

Taok2 β

Cat.No. 395 003; Polyclonal rabbit antibody, 50 μ g specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 μ g specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For reconstitution add 50 μ l 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: yes ICC: not tested yet IHC: not tested yet IHC-P: not tested yet
Immunogen	Synthetic peptide corresponding to AA 1020 to 1041 from mouse Taok2-2 (UniProt Id: Q6ZQ29-2)
Reactivity	Reacts with: mouse (Q6ZQ29-2), rat (Q9JLS3-2). Other species not tested yet.
Specificity	K.O. validated PubMed: 36417873

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

Background

The serine/threonine-protein kinase **Taok 2** or TAO 2 plays a role in membrane blebbing and the formation of apoptotic bodies. Taok 2 is involved in the MAPK14/p38 MAPK stress-activated MAPK cascade. It may also affect the cytoskeletal organization and stability, the dendritic formation, and the osmotic stress-MAPK8 pathway. There are two isoforms, Taok 2 α and **Taok 2 β** , only the latter is required for PCDH8 endocytosis and CDH2 cointernalization.

Selected References for 395 003

The autism susceptibility kinase, TAO2, phosphorylates eEF2 and modulates translation. Henis M, Rücker T, Scharrenberg R, Richter M, Baltussen L, Hong S, Meka DP, Schwanke B, Neelagandan N, Daaboul D, Murtaza N, et al. Science advances (2024) 1015: eadf7001. . **WB, ICC, IP; tested species: mouse**

Neuron-specific protein network mapping of autism risk genes identifies shared biological mechanisms and disease-relevant pathologies. Murtaza N, Cheng AA, Brown CO, Meka DP, Hong S, Uy JA, El-Hajjar J, Pipko N, Unda BK, Schwanke B, Xing S, et al. Cell reports (2022) 418: 111678. . **WB, IP; KO verified; tested species: mouse,human**

Selected General References

TAOK2 Kinase Mediates PSD95 Stability and Dendritic Spine Maturation through Septin7 Phosphorylation. Yadav S, Osés-Prieto JA, Peters CJ, Zhou J, Pleasure SJ, Burlingame AL, Jan LY, Jan YN Neuron (2017) 932: 379-393. .

Autism spectrum disorder susceptibility gene TAO2 affects basal dendrite formation in the neocortex. de Anda FC, Rosario AL, Durak O, Tran T, Gräff J, Meletis K, Rei D, Soda T, Madabhushi R, Ginty DD, Kolodkin AL, et al. Nature neuroscience (2012) 157: 1022-31. .

Prostate-derived sterile 20-like kinases (PSKs/TAOKs) are activated in mitosis and contribute to mitotic cell rounding and spindle positioning. Wojtala RL, Tavares IA, Morton PE, Valderrama F, Thomas NS, Morris JD The Journal of biological chemistry (2011) 28634: 30161-70. .

Regulation of stress-responsive mitogen-activated protein (MAP) kinase pathways by TAO2. Chen Z, Cobb MH The Journal of biological chemistry (2001) 27619: 16070-5. .

Isolation of the protein kinase TAO2 and identification of its mitogen-activated protein kinase/extracellular signal-regulated kinase kinase binding domain. Chen Z, Hutchison M, Cobb MH The Journal of biological chemistry (1999) 27440: 28803-7. .

Access the online factsheet including applicable protocols at <https://sysy.com/product/395003> 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 a 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.