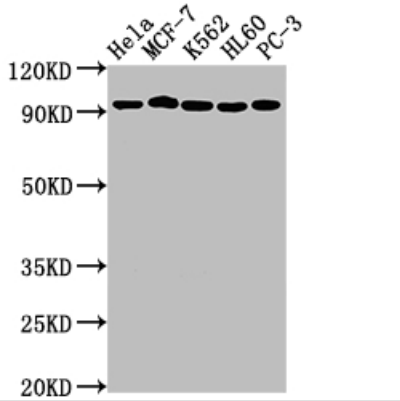
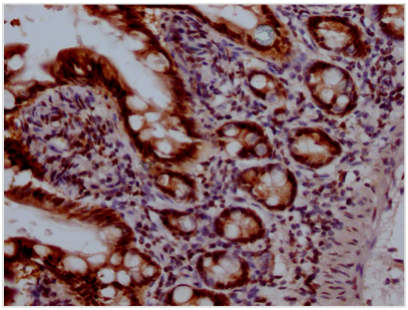
TOP1 Antibody

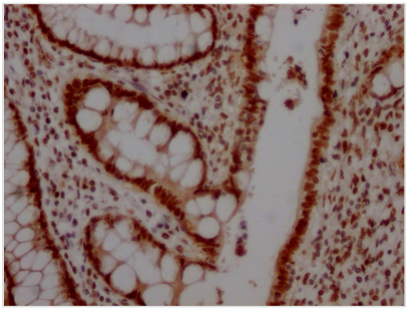
Product Code	CSB-RA792129A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P11387
Immunogen	A synthesized peptide derived from human TOP1
Species Reactivity	Human
Tested Applications	ELISA, WB, IHC, FC, IP; Recommended dilution: WB:1:500-1:5000, IHC:1:50-1:200, FC:1:20-1:200, IP:1:200-1:1000
Relevance	Releases the supercoiling and torsional tension of DNA introduced during the DNA replication and transcription by transiently cleaving and rejoining one strand of the DNA duplex. Introduces a single-strand break via transesterification at a target site in duplex DNA. The scissile phosphodiester is attacked by the catalytic tyrosine of the enzyme, resulting in the formation of a DNA-(3'-phosphotyrosyl)-enzyme intermediate and the expulsion of a 5'-OH DNA strand. The free DNA strand then rotates around the intact phosphodiester bond on the opposing strand, thus removing DNA supercoils. Finally, in the religation step, the DNA 5'-OH attacks the covalent intermediate to expel the active-site tyrosine and restore the DNA phosphodiester backbone (By similarity). Regulates the alternative splicing of tissue factor (F3) pre-mRNA in endothelial cells. Involved in the circadian transcription of the core circadian clock component ARNTL/BMAL1 by altering the chromatin structure around the ROR response elements (ROREs) on the ARNTL/BMAL1 promoter.
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Product Type	Recombinant Antibody
Immunogen Species	Homo sapiens (Human)
Research Area	Epigenetics and Nuclear Signaling; Cancer
Gene Names	TOP1
Accession NO.	6D8
Image	



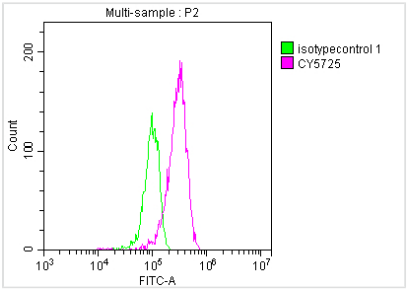
Western Blot
Positive WB detected in: Hela whole cell lysate, MCF-7 whole cell lysate, K562 whole cell lysate, HL60 whole cell lysate, PC-3 whole cell lysate
All lanes: TOP1 antibody at 1:2000
Secondary
Goat polyclonal to rabbit IgG at 1/50000 dilution
Predicted band size: 91 kDa
Observed band size: 91 kDa



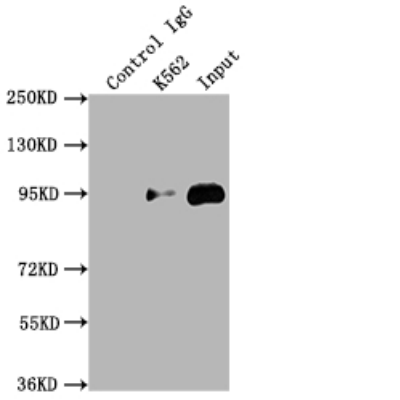
IHC image of CSB-RA792129A0HU diluted at 1:100 and staining in paraffin-embedded human small intestine tissue performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.



IHC image of CSB-RA792129A0HU diluted at 1:100 and staining in paraffin-embedded human colon cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.



Overlay histogram showing HepG2 cells stained with CSB-RA792129A0HU (red line) at 1:50. The cells were fixed with 70% Ethylalcohol (18h) and then incubated in 10% normal goat serum to block non-specific protein-protein interactions followedby the antibody (1µg/1*106cells) for 1 h at 4°C.The secondary antibody used was FITC-conjugated goat anti-rabbit IgG (H+L) at 1/200 dilution for 30min at 4°C. Control antibody (green line) was Rabbit IgG (1µg/1*106cells) used under the same conditions. Acquisition of >10,000 events was performed.



Immunoprecipitating TOP1 in K562 whole cell lysate
Lane 1: Rabbit control IgG instead of CSB-RA792129A0HU in K562 whole cell lysate. For western blotting,a HRP-conjugated Protein G antibody was used as the secondary antibody (1/2000)
Lane 2: CSB-RA792129A0HU(2μg)+ K562 whole cell lysate(500μg)
Lane 3: K562 whole cell lysate (10μg)

Description

The production of the recombinant TOP1 antibody depended on Single B Cell technology. There are 3 main steps in the production: 1, Isolation of single B cells. High-throughput methods could be used to obtain the efficient identification and desired specificity of B cells. 11, Single B cell antibody sequencing and cloning. In this step, the antibody gene sequence of TOP1 was obtained and introduced to plasmids, which then would be transferred to mammalian cells for in vitro expression of the TOP1 antibody. 3, Screening of antibodies. The target antibody was obtained in this step. And it has been validated in ELISA, WB, IHC, FC, IP.

TOP1, also known as swivelase or untwisting enzyme, relaxes both positive and negative supercoils by nicking DNA, allowing the broken DNA strand to rotate around the complementary intact strand of the DNA duplex before catalyzing the nick closure. This action is especially crucial during transcription because helical restrictions might obstruct DNA replication and transcription, halting cell growth. TOP1 plays an essential role in normal development in mammals. TOP1 and TOP2A are tumor drivers in a variety of cancers, making them interesting and effective targets for anti-cancer drug development.