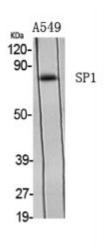


Anti-Sp1 antibody





Description Rabbit polyclonal to Sp1.

Model STJ95737

Host Rabbit

Reactivity Human, Mouse, Rat

Applications ELISA, IF, IHC, WB

Immunogen Synthesized peptide derived from human Sp1 around the non-phosphorylation

site of T739.

Immunogen Region 680-760 aa

Gene ID <u>6667</u>

Gene Symbol SP1

Dilution range WB 1:500-1:2000IHC 1:100-1:300IF 1:200-1:1000ELISA 1:20000

Specificity Sp1 Polyclonal Antibody detects endogenous levels of Sp1 protein.

Tissue Specificity Up-regulated in adenocarcinomas of the stomach (at protein level). Isoform 3

is ubiquitously expressed at low levels.

Purification The antibody was affinity-purified from rabbit antiserum by affinity-

chromatography using epitope-specific immunogen.

Note For Research Use Only (RUO).

Protein Name Transcription factor Sp1

Molecular Weight 85 kDa

Clonality Polyclonal

Conjugation Unconjugated

Isotype IgG

Formulation Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

Concentration 1 mg/ml

Storage Instruction Store at -20°C, and avoid repeat freeze-thaw cycles.

Database Links <u>HGNC:11205OMIM:189906</u>

Alternative Names Transcription factor Sp1

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. Isoform 3 is a stronger activator of transcription than isoform 1. Positively regulates the transcription

of the core clock component ARNTL/BMAL1.

Cellular Localization Nucleus. Cytoplasm. Nuclear location is governed by

glycosylated/phosphorylated states. Insulin promotes nuclear location, while

glucagon favors cytoplasmic location.

Post-translational Modifications

Phosphorylated on multiple serine and threonine residues. Phosphorylation is coupled to ubiquitination, sumovlation 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 with 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 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).

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