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GPS2 Polyclonal Antibody

Catalog # AP70224

Product Information

Application	WB, E
Primary Accession	Q13227
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	36689

Additional Information

Gene ID	2874
Other Names	GPS2; G protein pathway suppressor 2; GPS-2
Dilution	WB~~Western Blot: 1/500 - 1/2000. ELISA: 1/40000. Not yet tested in other applications. E~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20℃

Protein Information

Name	GPS2 (HGNC:4550)
Function	Key regulator of inflammation, lipid metabolism and mitochondrion homeostasis that acts by inhibiting the activity of the ubiquitin-conjugating enzyme UBE2N/Ubc13, thereby inhibiting 'Lys-63'- linked ubiquitination (By similarity). In the nucleus, can both acts as a corepressor and coactivator of transcription, depending on the context (PubMed:24943844). Acts as a transcription coactivator in adipocytes by promoting the recruitment of PPARG to promoters: acts by inhibiting the activity of the ubiquitin-conjugating enzyme UBE2N/Ubc13, leading to stabilization of KDM4A and subsequent histone H3 'Lys-9' (H3K9) demethylation (By similarity). Promotes cholesterol efflux by acting as a transcription coactivator (PubMed:19481530). Acts as a regulator of B-cell development by inhibiting UBE2N/Ubc13, thereby restricting the activation of Toll-like receptors (TLRs) and B-cell antigen receptors (BCRs) signaling pathways (By similarity). Acts as a key mediator of mitochondrial stress response: in response to mitochondrial depolarization, relocates from the mitochondria to the nucleus following desumoylation and specifically promotes expression of nuclear-encoded mitochondrial genes (PubMed:29499132). Promotes transcription of nuclear-encoded mitochondrial genes by inhibiting

	UBE2N/Ubc13 (PubMed:29499132). Can also act as a corepressor as part of the N-Cor repressor complex by repressing active PPARG (PubMed:19858209, PubMed:24943844). Plays an anti-inflammatory role in macrophages and is required for insulin sensitivity by acting as a corepressor (By similarity). Plays an anti-inflammatory role during the hepatic acute phase response by interacting with sumoylated NR1H2 and NR5A2 proteins, thereby preventing N-Cor corepressor complex dissociation (PubMed:20159957). In the cytosol, also plays a non- transcriptional role by regulating insulin signaling and pro-inflammatory pathways (By similarity). In the cytoplasm, acts as a negative regulator of inflammation by inhibiting the pro-inflammatory TNF pathway; acts by repressing UBE2N/Ubc13 activity (By similarity). In the cytoplasm of adipocytes, restricts the activation of insulin signaling via inhibition of UBE2N/Ubc13-mediated ubiquitination of AKT (By similarity). Able to suppress G protein- and mitogen-activated protein kinase-mediated signal transduction (PubMed:8943324). Acts as a tumor-suppressor in liposarcoma (PubMed:27460081).
Cellular Location	Nucleus Mitochondrion. Cytoplasm, cytosol. Note=Sumoylation regulates the subcellular location (PubMed:24943844). Relocates from the mitochondria to the nucleus following desumoylation, leading to mediate mitochondrial stress response (By similarity) {ECO:0000250|UniProtKB:Q921N8, ECO:0000269|PubMed:24943844}
Tissue Location	Widely expressed..

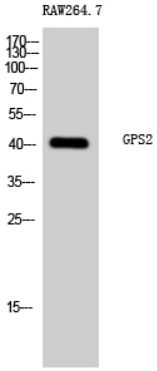
Background

Key regulator of inflammation, lipid metabolism and mitochondrion homeostasis that acts by inhibiting the activity of the ubiquitin-conjugating enzyme UBE2N/Ubc13, thereby inhibiting 'Lys-63'-linked ubiquitination (By similarity). In the nucleus, can both acts as a corepressor and coactivator of transcription, depending on the context (PubMed:24943844). Acts as a transcription coactivator in adipocytes by promoting the recruitment of PPARG to promoters: acts by inhibiting the activity of the ubiquitin-conjugating enzyme UBE2N/Ubc13, leading to stabilization of KDM4A and subsequent histone H3 'Lys-9' (H3K9) demethylation (By similarity). Promotes cholesterol efflux by acting as a transcription coactivator (PubMed:19481530). Acts as a regulator of B-cell development by inhibiting UBE2N/Ubc13, thereby restricting the activation of Toll-like receptors (TLRs) and B- cell antigen receptors (BCRs) signaling pathways (By similarity). Acts as a key mediator of mitochondrial stress response: in response to mitochondrial depolarization, relocates from the mitochondria to the nucleus following desumoylation and specifically promotes expression of nuclear-encoded mitochondrial genes (PubMed:29499132). Promotes transcription of nuclear-encoded mitochondrial genes by inhibiting UBE2N/Ubc13 (PubMed:29499132). Can also act as a corepressor as part of the N-Cor repressor complex by repressing active PPARG (PubMed:19858209, PubMed:24943844). Plays an anti-inflammatory role in macrophages and is required for insulin sensitivity by acting as a corepressor (By similarity). Plays an anti-inflammatory role during the hepatic acute phase response by interacting with sumoylated NR1H2 and NR5A2 proteins, thereby preventing N-Cor corepressor complex dissociation (PubMed:20159957). In the cytosol, also plays a non- transcriptional role by regulating insulin signaling and pro- inflammatory pathways (By similarity). In the cytoplasm, acts as a negative regulator of inflammation by inhibiting the proinflammatory TNF-alpha pathway; acts by repressing UBE2N/Ubc13 activity (By similarity). In the cytoplasm of adipocytes, restricts the activation of insulin signaling via inhibition of UBE2N/Ubc13-mediated ubiquitination of AKT (By similarity). Able to suppress G-protein- and mitogen-activated protein kinase- mediated signal transduction (PubMed:8943324). Acts as a tumor-suppressor in liposarcoma (PubMed:27460081).

Images

Western Blot analysis of RAW264.7 cells using GPS2 Polyclonal Antibody cells nucleus extracted by Minute TM Cytoplasmic and Nuclear Fractionation kit

(SC-003,Inventbiotech,MN,USA).



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