

MNK / ATP7A Antibody (clone S60-4)
Mouse Monoclonal Antibody
Catalog # ALS15329**Specification****MNK / ATP7A Antibody (clone S60-4) - Product Information**

| | |
|-------------------|------------------------|
| Application | IHC |
| Primary Accession | Q04656 |
| Reactivity | Human, Mouse, Rat |
| Host | Mouse |
| Clonality | Monoclonal |
| Calculated MW | 163kDa KDa |

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 luminal 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:10419525, PubMed:19453293, PubMed:19917612, PubMed:31283225).

target="_blank">31283225, PubMed:28389643). 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:28389643, PubMed:11092760). Upon elevated cytosolic copper concentrations, it relocates 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 copper efflux and neuronal transmission at the synapse as well as by supplying Cu(+) ions to enzymes such as PAM, TYR and SOD3 (PubMed:28389643) (By similarity). 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 relocated 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

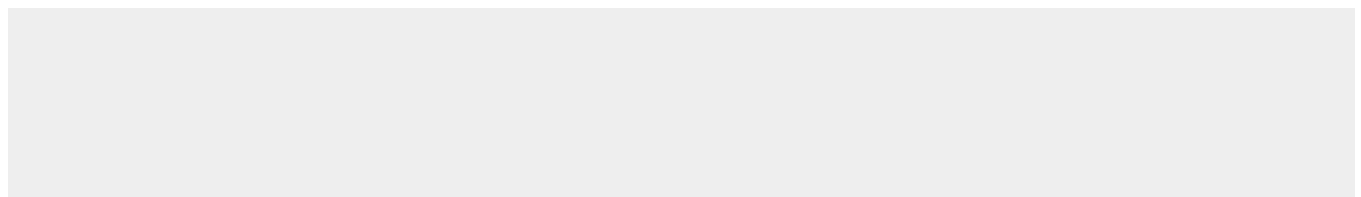
Widely expressed including in heart, brain, lung, muscle, kidney, pancreas, and to a lesser extent placenta (PubMed:8490646, PubMed:8490659). Expressed in fibroblasts, aortic smooth muscle cells, aortic endothelial cells and umbilical vein endothelial cells (at protein level) (PubMed:16371425)

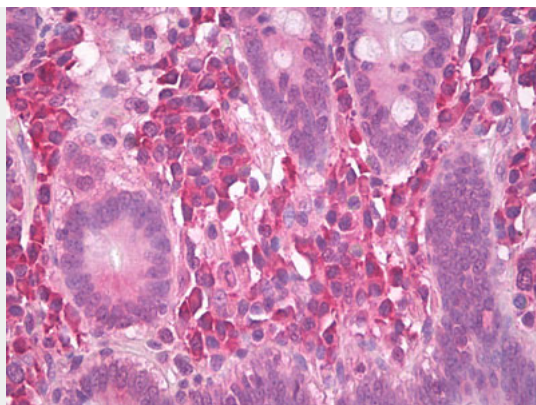
MNK / ATP7A Antibody (clone S60-4) - Protocols

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

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

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





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).