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AP2M1 Antibody

Catalog # ASC10903

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q96CW1
Other Accession	NP_004059, 14917109
Reactivity	Human, Mouse, Rat
Host	Chicken
Clonality	Polyclonal
Isotype	IgY
Calculated MW	49655
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	AP2M1 antibody can be used for detection of AP2M1 by Western blot at 1 - 2 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	1173
Other Names	AP-2 complex subunit mu, AP-2 mu chain, Adaptin-mu2, Adaptor protein complex AP-2 subunit mu, Adaptor-related protein complex 2 subunit mu, Clathrin assembly protein complex 2 mu medium chain, Clathrin coat assembly protein AP50, Clathrin coat-associated protein AP50, HA2 50 kDa subunit, Plasma membrane adaptor AP-2 50 kDa protein, AP2M1, CLAPM1, KIAA0109
Target/Specificity	AP2M1;
Reconstitution & Storage	AP2M1 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	AP2M1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	AP2M1 (HGNC:564)
Synonyms	CLAPM1, KIAA0109
Function	Component of the adaptor protein complex 2 (AP-2) (PubMed: 12694563, PubMed:12952941, PubMed:14745134, PubMed:14985334, PubMed:15473838, PubMed:31104773). Adaptor protein complexes function

	in protein transport via transport vesicles in different membrane traffic pathways (PubMed:12694563, PubMed:12952941, PubMed:14745134, PubMed:14985334, PubMed:15473838, PubMed:31104773). Adaptor protein complexes are vesicle coat components and appear to be involved in cargo selection and vesicle formation (PubMed:12694563, PubMed:12952941, PubMed:14745134, PubMed:14985334, PubMed:15473838, PubMed:31104773). AP-2 is involved in clathrin-dependent endocytosis in which cargo proteins are incorporated into vesicles surrounded by clathrin (clathrin-coated vesicles, CCVs) which are destined for fusion with the early endosome (PubMed:12694563, PubMed:12952941, PubMed:14745134, PubMed:14985334, PubMed:15473838, PubMed:31104773). The clathrin lattice serves as a mechanical scaffold but is itself unable to bind directly to membrane components (PubMed:12694563, PubMed:12952941, PubMed:14745134, PubMed:14985334, PubMed:15473838, PubMed:31104773). Clathrin-associated adaptor protein (AP) complexes which can bind directly to both the clathrin lattice and to the lipid and protein components of membranes are considered to be the major clathrin adaptors contributing the CCV formation (PubMed:12694563, PubMed:12952941, PubMed:14745134, PubMed:14985334, PubMed:15473838, PubMed:31104773). AP-2 also serves as a cargo receptor to selectively sort the membrane proteins involved in receptor-mediated endocytosis (PubMed:16581796). AP-2 seems to play a role in the recycling of synaptic vesicle membranes from the presynaptic surface (PubMed:12694563, PubMed:12952941, PubMed:14745134, PubMed:14985334, PubMed:15473838, PubMed:31104773). AP-2 recognizes Y-X-X-[FILMV] (Y-X-X-Phi) and [ED]-X-X-X-L-[LI] endocytosis signal motifs within the cytosolic tails of transmembrane cargo molecules (By similarity). AP-2 may also play a role in maintaining normal post-endocytic trafficking through the ARF6-regulated, non-clathrin pathway (PubMed:19033387). During long-term potentiation in hippocampal neurons, AP-2 is responsible for the endocytosis of ADAM10 (PubMed:23676497). The AP-2 mu subunit binds to transmembrane cargo proteins; it recognizes the Y- X-X-Phi motifs (By similarity). The surface region interacting with to the Y-X-X-Phi motif is inaccessible in cytosolic AP-2, but becomes accessible through a conformational change following phosphorylation of AP-2 mu subunit at Thr-156 in membrane-associated AP-2 (PubMed:11877457). The membrane-specific phosphorylation event appears to involve assembled clathrin which activates the AP-2 mu kinase AAK1 (PubMed:11877457). Plays a role in endocytosis of frizzled family members upon Wnt signaling (By similarity).
Cellular Location	Cell membrane. Membrane, coated pit; Peripheral membrane protein; Cytoplasmic side. Note=AP-2 appears to be excluded from internalizing CCVs and to disengage from sites of endocytosis seconds before internalization of the nascent CCV {ECO:0000250|UniProtKB:P84091}
Tissue Location	Expressed in the brain (at protein level).

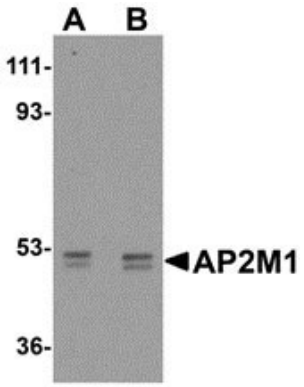
Background

AP2M1 Antibody: The heterotetrameric coat assembly protein complex, also known as the adaptor-related protein complex 2 (AP-2), belongs to the adaptor complexes medium subunits family. The mu 1 subunit of the AP-2 complex (AP2M1) is required for the activity of a vacuolar ATPase, which is responsible for proton pumping occurring in the acidification of endosomes and lysosomes. AP2M1 has also been shown to associate with the HIV-1 protein Nef, suggesting that Nef may use AP-2 complex to enhance the rate of endocytosis of both CD4 and class I MHC. AP2M1 may also play an important role in regulating the intracellular trafficking and function of cytotoxic T-lymphocyte associated (CTLA)-4 protein. At least two isoforms of AP2M1 are known to exist.

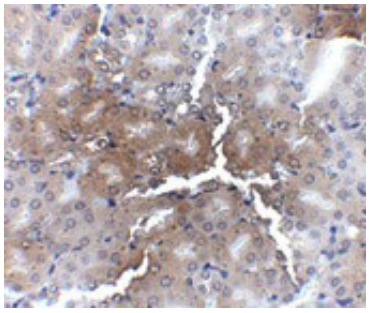
References

Robinson MS. Adaptable adaptors for coated vesicles. Trends Cell Biol.2004; 14:167-74.
Aguilar RC, Ohno H, Roche KW, et al. Functional domain mapping of the clathrin-associated adaptor medium chains mu1 and mu J. Biol. Chem.1997; 272:27160-6.
Liu Q, Feng Y, and Forgac M. Activity and in vitro reassembly of the coated vesicle (H+)-ATPase requires the 50-kDa subunit of the clathrin assembly complex AP-2. J. Biol. Chem.1994; 269:31592-7.
Craig HM, Reddy TR, Riggs NL, et al. Interactions of HIV-1 Nef with the m subunits of adaptor protein complexes 1, 2, and 3: role of the dileucine-based sorting motif. Virology271:9-17.

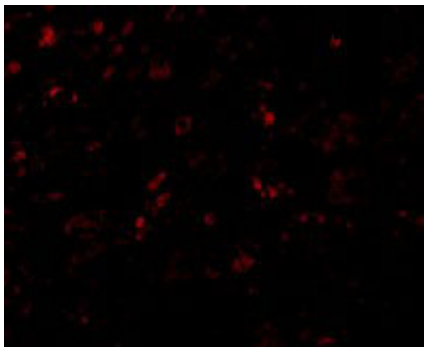
Images



Western blot analysis of AP2M1 in human kidney tissue lysate with AP2M1 antibody at (A) 1 and (B) 2 µg/mL.



Immunohistochemistry of AP2M1 in mouse kidney tissue with AP2M1 antibody at 2.5 µg/mL.



Immunofluorescence of AP2M1 in Mouse Kidney cells with AP2M1 antibody at 20 µg/mL.