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SPRTN Antibody - middle region

Rabbit Polyclonal Antibody
Catalog # AI15690

Product Information

Application	WB
Primary Accession	Q9H040
Other Accession	NM_032018, NP_114407
Reactivity	Human, Mouse, Rat, Rabbit, Pig, Dog, Guinea Pig, Horse, Bovine
Predicted	Human, Mouse, Rat, Rabbit, Pig, Dog, Guinea Pig, Horse, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	55134

Additional Information

Gene ID	83932
Alias Symbol	C1orf124, DDDL1880, PRO4323, Spartan, dJ876B10.3
Other Names	SprT-like domain-containing protein Spartan, DNA damage protein targeting VCP, DVC1, Protein with SprT-like domain at the N terminus, Spartan, SPRTN, C1orf124, DVC1
Format	Liquid. Purified antibody supplied in 1x PBS buffer with 0.09% (w/v) sodium azide and 2% sucrose.
Reconstitution & Storage	Add 50 ul of distilled water. Final anti-SPRTN antibody concentration is 1 mg/ml in PBS buffer with 2% sucrose. For longer periods of storage, store at 20°C. Avoid repeat freeze-thaw cycles.
Precautions	SPRTN Antibody - middle region is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SPRTN {ECO:0000303|PubMed:22894931, ECO:0000312|HGNC:HGNC:25356}
Function	DNA-dependent metalloendopeptidase that mediates the proteolytic cleavage of covalent DNA-protein cross-links (DPCs) during DNA synthesis, thereby playing a key role in maintaining genomic integrity (PubMed:27852435, PubMed:27871365, PubMed:27871366, PubMed:30893605, PubMed:32649882, PubMed:36608669). DPCs are highly toxic DNA lesions that interfere with essential chromatin transactions, such as replication and transcription, and which are induced by reactive agents, such as UV light or formaldehyde (PubMed:27852435, PubMed:27871365,

PubMed:27871366, PubMed:32649882, PubMed:36608669). Associates with the DNA replication machinery and specifically removes DPCs during DNA synthesis (PubMed:27852435, PubMed:27871365, PubMed:27871366, PubMed:32649882). Catalyzes proteolytic cleavage of the HMCES DNA-protein cross-link following unfolding by the BRIP1/FANCJ helicase (PubMed:36608669). Acts as a pleiotropic protease for DNA- binding proteins cross-linked with DNA, such as TOP1, TOP2A, histones H3 and H4 (PubMed:27871366). Mediates degradation of DPCs that are not ubiquitinated, while it is not able to degrade ubiquitinated DPCs (By similarity). SPRTN activation requires polymerase collision with DPCs followed by helicase bypass of DPCs (By similarity). Involved in recruitment of VCP/p97 to sites of DNA damage (PubMed:22902628, PubMed:23042605, PubMed:23042607, PubMed:32152270). Also acts as an activator of CHEK1 during normal DNA replication by mediating proteolytic cleavage of CHEK1, thereby promoting CHEK1 removal from chromatin and subsequent activation (PubMed:31316063). Does not activate CHEK1 in response to DNA damage (PubMed:31316063). May also act as a 'reader' of ubiquitinated PCNA: recruited to sites of UV damage and interacts with ubiquitinated PCNA and RAD18, the E3 ubiquitin ligase that monoubiquitinates PCNA (PubMed:22681887, PubMed:22894931, PubMed:22902628, PubMed:22987070). Facilitates chromatin association of RAD18 and is required for efficient PCNA monoubiquitination, promoting a feed-forward loop to enhance PCNA ubiquitination and translesion DNA synthesis (PubMed:22681887).

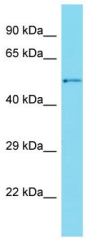
Cellular Location

Nucleus. Chromosome. Note=Localizes to sites of UV damage via the PIP-box (PubMed:22894931, PubMed:23042605). Recruited to stalled replication forks at sites of replication stress following deubiquitination (PubMed:22894931, PubMed:22987070, PubMed:23042605, PubMed:27871365, PubMed:32649882). CHEK1 stimulates recruitment to chromatin (PubMed:31316063).

References

Clark H.F.,et al.Genome Res. 13:2265-2270(2003).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Bechtel S.,et al.BMC Genomics 8:399-399(2007).
Gregory S.G.,et al.Nature 441:315-321(2006).
Mural R.J.,et al.Submitted (JUL-2005) to the EMBL/GenBank/DDBJ databases.

Images



Host: Rabbit
Target Name: SPRTN
Sample Tissue: MCF7 Whole cell lysate
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Antibody Dilution: 1.0µg/ml