

SS18 (D6I4Z) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IHC-P, ChIP, ChIP-seq, C&R	H M R Mk	Endogenous	Iso1 60, Iso2 50	Rabbit IgG	#Q15532	6760

Product Usage Information

For optimal ChIP and ChIP-seq results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10⁶ cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

The CUT&RUN dilution was determined using CUT&RUN Assay Kit #86652.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunohistochemistry (Paraffin)	1:10000
Chromatin IP	1:50
Chromatin IP-seq	1:50
CUT&RUN	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #57558.

Specificity/Sensitivity

SS18 (D6I4Z) Rabbit mAb recognizes endogenous levels of total SS18 protein.

Species predicted to react based on 100% sequence homology

Dog, Horse

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gln394 of human SS18 protein.

Background

ATP-dependent chromatin remodeling complexes play an essential role in the regulation of nuclear processes such as transcription and DNA replication and repair (1,2). The SWI/SNF chromatin remodeling complex consists of more than 10 subunits and contains a single molecule of either BRM or BRG1 as the ATPase catalytic subunit. The activity of the ATPase subunit disrupts histone-DNA contacts and changes the accessibility of crucial regulatory elements to the chromatin. The additional core and accessory subunits play a scaffolding role to maintain stability and provide surfaces for interaction with various transcription factors and chromatin (2-5). The interactions between SWI/SNF subunits and transcription factors, such as nuclear receptors, p53, Rb, BRCA1, and MyoD, facilitate recruitment of the complex to target genes for regulation of gene activation, cell growth, cell cycle, and differentiation processes (1,6-9).

SS18 is a protein that has been shown to be a part of the SWI/SNF complex (10, 11). The SS18-SSX fusion proteins are a result of in-frame fusions that fuse the SS18 gene on chromosome 18 with X chromosome genes SSX1, SSX2, and to a lesser extent SSX4 (12). Human synovial sarcoma (SS) accounts for 8-10% of all soft tissue malignancies and 95% of these malignancies express the recurrent translocation of the SS18 gene on chromosome 18 (12). The N-terminal SNH domain (SYT N-terminal homology domain) of the SS18 protein interacts with SWI/SNF chromatin remodeling complexes via the N terminal region of BRM and BRG1 subunits (13). Studies of the SS18-SSX fusion in SS suggest that endogenous SS18 competes with the mutant SS18-SSX fusion for occupancy in the SWI/SNF complexes resulting in the displacement of SNF5 (BAF47) subunit. Displacement of the SNF5 subunit results in altered function of the SWI/SNF complex that leads to deregulated expression of genes such as Sox2 in SS (12).

In addition, cytosolic SS18 isoforms also associate with F-actin in cytoskeletal organization (14). SS18 null mice do not develop beyond E9.5 and have defects in vascularization, cell migration, neural tube closure, and fusion within the embryonic-maternal membranes (14).

Background References

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Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin) **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq **C&R:** CUT&RUN

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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