abcam

Product datasheet

Anti-SP1 antibody ab157123

6 References 4 Images

Overview

Product name	Anti-SP1 antibody
Description	Goat polyclonal to SP1
Host species	Goat
Tested applications	**Suitable for:** WB, IP, IHC-P
Species reactivity	**Reacts with:** Mouse, Human **Predicted to work with:** Rabbit, Goat, Horse, Chicken, Cow, Dog, Pig, Xenopus laevis, Chimpanzee, Cynomolgus monkey, Rhesus monkey, Gorilla, Common marmoset, Orangutan, Zebra finch, Xenopus tropicalis, Elephant
Immunogen	Synthetic peptide, corresponding to a region within amino acids 735-785 of Human SP1 (NP_612482.2).
Positive control	WB: 293T, HeLa and Jurkat, NIH 3T3, Renca and TCMK1 whole cell lysates. IP: 293T cells. IHC-P: Human ovarian carcinoma.
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C.
Storage buffer	pH: 7 Preservative: 0.09% Sodium azide Constituent: 99% Tris citrate/phosphate pH 7 to 8
Purity	Immunogen affinity purified
Purification notes	ab157123 is affinity purified using an epitope specific to SP1 immobilized on solid support.

Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab157123 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		1/2000 - 1/10000. Predicted molecular weight: 81 kDa.
IP		Use at 2-10 µg/mg of lysate.
IHC-P		1/1000 - 1/5000.

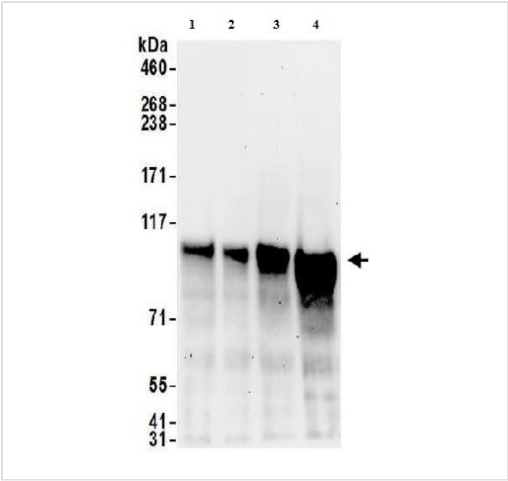
Target

Function	Transcription factor that can activate or repress transcription in response to physiological and pathological stimuli. Binds with high affinity to GC-rich motifs and regulates the expression of a large number of genes involved in a variety of processes such as cell growth, apoptosis, differentiation and immune responses. Highly regulated by post-translational modifications (phosphorylations, sumoylation, proteolytic cleavage, glycosylation and acetylation). Binds also the PDGFR-alpha G-box promoter. May have a role in modulating the cellular response to DNA damage. Implicated in chromatin remodeling. Plays a role in the recruitment of SMARCA4/BRG1 on the c-FOS promoter. Plays an essential role in the regulation of FE65 gene expression. In complex with ATF7IP, maintains telomerase activity in cancer cells by inducing TERT and TERC gene expression.
Tissue specificity	Up-regulated in adenocarcinomas of the stomach (at protein level).
Sequence similarities	Belongs to the Sp1 C2H2-type zinc-finger protein family. Contains 3 C2H2-type zinc fingers.
Post-translational modifications	Phosphorylated on multiple serine and threonine residues. Phosphorylation is coupled to ubiquitination, sumoylation and proteolytic processing. Phosphorylation on Ser-59 enhances proteolytic cleavage. Phosphorylation on Ser-7 enhances ubiquitination and protein degradation. Hyperphosphorylation on Ser-101 in response to DNA damage has no effect on transcriptional activity. MAPK1/MAPK3-mediated phosphorylation on Thr-453 and Thr-739 enhances VEGF transcription but, represses FGF2-triggered PDGFR-alpha transcription. Also implicated in the repression of RECK by ERBB2. Hyperphosphorylated on Thr-278 and Thr-739 during mitosis by MAPK8 shielding SP1 from degradation by the ubiquitin-dependent pathway. Phosphorylated in the zinc-finger domain by calmodulin-activated PKCzeta. Phosphorylation on Ser-641 by PKCzeta is critical for TSA-activated LHR gene expression through release of its repressor, p107. Phosphorylation on Thr-668, Ser-670 and Thr-681 is stimulated by angiotensin II via the AT1 receptor inducing increased binding to the PDGF-D promoter. This phosphorylation is increased in injured artey wall. Ser-59 and Thr-681 can both be dephosphorylated by PP2A during cell-cycle interphase. Dephosphorylation on Ser-59 leads to increased chromatin association during interphase and increases the transcriptional activity. On insulin stimulation, sequentially glycosylated and phosphorylated on several C-terminal serine and threonine residues.

