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MNK / ATP7A Antibody (clone S60-4)

Mouse Monoclonal Antibody
Catalog # ALS15329

Specification

MNK / ATP7A Antibody (clone S60-4) - Product Information

Application	**WB, IHC-P, IP**
Primary Accession	Q04656
Reactivity	**Human, Mouse, Rat**
Host	**Mouse**
Clonality	**Monoclonal**
Calculated MW	**163kDa KDa**
Dilution	**WB~~1:1000** **IHC-P~~N/A** **IP~~N/A**

MNK / ATP7A Antibody (clone S60-4) - Additional Information

Gene ID 538

Other Names
Copper-transporting ATPase 1, 3.6.3.54, Copper pump 1, Menkes disease-associated protein, ATP7A, MC1, MNK

Target/Specificity
Detects ~180kDa in rat brainmembrane preparations.

Reconstitution & Storage
Short term 4°C, long term aliquot and store at -20°C, avoid freeze thaw cycles.

Precautions
MNK / ATP7A Antibody (clone S60-4) is for research use only and not for use in diagnostic or therapeutic procedures.

MNK / ATP7A Antibody (clone S60-4) - Protein Information

Name ATP7A {ECO:0000303|PubMed:28389643, ECO:0000312|HGNC:HGNC:869}

Function
ATP-driven copper (Cu(+)) ion pump that plays an important role in intracellular copper ion homeostasis (PubMed:10419525, PubMed:11092760, PubMed:28389643). Within a catalytic cycle, acquires Cu(+) ion from donor protein on the cytoplasmic side of the membrane and delivers it to acceptor protein on the lumenal side. The transfer of Cu(+) ion across the membrane is coupled to ATP hydrolysis and is associated with a transient phosphorylation that shifts the pump conformation from inward-facing to outward-facing state (PubMed:<a href="http://www.uniprot.org/citations/10419525"

target="_blank">10419525, PubMed:19453293, PubMed:19917612, PubMed:28389643, PubMed:31283225). Under physiological conditions, at low cytosolic copper concentration, it is localized at the trans-Golgi network (TGN) where it transfers Cu(+) ions to cuproenzymes of the secretory pathway (PubMed:11092760, PubMed:28389643). Upon elevated cytosolic copper concentrations, it relocalizes to the plasma membrane where it is responsible for the export of excess Cu(+) ions (PubMed:10419525, PubMed:28389643). May play a dual role in neuron function and survival by regulating cooper efflux and neuronal transmission at the synapse as well as by supplying Cu(+) ions to enzymes such as PAM, TYR and SOD3 (By similarity) (PubMed:28389643). In the melanosomes of pigmented cells, provides copper cofactor to TYR to form an active TYR holoenzyme for melanin biosynthesis (By similarity).

Cellular Location
Golgi apparatus, trans-Golgi network membrane; Multi-pass membrane protein. Cell membrane; Multi-pass membrane protein Melanosome membrane {ECO:0000250|UniProtKB:Q64430}; Multi-pass membrane protein. Early endosome membrane {ECO:0000250|UniProtKB:Q64430}; Multi-pass membrane protein. Cell projection, axon {ECO:0000250|UniProtKB:P70705} Cell projection, dendrite {ECO:0000250|UniProtKB:P70705}. Postsynaptic density {ECO:0000250|UniProtKB:P70705}. Note=Cycles constitutively between the TGN and the plasma membrane (PubMed:9147644). Predominantly found in the TGN and relocalized to the plasma membrane in response to elevated copper levels. Targeting into melanosomes is regulated by BLOC-1 complex (By similarity). In response to glutamate, translocates to neuron processes with a minor fraction at extrasynaptic sites (By similarity). {ECO:0000250|UniProtKB:P70705, ECO:0000250|UniProtKB:Q64430, ECO:0000269|PubMed:9147644} [Isoform 5]: Endoplasmic reticulum

Tissue Location
Widely expressed including in heart, brain, lung, muscle, kidney, pancreas, and to a lesser extent placenta (PubMed:8490646, PubMed:8490659). Expressed in fibroblasts, aortic smooth muscle cells, aortic endothelial cells and umbilical vein endothelial cells (at protein level) (PubMed:16371425)

MNK / ATP7A Antibody (clone S60-4) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

MNK / ATP7A Antibody (clone S60-4) - Images

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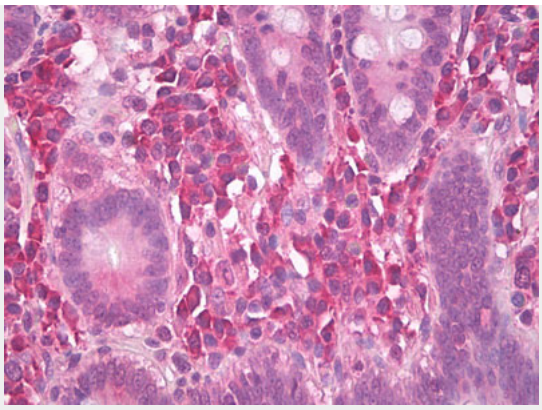

Anti-MNK / ATP7A antibody IHC of human small intestine.

MNK / ATP7A Antibody (clone S60-4) - Background

May supply copper to copper-requiring proteins within the secretory pathway, when localized in the trans-Golgi network. Under conditions of elevated extracellular copper, it relocalized to the plasma membrane where it functions in the efflux of copper from cells.

MNK / ATP7A Antibody (clone S60-4) - References

Vulpe C.D.,et al.Nat. Genet. 3:7-13(1993).
Vulpe C.D.,et al.Nat. Genet. 3:273-273(1993).
Tuemer Z.,et al.Genomics 26:437-442(1995).
Reddy M.C.,et al.Biochem. J. 334:71-77(1998).
Harris E.D.,et al.Adv. Exp. Med. Biol. 448:39-51(1999).