

# Monoclonal Antibody to Human Topo II $\alpha$ (p170 Form)

Catalog No. 2010-1 (50 units)

## Description

There are at least two type II topoisomerase genes in animal cells: Topo II $\alpha$  (also called p170 form) and topo II $\beta$  (p180) (Chung et al., 1989; Tan et al, 1992). The former is a cell cycle regulated enzyme of 170 kDa and the latter is not strongly regulated during the cell cycle. This monoclonal antibody reacts specifically with the topo II $\alpha$  (170 kDa form).

The antibody was prepared against an oligopeptide derived from the C-terminus of the p170 kDa human topoisomerase II. The antibody was then affinity purified over a column containing the same peptide. The affinity purified antibody can be used to probe Western blots provided controls are included to clearly mark the position of the 170 kDa topo II. The reason for this is that human topo II is easily degraded or proteolyzed during routine extraction and manipulations; as a result, one may detect sub-bands. Heterogeneity in the SDS-PAGE pattern has been reported by several labs (Shelton et al., 1983; Halligan et al., 1985; Muller, et al., 1988) and proteolytic products of *S. pombe* topoisomerase II were reported (Shiozaki and Yanagida, 1991). Thus, the antibody may appear to be non-specific if there is extensive proteolysis. To counter this problem, a marker for human topoisomerase II is available from TopoGEN ([www.topogen.com](http://www.topogen.com), Cat. #2011-3) which corresponds to the intact 170 kDa topoisomerase II.

## Applications: This antibody works with the following:

1. **Immunohistochemistry:** Typical working dilutions of 1:20 to 1:40 using a high temperature unmasking technique (see [http://www.topogen.com/html/unmasking\\_method.html](http://www.topogen.com/html/unmasking_method.html) for details or go to [www.topogen.com](http://www.topogen.com) and navigate to catalog # 2010-1). Typically, 60 min of primary AB incubations should be performed at room temperature. All other procedures for detection (secondary AB, substrates, fluorescent detection) are standard but should be worked out empirically for the specific system.

2. **Western blotting:** The antibody concentration is in Western blotting units; one unit corresponds to a 1:1000 dilution of the antibody required to make a diluted probe for a routine Western blot. Thus, 1 unit of antibody will make 1 ml of diluted probe.

## Vial Contents:

The vial contains 50 units (at 1 unit/ul) of affinity purified immunoglobulin of the IgG1 class. The antibody is stable for 1-2 months at 4°C and for long term storage should be kept frozen. Repeat freeze/thawing is deleterious and should be minimized. The AB is in sterile water.

## References

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- Halligan, B.D., Edwards, K.A. and Liu, L.F. 1985. Purification and characterization of a type II DNA topoisomerase from bovine calf thymus. *J. Biol. Chem.* 260:2475-2482.
- Shelton, E.R., Osheroff, N. and Brutlag, D.L. 1983. DNA Topoisomerase II from *Drosophila melanogaster*. *J. Biol. Chem.* 258:9530-9535.
- Chung, T., Drake, F., Tan, K., Per, S., Crooke, S., and Mirabelli, C. 1989. Characterization and immunological identification of cDNA clones encoding two human DNA topoisomerase II isozymes. *Proc. Natl. Acad. Sci. U.S.A.* 86:9431-9435.
- Shiozaki, K. and Yanagida, M. 1991. A functional 125 kDa core polypeptide of fission yeast DNA topoisomerase II. *Mol. Cell. Biol.* 11:6093-6102.

## Product Application and Disclaimer

This product is not licensed or approved for administration to humans or animals. It may be used with experimental animals only. The product is for in vitro research diagnostic studies only. The product is non-infectious and non-hazardous to human health. This information is based on present knowledge and does not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. TopoGEN, Inc. shall not be held liable for product failure due to mishandling and incorrect storage by end user. TopoGEN's liability is limited to credit or product replacement.



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