SYSY Antibodies

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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_2O 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 (FFPE)**: 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 SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.