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NDFIP1 Antibody

Catalog # ASC11525

Product Information

Application	WB, E
Primary Accession	Q9BT67
Other Accession	NP_085048, 13386480
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	24899
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	NDFIP1 antibody can be used for detection of NDFIP1 by Western blot at 0.5 - 1 □g/mL.

Additional Information

Gene ID	80762
Other Names	NEDD4 family-interacting protein 1, Breast cancer-associated protein SGA-1M, NEDD4 WW domain-binding protein 5, Putative MAPK-activating protein PM13, Putative NF-kappa-B-activating protein 164, Putative NFKB and MAPK-activating protein, NDFIP1, N4WBP5
Target/Specificity	NDFIP1; NDFIP1 antibody is predicted to not cross-react with NDFIP2.
Reconstitution & Storage	NDFIP1 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	NDFIP1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	NDFIP1
Synonyms	N4WBP5
Function	Activates HECT domain-containing E3 ubiquitin-protein ligases, including NEDD4 and ITCH, and consequently modulates the stability of their targets. As a result, controls many cellular processes. Prevents chronic T-helper cell-mediated inflammation by activating ITCH and thus controlling JUNB degradation (By similarity). Promotes pancreatic beta cell death through degradation of JUNB and inhibition of the unfolded protein response, leading

	to reduction of insulin secretion (PubMed:26319551). Restricts the production of pro- inflammatory cytokines in effector Th17 T-cells by promoting ITCH-mediated ubiquitination and degradation of RORC (By similarity). Together with NDFIP2, limits the cytokine signaling and expansion of effector Th2 T-cells by promoting degradation of JAK1, probably by ITCH- and NEDD4L-mediated ubiquitination (By similarity). Regulates peripheral T-cell tolerance to self and foreign antigens, forcing the exit of naive CD4+ T-cells from the cell cycle before they become effector T-cells (By similarity). Negatively regulates RLR-mediated antiviral response by promoting SMURF1-mediated ubiquitination and subsequent degradation of MAVS (PubMed:23087404). Negatively regulates KCNH2 potassium channel activity by decreasing its cell-surface expression and interfering with channel maturation through recruitment of NEDD4L to the Golgi apparatus where it mediates KCNH2 degradation (PubMed:26363003). In cortical neurons, mediates the ubiquitination of the divalent metal transporter SLC11A2/DMT1 by NEDD4L, leading to its down-regulation and protection of the cells from cobalt and iron toxicity (PubMed:19706893). Important for normal development of dendrites and dendritic spines in cortex (By similarity). Enhances the ubiquitination of BRAT1 mediated by: NEDD4, NEDD4L and ITCH and is required for the nuclear localization of ubiquitinated BRAT1 (PubMed:25631046). Enhances the ITCH-mediated ubiquitination of MAP3K7 by recruiting E2 ubiquitin-conjugating enzyme UBE2L3 to ITCH (By similarity). Modulates EGFR signaling through multiple pathways. In particular, may regulate the ratio of AKT1-to-MAPK8 signaling in response to EGF, acting on AKT1 probably through PTEN destabilization and on MAPK8 through ITCH-dependent MAP2K4 inactivation. As a result, may control cell growth rate (PubMed:20534535). Inhibits cell proliferation by promoting PTEN nuclear localization and changing its signaling specificity (PubMed:25801959).
Cellular Location	Endosome membrane; Multi-pass membrane protein. Golgi apparatus membrane. Synapse, synaptosome {ECO:0000250|UniProtKB:Q8R0W6}. Cell projection, dendrite {ECO:0000250|UniProtKB:Q5U2S1}. Secreted Note=Detected in exosomes and secreted via the exosomal pathway (PubMed:18819914)
Tissue Location	Widely expressed. Higher levels are detected in cerebellum, pituitary, thalamus, kidney, liver, testis, salivary glands and placenta. Also expressed in fetal brain, kidney and lung

Background

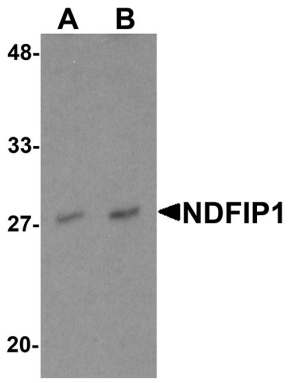
NDFIP1 Antibody: The NEDD4 family-interacting protein 1 (NDFIP1) belongs to a small group of evolutionarily conserved proteins with three transmembrane domains and is an integral Golgi membrane protein. It is a potential target for ubiquitination by the Nedd4 family of proteins. NDFIP1 is strongly expressed in surviving neurons following acute cortical brain injury, and overexpression in cultured cortical neurons increased survival following growth factor starvation, suggesting that NDFIP1 may play a role in neuronal survival. NDFIP1 and the related protein NDFIP2 are thought to interact with and regulate multiple components of the EGF and PTEN/Akt signaling pathways. Recent studies suggest that NDFIP1 may also play a role in Th17 differentiation by limiting the production of proinflammatory cytokines.

References

Harvey KF, Shearwin-Whyatt LM, Fotia A, et al. N4WBP5, a potential target for ubiquitination by the Nedd4 family of proteins, is a novel Golgi-associated protein. J. Biol. Chem. 2002; 277:9307-17.
Sang Q, Kim MH, Kumar S, et al. Nedd4-WW domain-binding protein 5 (Ndfip1) is associated with neuronal survival after acute cortical brain injury. J. Neurosci. 2006; 26:7234-44.
Mund T and Pelham HR. Regulation of PTEN/Akt and MAP kinase signaling pathways by the ubiquitin ligase activators Ndfip1 and Ndfip2. Proc. Natl. Acad. Sci. USA 2010; 107; 11429-34.

Ramon HE, Beal AM, Liu Y, et al. The E3 ubiquitin ligase adaptor Ndfip1 regulates Th17 differentiation by limiting the production of proinflammatory cytokines. J. Immunol. 2012; epub.

Images



Western blot analysis of NDFIP1 in PC-3 cell lysate with NDFIP1 antibody at (A) 0.5 and (B) 1 µg/mL.

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