



ss/ds DNA marker (3H12): sc-73065

BACKGROUND

Deoxyribonucleic acid (DNA) is a nucleic acid that stores long-term information regarding the development and function of all known living organisms. DNA consists of two long nucleotide polymers which are composed of four bases, namely adenine, thymine, guanine and cytosine, all of which are flanked by a phosphate-deoxyribose backbone. Normally, DNA exists as a double-stranded (ds) molecule that forms in the shape of a double helix, allowing the bases and the backbone of the two strands to interact, thus forming a polynucleotide. When the double helix is unwound (either by enzymes or heat), DNA exists as a single-stranded (ss) molecule that is less stable than the double helix, but is necessary for protein access to DNA bases. ss/ds DNA markers (which bind specifically to DNA) may be used to detect the presence of double-stranded or single-stranded DNA within a given sample.

REFERENCES

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3. Lindahl, T. 1993. Instability and decay of the primary structure of DNA. *Nature* 362: 709-715.
4. deHaseth, P.L. and Helmann, J.D. 1995. Open complex formation by *Escherichia coli* RNA polymerase: the mechanism of polymerase-induced strand separation of double helical DNA. *Mol. Microbiol.* 16: 817-824.
5. Isaksson, J., Acharya, S., Barman, J., Cheruku, P. and Chattopadhyaya, J. 2004. Single-stranded adenine-rich DNA and RNA retain structural characteristics of their respective double-stranded conformations and show directional differences in stacking pattern. *Biochemistry* 43: 15996-16010.
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7. Benham, C.J. and Mielke, S.P. 2005. DNA mechanics. *Annu. Rev. Biomed. Eng.* 7: 21-53.
8. Tomovic, A. and Oakeley, E.J. 2008. Computational structural analysis: multiple proteins bound to DNA. *PLoS ONE* 3: e3243.

SOURCE

ss/ds DNA marker (3H12) is a mouse monoclonal antibody raised against calf thymus DNA.

PRODUCT

Each vial contains 100 µg IgG_{2b} in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ss/ds DNA marker (3H12) is recommended for detection of single or double stranded eukaryotic DNA of mammalian origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

STORAGE

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

SELECT PRODUCT CITATIONS

1. Tabrizi, S., Martin-Alonso, C., Xiong, K., Blewett, T., Sridhar, S., An, Z., Patel, S., Rodriguez-Aponte, S., Naranjo, C.A., Wang, S.T., Shea, D., Golub, T.R., Bhatia, S.N., Adalsteinsson, V. and Love, J.C. 2023. An intravenous DNA-binding priming agent protects cell-free DNA and improves the sensitivity of liquid biopsies. *bioRxiv*. E-published.

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.