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Product Specification Sheet

Human Topoisomerase II beta (Top II beta) Antibody

Cat # TOP2B21-A	Rabbit Anti-Human Top II beta IgG # 1	**SIZE**: 100 ug
Cat # TOP2B21-C	Human Top II beta protein WB +ve control # 1	**SIZE**: 100 ul

The topology of the DNA is a crucial issue in different biological processes like recombination, replication, transcription, and chromatin remolding. **DNA topoisomerases** are enzymes that control the amount of supercoiling in DNA. Without topoisomeras, DNA cannot replicate normally. The protein family of DNA topoisomerases is divided into two types (**type I and II**) based on their mechanism and physical properties. While the **type I topoisomerases** are monomeric and do not require ATP, **the type II** contain multi-subunits and depend on ATP for their activity. The type I enzymes include eukaryotic and bacterial topoisomerase I and III. The type II enzymes include bacterial DNA gyrase and topoisomerase IV and the eukaryotic topoisomerase II. Type I enzymes introduce transient single strand breaks in DNA, while type II enzymes produce transient double strand breaks in the DNA.

Topo II plays important roles in synthesis and transcription of DNA as well as chromosomal segregation during mitosis. It is reported to be a sensitive and specific marker of late S-, G2- & M-phases in transformed and developmentally regulated normal cells Top II is also implicated in drug resistance of tumor cells.

Source of Antigen and Antibodies

Antigen	Fusion protein ~300 aa from ~C-terminus of human TOP2 beta protein
Ab Host/type	Rabbit, polyclonal IgG Aff pure IgG (**Cat # TOP2B21-A)**
2-ab	**Goat Anti-rabbit IgG-HRP** cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control IgG	**# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control**

Human TOP2 beta is a 1626 aa protein. Recombinant GST-fusion protein (C-terminal ~300 aa of TOP2 beta) was expressed in E. coli and purified (>90%). GST-TOP2 beta fusion protein is ~60 kda including GST. For WB +ve control (**Cat # TOP2B21-C**), it is formulated in SDS-PAGE sample buffer (reduced). This preparation is not biologically inactive. It is not suitable for ELISA or other applications where native protein is required. It is supplied in 100 ul/vial. For WB, heat once and load 10 ul/lane and visualize with appropriate antibodies. If the product has been stored for several weeks, then it may be preferable to add 5 ul of fresh 2x sample buffer per 10 ul of the NEP11-C solution prior to heating and loading on gels. Store frozen in suitable aliquots. Do not freeze, thaw, or hear repeatedly.

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage
Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.
Shipping: 4oC for solutions and room temp for powder.

Recommended Usage

Western Blotting: An initial concn. of 2-10 ug/ml is recommended for Western.

Histochemistry & Immunofluorescence: formalin fixed and paraffin embedded sections (boiled in 10 mM citrate buffer pH 6.0 for 10-20 min followed by cooling at 4oC for 20 min). An initial concn. 5-10 ug/ml is recommended for IHC.

Specificity & Cross-reactivity

TOP2B21-A reacts with human TOP2 beta. No significant reaction is seen with TOP2 alpha or TOP1 protein. Antibody cross-reactivity in various other species has not been studied. Human recombinant TOP2-beta GST-fusion protein (**Cat # TOP2B21-C**) can be used as positive control for Western.

General References: Jenkins JR et al (1992) Nucl. Acid Res. 20, 5587-5592; Austin CA et al (1993) BBA 1172, 283-291; Chung TD et al (1989) PNAS 86, 9431-9435; Sng JH et al (1999) BBA 1444, 395-406; Wang JC et al (1985) Ann Rev. Bicohem 54, 665-697; Earnshaw WC et al (1985) j Cell Biol. 100, 1706-1715

***This product is for In vitro research use only.**

TOP2B21-A –C 50715A

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com