SANTA CRUZ BIOTECHNOLOGY, INC.

BLM (4i317): sc-70426

BACKGROUND

Bloom's syndrome is an autosomal recessive disorder characterized by pre- and postnatal growth deficiencies, sun sensitivity, immunodeficiency and a predisposition to various cancers. The gene responsible for Bloom's syndrome, BLM, encodes a protein homologous to the RecQ helicase of *E. coli* that is mutated in most Bloom's syndrome patients. One characteristic of Bloom's syndrome is an increased frequency of sister chromatid exchange (SCE). BLM has been shown to unwind G_4 DNA, and a failure of this function is thought to be responsible for the increased rate of SCE. BLM is known to be translocated to the nucleus, where its ATPase activity is stimulated by both single- and double-stranded DNA. Mutations in the yeast SGS1, a homolog of BLM, are known to cause mitotic hyperrecombination similiar to that observed in Bloom's cells.

REFERENCES

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2. Bamezai, R. 1996. Bloom syndrome: is the gene mapped to the point? Indian J. Exp. Biol. 34: 298-301.
3. Watt, P.M., Hickson, I.D., Borts, R.H. and Louis, E.J. 1996. SGS1, a homologue of the Bloom's and Werner's syndrome genes, is required for maintenance of genome stability in *Saccharomyces*. Genetics 144: 935-945.
4. Kaneko, H., Orii, K.O., Matsui, E., Shimozawa, N., Fukao, T., Matsumoto, T., Shimamoto, A., Furuichi, Y., Hayakawa, S., Kasahara, K. and Kondo, N. 1997. BLM (the causative gene of Bloom syndrome) protein translocation into the nucleus by a nuclear localization signal. Biochem. Biophys. Res. Commun. 240: 348-353.
5. Karow, J.K., Chakraverty, R.K. and Hickson, I.D. 1997. The Bloom's syndrome gene product is a 3'-5' DNA helicase. J. Biol. Chem. 272: 30611-30614.
6. Sun, H., Karow, J.K., Hickson, I.D. and Maizels, N. 1998. The Bloom's syndrome helicase unwinds G_4 DNA. J. Biol. Chem. 273: 27587-27592.

CHROMOSOMAL LOCATION

Genetic locus: BLM (human) mapping to 15q26.1.

SOURCE

BLM (4i317) is a mouse monoclonal antibody raised against full length BLM (Bloom's syndrome protein) of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

BLM (4i317) is recommended for detection of BLM of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for BLM siRNA (h): sc-29808, BLM shRNA Plasmid (h): sc-29808-SH and BLM shRNA (h) Lentiviral Particles: sc-29808-V.

Molecular Weight of BLM: 180 kDa.

Positive Controls: K-562 nuclear extract: sc-2130.

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) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. McGuire, J.D., Gorski, J.P., Dusevich, V., Wang, Y. and Walker, M.P. 2014. Type IV collagen is a novel DEJ biomarker that is reduced by radiotherapy. J. Dental Res. 93: 1028-1034.
2. Chan, Y.W. and West, S.C. 2014. Spatial control of the GEN1 holliday junction resolvase ensures genome stability. Nat. Commun. 5: 4844.

RESEARCH USE

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

PROTOCOLS

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