

Monoamine oxidase B

Cat.No. 385 005; Polyclonal Guinea pig antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For reconstitution add 50 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	WB: 1 : 1000 (AP staining) IP: not tested yet ICC: not tested yet IHC: 1 : 500 IHC-P: 1 : 500
Immunogen	Synthetic peptide corresponding to AA 455 to 464 from mouse MAOB (UniProt Id: Q8BW75)
Reactivity	Reacts with: mouse (Q8BW75), rat (P19643). Other species not tested yet.
Specificity	Specific for Monoamine oxidase B.

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Background

Monoamine oxidases (MAOs) belong to the family of flavin-containing amine oxidoreductases and are integral proteins of outer mitochondrial membranes. Isoenzymes MAO-A and **MAO-B** share roughly 70% of their structure. They occur in various cells in peripheral organs and in the CNS in both neuronal and non-neuronal cells, where they oxidatively deaminate biogenic and xenobiotic amines. They play an important role in the CNS in metabolic inactivation of released monoamine transmitters (catecholamines, serotonin and trace amines) and in detoxification of xenobiotic amines.

In rodent brain MAO-B metabolizes the trace amines phenylethylamine, methylhistamine, tyramine as well as octopamine. In human brain dopamine is also a substrate. Recent results identified MAO-B as a synthesizing enzyme of glial GABA, which is released to mediate tonic inhibition in the cerebellum and striatum. MAO-B is expressed in the CNS in serotonergic as well as in histaminergic neurons and in some astrocytes. The highest levels of MAO-B in peripheral organs are found in the liver and in the islets of Langerhans.

MAO inhibitors have provided therapies for both psychiatric as well as neurologic disorders. MAO-B has been reported to increase with aging and in several regions of the CNS in association with neurodegenerative disorders such as Parkinson's, Alzheimer's and Huntington's diseases. Plaque-associated astrocytes in Alzheimer's disease cortices have been shown to contain an increased amount of MAO-B activity.

Selected General References

Molecular aspects of monoamine oxidase B.

Ramsay RR et al. Prog. Neuropsychopharmacol. Biol. Psychiatry (2016) PubMed:26891670

Defining the Role of the Monoamine Oxidase-B Inhibitors for Parkinson's Disease.

Robakis D et al. CNS Drugs (2015) PubMed:26164425

Monoamine oxidase inhibitors: promising therapeutic agents for Alzheimer's disease (Review).

Cai Z et al. Mol Med Rep (2014) PubMed:24626484

Glial GABA, synthesized by monoamine oxidase B, mediates tonic inhibition.

Yoon BE et al. J. Physiol. (Lond.) (2014) PubMed:25239459

Up-regulation of the isoenzymes MAO-A and MAO-B in the human basal ganglia and pons in Huntington's disease revealed by quantitative enzyme radioautography.

Richards G et al. Brain Res. (2011) PubMed:21075085

Cloning, after cloning, knock-out mice, and physiological functions of MAO A and B.

Shih JC et al. Neurotoxicology (2004) PubMed:14697877

Increased monoamine oxidase B activity in plaque-associated astrocytes of Alzheimer brains revealed by quantitative enzyme radioautography.

Saura J et al. Neuroscience (1994) PubMed:7816197

Quantitative enzyme radioautography with 3H-Ro 41-1049 and 3H-Ro 19-6327 in vitro: localization and abundance of MAO-A and MAO-B in rat CNS, peripheral organs, and human brain.

Saura J et al. J. Neurosci. (1992) PubMed:1578281

Differential age-related changes of MAO-A and MAO-B in mouse brain and peripheral organs.

Saura J et al. Neurobiol. Aging () PubMed:7969716

Access the online factsheet including applicable protocols at <https://sysy.com/product/385005> or scan the QR-code.



FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.