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RAP80 Antibody

Catalog # ASC10580

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q96RL1
Other Accession	EAW85043, 119605449
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	79727
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	RAP80 antibody can be used for detection of RAP80 by Western blot at 1 g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	51720
Other Names	BRCA1-A complex subunit RAP80, Receptor-associated protein 80, Retinoid X receptor-interacting protein 110, Ubiquitin interaction motif-containing protein 1, UIMC1, RAP80, RXRIP110
Target/Specificity	UIMC1;
Reconstitution & Storage	RAP80 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	RAP80 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	UIMC1
Synonyms	RAP80, RXRIP110
Function	Ubiquitin-binding protein (PubMed: 24627472). Specifically recognizes and binds 'Lys-63'-linked ubiquitin (PubMed:19328070, Ref.38). Plays a central role in the BRCA1-A complex by specifically binding 'Lys-63'-linked ubiquitinated histones H2A and H2AX at DNA lesions sites, leading to target the BRCA1-BARD1 heterodimer to sites of DNA damage at double-strand breaks (DSBs). The BRCA1-A complex also possesses deubiquitinase activity that

	specifically removes 'Lys-63'- linked ubiquitin on histones H2A and H2AX. Also weakly binds monoubiquitin but with much less affinity than 'Lys-63'-linked ubiquitin. May interact with monoubiquitinated histones H2A and H2B; the relevance of such results is however unclear in vivo. Does not bind Lys-48'-linked ubiquitin. May indirectly act as a transcriptional repressor by inhibiting the interaction of NR6A1 with the corepressor NCOR1.
Cellular Location	Nucleus. Note=Localizes at sites of DNA damage at double-strand breaks (DSBs)
Tissue Location	Expressed in testis, ovary, thymus and heart. Expressed in germ cells of the testis.

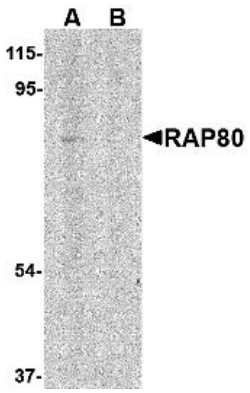
Background

RAP80 Antibody: RAP80 was initially identified as zinc-finger containing nuclear protein that is highly expressed in testis and interacts with the retinoid-related testis-associated receptor (RTR). Later experiments revealed that RAP80 is recruited by the Coiled-coil domain 98 (CCDC98) protein to the breast cancer-1 protein BRCA1, allowing the formation of BRCA1 foci in response to DNA damage caused by ionizing radiation. Both RAP80 and CCDC98 are required for DNA damage resistance, G2-M checkpoint control, and DNA repair. Cells depleted of either RAP80 or CCDC98 exhibited increased sensitivity to ionizing radiation, although not as much as in BRCA1-depleted cells, suggesting that RAP80 and CCDC98 control only part of the DNA damage response role of BRCA1. At least four isoforms of RAP80 are known to exist.

References

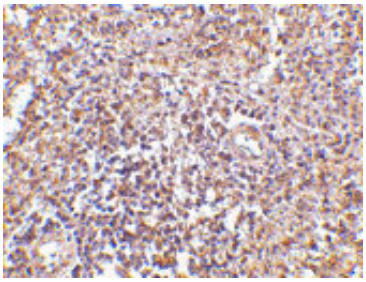
Yan Z, Kim YS, and Jetten AM. RAP80, a novel nuclear protein that interacts with the retinoid-related testis-associated receptor. J. Biol. Chem.2002; 277:32379-88.
Wang B, Matsuoka S, Balliff BA, et al. Abraxas and RAP80 form a BRCA1 protein complex required for the DNA damage response. Science2007; 316:1194-1198.
Kim H, Huang J, and Chen J. CCDC98 is a BRCA1-BRCT domain-binding protein involved in the DNA damage response. Nat. Struct. Mol. Biol.2007; 14:710-5.
Liu Z, Wu J, and Yu X. CCDC98 targets BRCA1 to DNA damage sites. Nat. Struct. Mol. Biol.2007; 14:716-20.

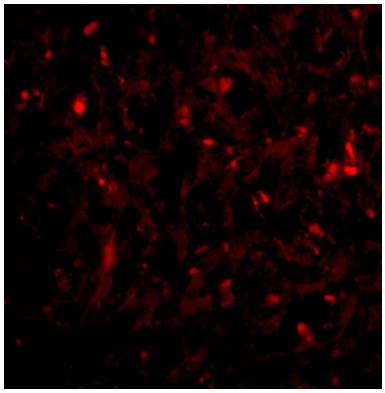
Images



Western blot analysis of RAP80 in 293 cell lysate in (A) the absence and (B) presence of blocking peptide with RAP80 antibody at 1 µg/mL.

Immunohistochemistry of RAP80 in human spleen tissue with RAP80 antibody at 2.5 µg/mL.





Immunofluorescence of RAP80 in human spleen tissue with RAP80 antibody at 20 µg/mL.