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RWDD3 Antibody

Catalog # ASC10985

Product Information

Application	WB, E
Primary Accession	Q9Y3V2
Other Accession	NP_056300, 153252154
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	30543
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	RWDD3 antibody can be used for detection of RWDD3 by Western blot at 0.5 g/mL.

Additional Information

Gene ID	25950
Other Names	RWD domain-containing protein 3, RWD domain-containing sumoylation enhancer, RSUME, RWDD3, RSUME
Target/Specificity	RWDD3;
Reconstitution & Storage	RWDD3 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	RWDD3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	RWDD3
Synonyms	RSUME
Function	Enhancer of SUMO conjugation. Via its interaction with UBE2I/UBC9, increases SUMO conjugation to proteins by promoting the binding of E1 and E2 enzymes, thioester linkage between SUMO and UBE2I/UBC9 and transfer of SUMO to specific target proteins which include HIF1A, PIAS, NFKBIA, NR3C1 and TOP1. Isoform 1 and isoform 2 positively regulate the NF-kappa-B signaling pathway by enhancing the sumoylation of NF-kappa-B inhibitor alpha (NFKBIA), promoting its stabilization which consequently leads to an increased inhibition of NF-kappa-B transcriptional activity. Isoform 1 and

	isoform 2 negatively regulate the hypoxia-inducible factor-1 alpha (HIF1A) signaling pathway by increasing the sumoylation of HIF1A, promoting its stabilization, transcriptional activity and the expression of its target gene VEGFA during hypoxia. Isoform 2 promotes the sumoylation and transcriptional activity of the glucocorticoid receptor NR3C1 and enhances the interaction of SUMO1 and NR3C1 with UBE2I/UBC9. Has no effect on ubiquitination.
Cellular Location	Nucleus. Cytoplasm. Note=Colocalizes with UBC9/UBE2I in nuclear spots.
Tissue Location	Isoform 1 and isoform 2 are expressed in glioma tumors (at protein level). Expressed in a wide number of tissues with highest expression in cerebellum, pituitary, heart, kidney, liver, stomach, pancreas, prostate and spleen. Low levels in thalamus, spinal cord, esophagus, thymus, lung and peripheral blood leukocytes. A higher level expression seen in pituitary tumors as compared to the pituitary gland.

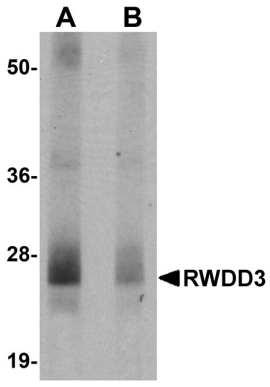
Background

RWDD3 Antibody: RWDD3 (RSUME), a small RWD-containing protein, has a central role in sumoylation by enhancing SUMO conjugation in the regulatory network of immune-inflammatory signals. RWDD3 increases IκBeta sumoylation and stability. In addition, RWDD3 inhibits TNF-α-induced kappaB-LUC (Luciferase) reporter activity, showing the functional consequence of IκBeta increased stability. RSUME-enhanced sumoylation of IκBeta leads to the inhibition of NF-κBeta activity on two well-known inflammatory genes, IL-8 and cyclooxygenase-2 (Cox-2) and therefore may also favor anti-inflammatory pathways. Expression of RWDD3 was induced under hypoxic conditions and it has a potential role during vascularization. Both BMP-4 and RWDD3 may be interesting targets for inhibiting steps involved in pituitary tumorigenesis.

References

Carbia-Nagashima A, Gerez J, Perez-Castro C, et al. RSUME, a small RWD-containing protein, enhances SUMO conjugation and stabilizes HIF-1alpha during hypoxia. Cell2007; 131:309-23.
Liberman AC, Druker J, Garcia FA, et al. Intracellular molecular signaling. Basis for specificity to glucocorticoid anti-inflammatory actions. Ann. NY Acad. Sci.2009; 1153:6-13.
Giacomini D, Haedo M, Gerez J, et al. Differential gene expression in models of pituitary prolactin-producing tumoral cells. Horm. Res.2009; 71 Suppl 2:88-94.

Images



Western blot analysis of RWDD3 in mouse kidney tissue lysate with RWDD3 antibody at 0.5 µg/mL in (A) the absence and (B) the presence of blocking peptide.

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