SANTA CRUZ BIOTECHNOLOGY, INC.

DNase I (m): 293T Lysate: sc-119807

BACKGROUND

Internucleosomal DNA fragmentation following the activation of endonucleases is the common end point of apoptosis. DNase I, a Ca^{2+}/Mg^{2+}-dependent endonuclease ubiquitously expressed in mammalian tissues, has been implicated to mediate internucleosomal DNA degradation in human cells undergoing apoptosis. DNase I is highly polymorphic, and at least six alleles of DNase I are known. DNase II, the ubiquitously expressed acidic deoxyribonuclease, acts downstream of caspase activation and may also induce DNA digestion during apoptosis. DNase I cleaves DNA to 5'-phosphodinucleotide and 5'-phospho-oligonucleotide end products, whereas DNase II cleaves DNA to 3'-phosphomononucleotide and 3'-phosphooligonucleotide end products. The mechanism by which DNase II cuts DNA is similar to DNase I, which produces nicks rather than double-strand cuts. DNase II is usually present in cytoplasm of epithelial cells, but it appears concentrated in the nuclei of lens fibers. In contrast, DNase I is always concentrated in nuclei of epithelial and fiber cells. The gene encoding DNase II maps to human chromosome 19.

REFERENCES

1. Torriglia, A., et al. 1995. Involvement of DNase II in nuclear degeneration during lens cell differentiation. J. Biol. Chem. 270: 28579-28585.
2. Yasuda, T., et al. 1998. Molecular cloning of the cDNA encoding human deoxyribonuclease II. J. Biol. Chem. 273: 2610-2616.
3. Krieser, R.J. and Eastman, A. 1998. The cloning and expression of human deoxyribonuclease II. A possible role in apoptosis. J. Biol. Chem. 273: 30909-30914.
4. Baker, K.P., et al. 1998. Molecular cloning and characterization of human and murine DNase II. Gene 215: 281-289.
5. Yasuda, T., et al. 1999. A new allele, DNASE1*6, of human deoxyribonuclease I polymorphism encodes an Arg to Cys substitution responsible for its instability. Biochem. Biophys. Res. Commun. 260: 280-283.
6. Oliveri, M., et al. 2001. DNase I mediates internucleosomal DNA degradation in human cells undergoing drug-induced apoptosis. Eur. J. Immunol. 31: 743-751.

CHROMOSOMAL LOCATION

Genetic locus: Dnase1 (mouse) mapping to 16 A1.

PRODUCT

DNase I (m): 293T Lysate represents a lysate of mouse DNase I transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

DNase I (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive DNase I antibodies. Recommended use: 10-20 µl per lane.

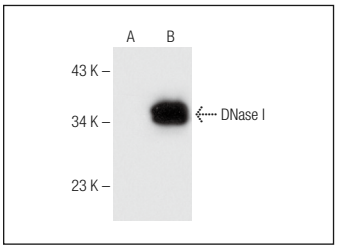
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

DNase I (D-1): sc-374207 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse DNase I expression in DNase I transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

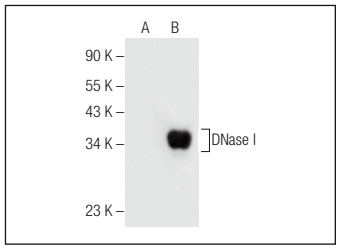
RECOMMENDED SUPPORT REAGENTS

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.

DATA



DNase I (D-1): sc-374207. Western blot analysis of DNase I expression in non-transfected: sc-117752 (**A**) and mouse DNase I transfected: sc-119807 (**B**) 293T whole cell lysates.



DNase I (B-4): sc-376207. Western blot analysis of DNase I expression in non-transfected: sc-117752 (**A**) and mouse DNase I transfected: sc-119807 (**B**) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

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.