SANTA CRUZ BIOTECHNOLOGY, INC.

BLM hydrolase siRNA (h): sc-72654

BACKGROUND

BLM hydrolase (Bleomycin hydrolase, BLM hydrolase, BMH) is a 455 amino acid protein encoded by the human gene BLMH. BLM hydrolase belongs to the cysteine protease papain superfamily and the peptidase C1 family. It is a cytoplasmic cysteine peptidase commonly found as a homohexamer. It is highly conserved through evolution, however, the only known activity of the enzyme is metabolic inactivation of the glycopeptide bleomycin (BLM). BLM is an essential component of combination chemotherapy regimens for cancer.

REFERENCES

1. Schwartz, D.R., et al. 1999. The neutral cysteine protease bleomycin hydrolase is essential for epidermal integrity and bleomycin resistance. Proc. Natl. Acad. Sci. USA 96: 4680-4685.
2. Riva, P., et al. 2000. NF1 microdeletion syndrome: refined FISH characterization of sporadic and familial deletions with locus-specific probes. Am. J. Hum. Genet. 66: 100-109.
3. Prince, J.A., et al. 2001. Lack of replication of association findings in complex disease: an analysis of 15 polymorphisms in prior candidate genes for sporadic Alzheimer's disease. Eur. J. Hum. Genet. 9: 437-444.
4. Bentivegna, A., et al. 2001. Identification of duplicated genes in 17q11.2 using FISH on stretched chromosomes and DNA fibers. Hum. Genet. 109: 48-54.
5. Kim, S.J., et al. 2002. Transmission disequilibrium mapping at the serotonin transporter gene (SLC6A4) region in autistic disorder. Mol. Psychiatry 7: 278-288.
6. Montoya, S.E., et al. 2007. Astrogliosis and behavioral changes in mice lacking the neutral cysteine protease bleomycin hydrolase. Neuroscience 146: 890-900.

CHROMOSOMAL LOCATION

Genetic locus: BLMH (human) mapping to 17q11.2.

PRODUCT

BLM hydrolase siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see BLM hydrolase shRNA Plasmid (h): sc-72654-SH and BLM hydrolase shRNA (h) Lentiviral Particles: sc-72654-V as alternate gene silencing products.

For independent verification of BLM hydrolase (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72654A, sc-72654B and sc-72654C.

PROTOCOLS

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

BLM hydrolase siRNA (h) is recommended for the inhibition of BLM hydrolase expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

BLM hydrolase (F-9): sc-166777 is recommended as a control antibody for monitoring of BLM hydrolase gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BLM hydrolase gene expression knockdown using RT-PCR Primer: BLM hydrolase (h)-PR: sc-72654-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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