SANTA CRUZ BIOTECHNOLOGY, INC.

RecQL4 (N-19): sc-16927

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The Power to Question

BACKGROUND

In humans, the RecQ helicase family includes WRN, BLM, RecQL1, RecQL4 and RecQL5 proteins, all of which contain a conserved helicase domain. WRN and BLM have been demonstrated to be the responsible genes in Werner and Bloom syndromes, respectively. RecQL1 and RecQL5 also belong to the human RecQ helicase family, but their correlation with genetic disorders, if any, is unknown. The gene encoding human RecQL4, which maps to chromosome 8q24.3, is believed to be the gene responsible for the development of Rothmund-Thomson syndrome (RTS). The levels of WRN, BLM, RecQL1, RecQL4 and RecQL5 are differentially upregulated to guarantee genomic stability in cells that are transformed or actively proliferating. In humans, RecQL1 and RecQL5 map to chromosome 12p12 and 17q25, respectively.

REFERENCES

1. Seki, M., et al. 1994. Molecular cloning of cDNA encoding human DNA helicase Q1 which has homology to *Escherichia coli* Rec Q helicase and localization of the gene at chromosome 12p12. Nucleic Acids Res. 22: 4566-4573.
2. Kitao, S., et al.1999. Mutations in RecQL4 cause a subset of cases of Rothmund-Thomson syndrome. Nat. Genet. 22: 82-84.
3. Ohhata, T., et al. 2000. Cloning, genomic structure and chromosomal localization of the gene encoding mouse DNA helicase RecQ helicase protein-like 4. Gene 261: 251-258.
4. Kawabe, T., et al. 2000. Differential regulation of human RecQ family helicases in cell transformation and cell cycle. Oncogene 19: 4764-4772.
5. Kawabe, Y., et al. 2000. Covalent modification of the Werner's syndrome gene product with the ubiquitin-related protein, SUMO-1. J. Biol. Chem. 275: 20963-20966.

CHROMOSOMAL LOCATION

Genetic locus: Recql4 (mouse) mapping to 15 D3.

SOURCE

RecQL4 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of RecQL4 of mouse 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-16927 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

PROTOCOLS

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

APPLICATIONS

RecQL4 (N-19) is recommended for detection of RecQL4 of mouse and rat 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 RecQL4 siRNA (m): sc-38220, RecQL4 shRNA Plasmid (m): sc-38220-SH and RecQL4 shRNA (m) Lentiviral Particles: sc-38220-V.

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. Sangrithi, M., et al. 2005. Initiation of DNA replication requires the RecQL4 protein mutated in Rothmund-Thomson syndrome. Cell 121: 887-898.
2. Yang, J., et al. 2006. RecQL4 haploinsufficiency in mice leads to defects in osteoblast progenitors: Implications for low bone mass phenotype. Biochem. Biophys. Res. Commun. 344: 346-352.

RESEARCH USE

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