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SUFU Antibody [Knockdown Validated]

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AM8602b

Product Information

Application	WB, IHC-P, E
Primary Accession	Q9UMX1
Reactivity	Human, Mouse, Green Monkey
Predicted	Rat, Bovine, Canine, Rabbit, Chicken
Host	Mouse
Clonality	monoclonal
Isotype	IgG1,k
Clone Names	1783CT536.263.29
Calculated MW	53947

Additional Information

Gene ID	51684
Other Names	Suppressor of fused homolog, SUFUH, SUFU
Target/Specificity	This SUFU antibody is generated from a mouse immunized with a recombinant protein of human SUFU.
Dilution	WB~~1:2000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SUFU Antibody [Knockdown Validated] is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	SUFU {ECO:0000303|PubMed:12068298, ECO:0000312|HGNC:HGNC:16466}
Function	Negative regulator in the hedgehog/smoothened signaling pathway that acts by sequestering the GLI (GI1, GLI2 and GLI3) transcription factors in the cytoplasm (PubMed:10559945, PubMed:10564661, PubMed:10806483, PubMed:12068298, PubMed:12975309, PubMed:15367681, PubMed:22365972, PubMed:24217340, PubMed:24311597, PubMed:27234298, PubMed:28965847, PubMed:35831023). When

	smoothened signaling is initiated, GLI transcription factors dissociate from SUFU, translocate to the nucleus and activate expression of target genes (PubMed:24311597, PubMed:28965847, PubMed:35831023). In absence of smoothened signaling, the SUFU-GLI3 complex is recruited to cilia, leading to the efficient processing of full-length GLI3 into transcription repressor GLI3R: SUFU participates to GLI3 processing by promoting recruitment of GSK3B to GLI3 (PubMed:24311597, PubMed:28965847). May also act as a negative regulator of beta-catenin signaling (By similarity). Required for normal embryonic development (By similarity). Required for the proper formation of hair follicles and the control of epidermal differentiation (By similarity).
Cellular Location	Cytoplasm. Nucleus. Cell projection, cilium {ECO:0000250|UniProtKB:Q9Z0P7}. Note=Recruited to cilia in response to smoothened signaling, leading to dissociation from GLI (GI1, GLI2 and GLI3) transcription factors. {ECO:0000250|UniProtKB:Q9Z0P7}
Tissue Location	Ubiquitous in adult tissues. Detected in osteoblasts of the perichondrium in the developing limb of 12-week old embryos. Isoform 1 is detected in fetal brain, lung, kidney and testis Isoform 2 is detected in fetal testis, and at much lower levels in fetal brain, lung and kidney.

Background

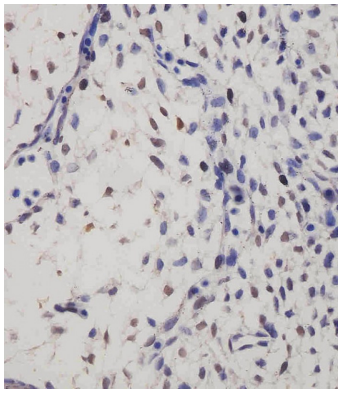
Negative regulator in the hedgehog signaling pathway. Down-regulates GLI1-mediated transactivation of target genes. Part of a corepressor complex that acts on DNA-bound GLI1. May also act by linking GLI1 to BTRC and thereby targeting GLI1 to degradation by the proteasome. Sequesters GLI1, GLI2 and GLI3 in the cytoplasm, this effect is overcome by binding of STK36 to both SUFU and a GLI protein. Negative regulator of beta-catenin signaling. Regulates the formation of either the repressor form (GLI3R) or the activator form (GLI3A) of the full length form of GLI3 (GLI3FL). GLI3FL is complexed with SUFU in the cytoplasm and is maintained in a neutral state. Without the Hh signal, the SUFU- GLI3 complex is recruited to cilia, leading to the efficient processing of GLI3FL into GLI3R. When Hh signaling is initiated, SUFU dissociates from GLI3FL and the latter translocates to the nucleus, where it is phosphorylated, destabilized, and converted to a transcriptional activator (GLI3A). Required for the proper formation of hair follicles and the control of epidermal differentiation (By similarity).

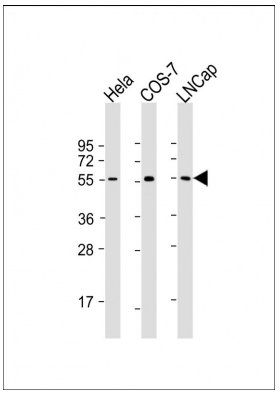
References

Stone D.M.,et al.J. Cell Sci. 112:4437-4448(1999).
Kogerman P.,et al.Nat. Cell Biol. 1:312-319(1999).
Taylor M.D.,et al.Nat. Genet. 31:306-310(2002).
Clark H.F.,et al.Genome Res. 13:2265-2270(2003).
Deloukas P.,et al.Nature 429:375-381(2004).

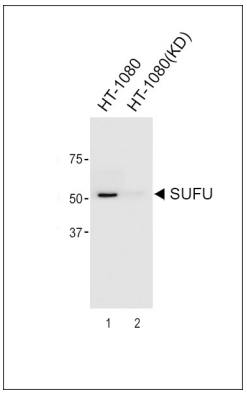
Images

AM8602b staining SUFU in mouse embryo tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 3% BSA for 0. 5 hour at room temperature; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody (1/25) for 1 hours at 37°C. A undiluted biotinylated goat polyvalent antibody was used as the secondary antibody.





All lanes : Anti-SUFU Antibody at 1:2000 dilution Lane 1: Hela whole cell lysate Lane 2: COS-7 whole cell lysate Lane 3: LNCap whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 54 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



All lanes : Anti-SUFU Antibody at 1:2000 dilution Lane 1: HT-1080 Lane 2: HT-1080 Knockdown Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Mouse IgG, (H+L), Peroxidase conjugated (ASP1613) at 1/8000 dilution.