SANTA CRUZ BIOTECHNOLOGY, INC.

BLM (F-5): sc-376616

BACKGROUND

Bloom's syndrome is an autosomal recessive disorder characterized by pre- and post-natal 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* and 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 G4 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

1. Ellis, N.A., et al. 1995. The Bloom's syndrome gene product is homologous to RecQ helicases. Cell 83: 655-666.
2. Bamezai, R. 1996. Bloom syndrome: is the gene mapped to the point? Indian J. Exp. Biol. 34: 298-301.
3. Watt, P.M., et al. 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., et al. 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., et al. 1997. The Bloom's syndrome gene product is a 3'-5' DNA helicase. J. Biol. Chem. 272: 30611-30614.
6. Sun, H., et al. 1998. The Bloom's syndrome helicase unwinds G4 DNA. J. Biol. Chem. 273: 27587-27592.

CHROMOSOMAL LOCATION

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

SOURCE

BLM (F-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1393-1417 at the C-terminus of BLM of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-376616 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

BLM (F-5) is recommended for detection of BLM of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

BLM (F-5) is also recommended for detection of BLM in additional species, including canine, bovine and porcine.

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.

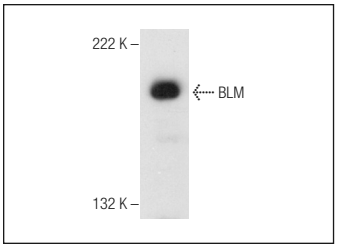
Molecular Weight of BLM: 180 kDa.

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) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



BLM (F-5): sc-376616. Western blot analysis of BLM expression in K-562 nuclear extract.

SELECT PRODUCT CITATIONS

1. Shastri, V.M., et al. 2015. Cellular defects caused by hypomorphic variants of the Bloom syndrome helicase gene BLM. Mol. Genet. Genomic Med. 4: 106-119.

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.