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MMS21 Antibody

Catalog # ASC11132

Product Information

Application	WB, E
Primary Accession	Q96MF7
Other Accession	NP_775956, 27734761
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	27932
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	MMS21 antibody can be used for detection of MMS21 by Western blot at 0.5 - 1 □g/mL.

Additional Information

Gene ID	286053
Other Names	E3 SUMO-protein ligase NSE2, 6.3.2.-, MMS21 homolog, hMMS21, Non-structural maintenance of chromosomes element 2 homolog, Non-SMC element 2 homolog, NSMCE2, C8orf36, MMS21
Target/Specificity	NSMCE2;
Reconstitution & Storage	MMS21 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	MMS21 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	NSMCE2
Synonyms	C8orf36, MMS21
Function	E3 SUMO-protein ligase component of the SMC5-SMC6 complex, a complex involved in DNA double-strand break repair by homologous recombination (PubMed:16055714, PubMed:16810316). Is not be required for the stability of the complex (PubMed:16055714, PubMed:16810316). The complex may promote sister chromatid homologous recombination by recruiting the SMC1-SMC3 cohesin complex to double-strand breaks (PubMed:16055714, PubMed:16810316). The complex is required for telomere maintenance via

recombination in ALT (alternative lengthening of telomeres) cell lines and mediates sumoylation of shelterin complex (telosome) components which is proposed to lead to shelterin complex disassembly in ALT-associated PML bodies (APBs) (PubMed:17589526). Acts as an E3 ligase mediating SUMO attachment to various proteins such as SMC6L1 and TSNAX, the shelterin complex subunits TERF1, TERF2, TINF2 and TERF2IP, RAD51AP1, and maybe the cohesin components RAD21 and STAG2 (PubMed:16055714, PubMed:16810316, PubMed:17589526, PubMed:31400850). Required for recruitment of telomeres to PML nuclear bodies (PubMed:17589526). SUMO protein-ligase activity is required for the prevention of DNA damage-induced apoptosis by facilitating DNA repair, and for formation of APBs in ALT cell lines (PubMed:17589526). Required for sister chromatid cohesion during prometaphase and mitotic progression (PubMed:19502785).

Cellular Location Nucleus. Chromosome, telomere. Nucleus, PML body. Note=Localizes to PML nuclear bodies in ALT cell lines.

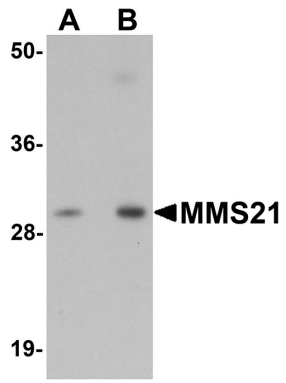
Background

MMS21 Antibody: MMS21, also known as NSE2, is a SUMO ligase that in combination with the SMC5/6 complex is required for the prevention of DNA damage induced apoptosis by facilitating DNA repair in human cells. MMS21-dependent sumoylation is integral and important to the cohesion mechanism and mitotic progression; this function appears to be independent of SMC6. MMS21 mediates SUMO attachment to various proteins such as SMC6L1 and TRAX, and possibly the cohesin components RAD21 and STAG2.

References

Potts PR and Yu H. Human MMS21/NSE2 is a SUMO ligase required for DNA repair. Mol. Cell. Biol. 2005; 25:7021-32.
Behlke-Steinert S, Touat-Todeschini L, Skoufias DA, et al. SMC5 and MMS21 are required for chromosome cohesion and mitotic progression. Cell Cycle 2009; 8:2211-8.
Bermudez-Lopez M, Ceschia A, de Piccoli G, et al. The Smc5/6 complex is required for dissolution of DNA-mediated sister chromatid linkages. Nucleic Acids Res. 2010; 38:6502-12.

Images



Western blot analysis of MMS21 in 293 cell lysate with MMS21 antibody at (A) 0.5 and (B) 1 µg/mL.