Acetylated. Acetylation/deacetylation events affect transcriptional activity. Deacetylation leads to an increase in the expression the 12(s)-lipooxygenase gene though recruitment of p300 to the promoter.
Ubiquitinated. Ubiquitination occurs on the C-terminal proteolytically-cleaved peptide and is triggered by phosphorylation.
Sumoylated by SUMO1. Sumoylation modulates proteolytic cleavage of the N-terminal repressor domain. Sumoylation levels are attenuated during tumorigenesis. Phosphorylation mediates SP1 desumoylation.
Proteolytic cleavage in the N-terminal repressor domain is prevented by sumoylation. The C-terminal cleaved product is susceptible to degradation.
O-glycosylated; contains at least 8 N-acetylglucosamine side chains. Levels are controlled by insulin and the SP1 phosphorylation states. Insulin-mediated O-glycosylation locates SP1 to the nucleus, where it is sequentially deglycosylated and phosphorylated. O-glycosylation affects transcriptional activity through disrupting the interaction with a number of transcription factors including ELF1 and NFYA. Also inhibits interaction with the HIV1 promoter. Inhibited by peroxisomome proliferator receptor gamma (PPARgamma).

Cellular localization Nucleus. Cytoplasm. Nuclear location is governed by glycosylated/phosphorylated states. Insulin promotes nuclear location, while glucagon favors cytoplasmic location.

Images



Western blot - Anti-SP1 antibody (ab157123)

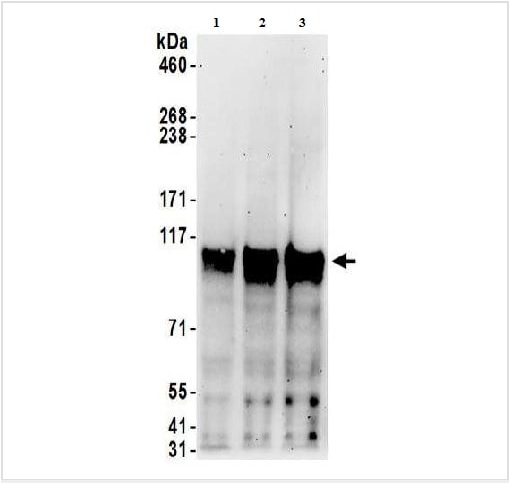
All lanes : Anti-SP1 antibody (ab157123) at 0.1 µg/ml

Lane 1 : 293T whole cell lysate at 50 µg
Lane 2 : 293T whole cell lysate at 15 µg
Lane 3 : HeLa whole cell lysate at 50 µg
Lane 4 : Jurkat whole cell lysate at 50 µg

Developed using the ECL technique.

Predicted band size: 81 kDa

Exposure time: 3 minutes



Western blot - Anti-SP1 antibody (ab157123)

All lanes : Anti-SP1 antibody (ab157123) at 0.4 µg/ml

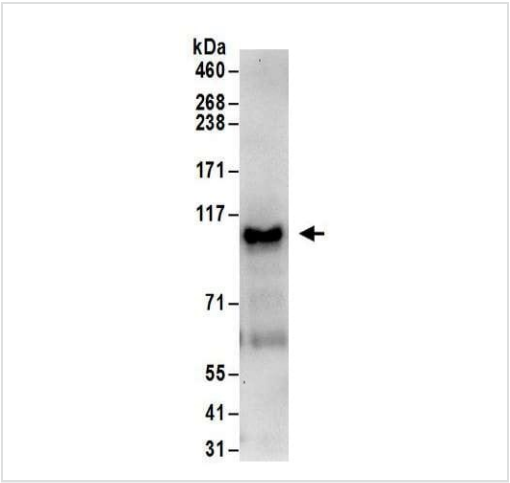
Lane 1 : NIH 3T3 whole cell lysate
Lane 2 : Renca whole cell lysate
Lane 3 : TCMK1 whole cell lysate

Lysates/proteins at 50 µg per lane.

Developed using the ECL technique.

Predicted band size: 81 kDa

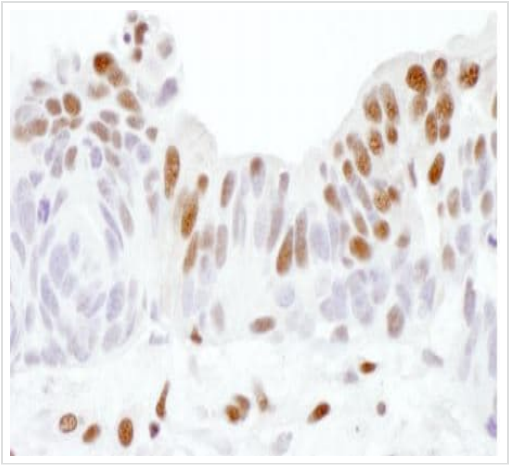
Exposure time: 3 minutes



Immunoprecipitation - Anti-SP1 antibody (ab157123)

Detection of SP1 by Western Blot of Immunprecipitate. ab157123 at 1 µg/ml labeling SP1 in 293T whole cell lysate immunoprecipitated using ab157123 at 6 µg/mg lysate (1 mg/IP; 20% of IP loaded/lane).

Detection: Chemiluminescence with exposure time of 30 seconds.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SP1 antibody (ab157123)

Paraffin embedded human ovarian carcinoma tissue stained for SP1 using ab157123 at 1/5000 dilution in immunohistochemical analysis.

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