 35 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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.