SANTA CRUZ BIOTECHNOLOGY, INC.

DNase II (M-183): sc-366065

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'-phospho-oligonucleotide 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.

REFERENCES

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2. Yasuda, T., Takeshita, H., Iida, R., Nakajima, T., Hosomi, O., Nakashima, Y. and Kishi, K. 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., Baron, W.F., Henzel, W.J. and Spencer, S.A. 1998. Molecular cloning and characterization of human and murine DNase II. Gene 215: 281-289.
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6. Oliveri, M., Daga, A., Cantoni, C., Lunardi, C., Millo, R. and Puccetti, A. 2001. DNase I mediates internucleosomal DNA degradation in human cells undergoing drug-induced apoptosis. Eur. J. Immunol. 31: 743-751.

CHROMOSOMAL LOCATION

Genetic locus: Dnase2a (mouse) mapping to 8 C3.

SOURCE

DNase II (M-183) is a rabbit polyclonal antibody raised against amino acids 141-323 mapping within an internal region of DNase II 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.

APPLICATIONS

DNase II (M-183) is recommended for detection of DNase II of mouse and rat origin by Western Blotting (starting dilution 1:200, 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).

Molecular Weight of DNase II: 32 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. 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 or our catalog for detailed protocols and support products.