

Bassoon

Cat.No. 141 111; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

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| Reconstitution/Storage | 100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For reconstitution add 100 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 (see remarks) IP: not tested yet ICC: 1 : 500 IHC: 1 : 500 IHC-P: 1 : 500 up to 1 : 1000 DNA-PAINT: yes (see remarks) |
| Clone | 179H11A2 |
| Subtype | IgG2a (κ light chain) |
| Immunogen | Recombinant protein corresponding to residues near the central region of rat Bassoon. (UniProt Id: O88778) |
| Reactivity | Reacts with: mouse (O88737), rat (O88778). Other species not tested yet. |
| Specificity | specific for Bassoon K.O. validated PubMed: 33811381 |
| Remarks | WB: Due to its large size, bassoon requires special gel-electrophoresis and Western blot protocols for visualization by immunoblotting. Excellent results can be obtained with the 4-12% TRIS-glycine gradient gels from anamed or NuPAGE 3-8% TRIS-Acetate gradient gels from invitrogen. DNA-PAINT: This antibody has been successfully used for DNA-PAINT application (see Unterauer et al., 2024; PMID: 38552614). |

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

Background

Bassoon is a large protein which consists of an N-terminal Zn²⁺ finger and several piccolo-bassoon homology domains (PBH-domains). It is generally found together with piccolo, a related huge multi-domain protein of the CAZ (cytoskeletal matrix assembled at active zones).

Bassoon was suggested to be a scaffolding element of the presynapse but deletion experiments in mice have shown that bassoon is also involved in synaptic vesicle cycling. Probably bassoon interacts with other protein factors via its Zn²⁺ domain but the potential partners have not been determined yet.

Selected References for 141 111

- Spatial proteomics in neurons at single-protein resolution.
Unterauer EM, Shetab Boushehri S, Jevdokimenko K, Masullo LA, Ganji M, Sograte-Idrissi S, Kowalewski R, Strauss S, Reinhardt SCM, Perovic A, Marr C, et al.
Cell (2024) 1877: 1785-1800.e16. . **DNA_PAINT; tested species: rat**
- Kv3.3 subunits control presynaptic action potential waveform and neurotransmitter release at a central excitatory synapse.
Richardson A, Ciampini V, Stancu M, Bondarenko K, Newton S, Steinert JR, Pilati N, Graham BP, Kopp-Scheinflug C, Forsythe ID
eLife (2022) 11: . . **IHC; tested species: mouse**
- Genetic disruption of bassoon in two mutant mouse lines causes divergent retinal phenotypes.
Ryl M, Urbasik A, Gierke K, Babai N, Joachimsthaler A, Feigenspan A, Frischknecht R, Stallwitz N, Fejtová A, Kremers J, von Wittgenstein J, et al.
FASEB journal : official publication of the Federation of American Societies for Experimental Biology (2021) 355: e21520. . **WB; KO verified; tested species: mouse**
- Loss of microglial MCT4 leads to defective synaptic pruning and anxiety-like behavior in mice.
Monsorno K, Gingen K, Ivanov A, Buckinx A, Lalive AL, Tchenio A, Benson S, Vendrell M, D'Alessandro A, Beule D, Pellerin L, et al.
Nature communications (2023) 141: 5749. . **WB; tested species: mouse**
- The first synapse in vision in the aging mouse retina.
Gierke K, Lux UT, Regus-Leidig H, Brandstätter JH
Frontiers in cellular neuroscience (2023) 17: 1291054. . **IHC; tested species: mouse**

Selected General References

- Functional regions of the presynaptic cytomatrix protein bassoon: significance for synaptic targeting and cytomatrix anchoring.
Dresbach T, Hempelmann A, Spilker C, tom Dieck S, Altmack WD, Zuschratter W, Garner CC, Gundelfinger ED
Molecular and cellular neurosciences (2003) 232: 279-91. .
- Unitary assembly of presynaptic active zones from Piccolo-Bassoon transport vesicles.
Shapira M, Zhai RG, Dresbach T, Bresler T, Torres VI, Gundelfinger ED, Ziv NE, Garner CC
Neuron (2003) 382: 237-52. .
- Functional inactivation of a fraction of excitatory synapses in mice deficient for the active zone protein bassoon.
Altmack WD, tom Dieck S, Sokolov M, Meyer AC, Sigler A, Brakebusch C, Fässler R, Richter K, Boeckers TM, Potschka H, Brandt C, et al.
Neuron (2003) 375: 787-800. .
- The presynaptic active zone protein bassoon is essential for photoreceptor ribbon synapse formation in the retina.
Dick O, tom Dieck S, Altmack WD, Ammermüller J, Weiler R, Garner CC, Gundelfinger ED, Brandstätter JH
Neuron (2003) 375: 775-86. .
- Localization of the presynaptic cytomatrix protein Piccolo at ribbon and conventional synapses in the rat retina: comparison with Bassoon.
Dick O, Hack I, Altmack WD, Garner CC, Gundelfinger ED, Brandstätter JH
The Journal of comparative neurology (2001) 4392: 224-34. .

Access the online factsheet including applicable protocols at <https://sysy.com/product/141111> 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.