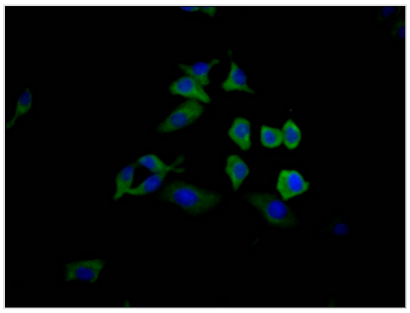
TP53 Recombinant Monoclonal Antibody

Product Code	CSB-RA592348A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P04637
Immunogen	A synthesized peptide derived from human p53
Species Reactivity	Human
Tested Applications	ELISA, IF; Recommended dilution: IF:1:20-1:200
Relevance	Acts as a tumor suppressor in many tumor types; induces growth arrest or apoptosis depending on the physiological circumstances and cell type. Involved in cell cycle regulation as a trans-activator that acts to negatively regulate cell division by controlling a set of genes required for this process. One of the activated genes is an inhibitor of cyclin-dependent kinases. Apoptosis induction seems to be mediated either by stimulation of BAX and FAS antigen expression, or by repression of Bcl-2 expression. In cooperation with mitochondrial PPIF is involved in activating oxidative stress-induced necrosis; the function is largely independent of transcription. Induces the transcription of long intergenic non-coding RNA p21 (lincRNA-p21) and lincRNA-Mkln1. LincRNA-p21 participates in TP53-dependent transcriptional repression leading to apoptosis and seem to have to effect on cell-cycle regulation. Implicated in Notch signaling cross-over. Prevents CDK7 kinase activity when associated to CAK complex in response to DNA damage, thus stopping cell cycle progression. Isoform 2 enhances the transactivation activity of isoform 1 from some but not all TP53-inducible promoters. Isoform 4 suppresses transactivation activity and impairs growth suppression mediated by isoform 1. Isoform 7 inhibits isoform 1-mediated apoptosis. Regulates the circadian clock by repressing CLOCK-ARNTL/BMAL1-mediated transcriptional activation of PER2 (PubMed:24051492).
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; Cell biology
Gene Names	TP53
Clone No.	7A9

Image



Immunofluorescence staining of HepG2 Cells with CSB-RA592348A0HU at 1:50, counter-stained with DAPI. The cells were fixed in 4% formaldehyde, permeated by 0.2% TritonX-100, and blocked in 10% normal Goat Serum. The cells were then incubated with the antibody overnight at 4?. Nuclear DNA was labeled in blue with DAPI. The secondary antibody was FITC-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L).

Description

The synthesis of the TP53 recombinant monoclonal antibody comprises a multistep process. The initial stage involves harvesting the TP53 monoclonal antibody and analyzing its gene sequence. A vector containing the TP53 monoclonal antibody gene is then constructed and transfected into a host cell line for culturing. During the TP53 monoclonal antibody production, a synthesized peptide that is derived from human TP53 is utilized as an immunogen. The TP53 recombinant monoclonal antibody is subsequently isolated and purified through affinity chromatography from the cell culture supernatant. Finally, the specificity of the TP53 recombinant monoclonal antibody is evaluated via ELISA and IF assays. It only detects human TP53 protein.

The TP53 protein, commonly referred to as p53, is a tumor suppressor activated in response to various stress signals, including DNA damage, oxidative stress, and hypoxia, leading to the stabilization and accumulation of the protein in the nucleus. Once activated, TP53 regulates the expression of various target genes involved in cell cycle arrest, DNA repair, and apoptosis. TP53 can also inhibit the formation of new blood vessels by regulating the expression of angiogenesis-related genes. Mutations in the TP53 gene are associated with the development of various types of cancer, as they can lead to the loss or reduction of TP53 function.