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RNF168 Antibody

Catalog # ASC10896

Product Information

Application	WB, E
Primary Accession	Q8IYW5
Other Accession	NP_689830, 31377566
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	65020
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	RNF168 antibody can be used for detection of RNF168 by Western blot at 1 g/mL.

Additional Information

Gene ID	165918
Other Names	E3 ubiquitin-protein ligase RNF168, hRNF168, 6.3.2.-, RING finger protein 168, RNF168
Target/Specificity	RNF168;
Reconstitution & Storage	RNF168 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	RNF168 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	RNF168 {ECO:0000255|HAMAP-Rule:MF_03066}
Function	E3 ubiquitin-protein ligase required for accumulation of repair proteins to sites of DNA damage. Acts with UBE2N/UBC13 to amplify the RNF8-dependent histone ubiquitination. Recruited to sites of DNA damage at double-strand breaks (DSBs) by binding to ubiquitinated histone H2A and H2AX and amplifies the RNF8-dependent H2A ubiquitination, promoting the formation of 'Lys-63'-linked ubiquitin conjugates. This leads to concentrate ubiquitinated histones H2A and H2AX at DNA lesions to the threshold required for recruitment of TP53BP1 and BRCA1. Also recruited at DNA interstrand cross-links (ICLs) sites and promotes accumulation of 'Lys-63'-linked ubiquitination of histones H2A and H2AX, leading to recruitment of

	FAAP20/C1orf86 and Fanconi anemia (FA) complex, followed by interstrand cross-link repair. H2A ubiquitination also mediates the ATM-dependent transcriptional silencing at regions flanking DSBs in cis, a mechanism to avoid collision between transcription and repair intermediates. Also involved in class switch recombination in immune system, via its role in regulation of DSBs repair. Following DNA damage, promotes the ubiquitination and degradation of JMJD2A/KDM4A in collaboration with RNF8, leading to unmask H4K20me2 mark and promote the recruitment of TP53BP1 at DNA damage sites. Not able to initiate 'Lys-63'-linked ubiquitination in vitro; possibly due to partial occlusion of the UBE2N/UBC13-binding region. Catalyzes monoubiquitination of 'Lys-13' and 'Lys-15' of nucleosomal histone H2A (H2AK13Ub and H2AK15Ub, respectively).
Cellular Location	Nucleus {ECO:0000255|HAMAP-Rule:MF_03066, ECO:0000269|PubMed:19203578, ECO:0000269|PubMed:19203579, ECO:0000269|PubMed:19500350, ECO:0000269|PubMed:21041483, ECO:0000269|PubMed:22742833}. Note=Localizes to double-strand breaks (DSBs) sites of DNA damage. {ECO:0000255|HAMAP-Rule:MF_03066}

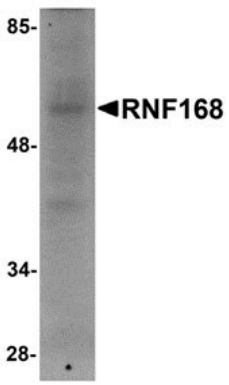
Background

RNF168 Antibody: RNF168 was identified as a chromatin-associated RING finger protein that acts as a ubiquitin ligase both in vitro and in vivo. RNF168 targets histones H2A and H2AX, but not H2B, forming K63 polyubiquitin chains. Upon formation of DNA double strand breaks, RNF168 is recruited to the site of DNA damage where it co-localizes with gammaH2AX and 53BP1 in an RNF8-dependent manner. This localization of RNF168 increases the local concentration of ubiquinated proteins to the threshold required for retention of the proteins 53BP1 and BRCA1, facilitating the downstream signaling cascade. Thus, RNF168 defines a new pathway demonstrating a functional cooperation between E3 ligases in genome maintenance. At least three isoforms of RNF168 are known to exist.

References

Doil C, Mailand N, Bekker-Jensen S, et al. RNF168 binds and amplifies ubiquitin conjugates on damaged chromosomes to allow accumulation of repair proteins. Cell2009; 136:435-46.
Pinato S, Scandiuzzi C, Arnaudo N, et al. RNF168, a new RING finger, MIU-containing protein that modifies chromatin by ubiquitination of histones H2A and H2AX. BMC Mol Biol.2009; 10:55.

Images



Western blot analysis of RNF168 in human brain tissue lysate with RNF168 antibody at 1 µg/mL.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.