Topoisomerase I

Cat. No. 38042-024 **Size: 500 units**
Conc.: 5-15 U/µl **Store at -20°C (not frost-free).**

Description:
Topoisomerase I (DNA Relaxing Enzyme) relaxes both negative and positive superhelical turns in covalently closed DNA by transient breakage and rejoining of phosphodiester bonds (1-3). The enzyme is isolated from calf thymus.

Unit Definition:
One unit converts 0.5 µg superhelical (Form I) ϕX174 RF DNA to the relaxed state in 30 min at 37°C.

Storage Buffer:
30 mM potassium phosphate (pH 7.0)
5 mM DTT
0.1 mM EDTA
0.2 mg/ml BSA
50% (v/v) glycerol
0.1% (w/v) Triton® X-100

Quality Control:
This product has passed the following quality control assays: absence of detectable endodeoxyribonuclease, exodeoxyribonuclease, and phosphatase activities; performance in converting super-coiled DNA to relaxed DNA.

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Additional Information:

Reaction Conditions For Relaxing Supercoiled DNA:

In a 50-µl reaction incubate 0.5 µg supercoiled ϕX174 RF in 50 mM Tris HCl pH 7.5, 50 mM KCl, 10 mM $MgCl_2$, 0.5 mM DTT, 0.1 mM EDTA, 30 µg/ml BSA with 1 unit of Topoisomerase I. Incubate 30 minutes at 37°C. Analyze treated samples on an agarose gel in the absence of ethidium bromide.

- If supercoiled DNA other than ϕX174 RF is used, the amount of Topoisermase I must be empirically determined.

References:

1. Wang, J. C., Gumport, R. I., Javaherian, K., Kirkegaard, K., Klevan, L., Kotewicz, M., and Tse, Y-C. (1980) in "Mechanistic Studies of DNA Replication and Genetic Recombination", ICN-UCLA Symposia on Molecular and Cellular Biology, Vol. 19 (Alberts, B. M. and Fox, C. F.), Academic Press, New York.
2. Champoux, J. J. (1978) *Ann. Rev. Biochem 47*, 449.
3. Wang, J. C. (1982) *Scientific American 247*, 94.