Synaptic Systems

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Vimentin

Cat.No. 172 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For **reconstitution** add 200 µl H_2O, then aliquot and store at -20°C until use. For detailed information, see back of the data sheet.
Applications	**WB**: 1 : 1000 (AP staining) **IP**: not tested yet **ICC**: 1 : 500 **IHC**: 1 : 200 up to 1 : 500 **IHC-P/FFPE**: 1 : 500 **EM**: yes
Immunogen	Recombinant protein corresponding to AA 1 to 466 from mouse Vimentin (UniProt Id: P20152)
Reactivity	Reacts with: human (P08670), rat (P31000), mouse (P20152), monkey. No signal: zebrafish. Other species not tested yet.
Specificity	Specific for vimentin. K.O. PubMed: 27419376

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

Access the online factsheet including applicable protocols at https://sysy.com/product/172002 or scan the QR-code.

Background

Vimentin belongs to the family of intermediate filaments that can be subdivided into six major groups based on sequence similarity. Vimentin belongs to the type III category and is the predominant subunit protein of intermediate filaments in tissues of mesenchymal origin.
Like other intermediate filaments it plays a role in the cytoskeletal organization and maintenance of cell shape and morphology.

Selected References for 172 002

Release of astroglial vimentin by extracellular vesicles: Modulation of binding and internalization of C3 transferase in astrocytes and neurons.
Adolf A, Rohrbeck A, Münster-Wandowski A, Johansson M, Kuhn HG, Kopp MA, Brommer B, Schwab JM, Just I, Ahnert-Hilger G, Höltje M, et al.
Glia (2018) : . . **WB, ICC, IHC, EM; KO verified**

The intermediate filament protein vimentin is essential for axonotrophic effects of Clostridium botulinum C3 exoenzyme.
Adolf A, Leondaritis G, Rohrbeck A, Eickholt BJ, Just I, Ahnert-Hilger G, Höltje M
Journal of neurochemistry (2016) 1392: 234-244. . **IHC, WB; KO verified**

Involvement of cancer-derived EMT cells in the accumulation of 18F-fluorodeoxyglucose in the hypoxic cancer microenvironment.
Sugita S, Yamato M, Hatabu T, Kataoka Y
Scientific reports (2021) 111: 9668. . **IHC; tested species: mouse**

A Simple DMSO-Based Method for Cryopreservation of Primary Hippocampal and Cortical Neurons.
Ishizuka Y, Bramham CR
Journal of neuroscience methods (2019) : 108578. . **WB; tested species: rat**

Tanycytes and a differential fatty acid metabolism in the hypothalamus.
Hofmann K, Lamberz C, Piotrowitz K, Offermann N, But D, Scheller A, Al-Amoudi A, Kuerschner L
Glia (2017) 652: 231-249. . **IHC; tested species: mouse**

A novel method for culturing stellate astrocytes reveals spatially distinct Ca2+ signaling and vesicle recycling in astrocytic processes.
Wolfes AC, Ahmed S, Awasthi A, Stahlberg MA, Rajput A, Magruder DS, Bonn S, Dean C
The Journal of general physiology (2017) 1491: 149-170. . **WB**

KCa3.1 channels modulate the processing of noxious chemical stimuli in mice.
Lu R, Flauaus C, Kennel L, Petersen J, Drees O, Kallenborn-Gerhardt W, Ruth P, Lukowski R, Schmidtko A
Neuropharmacology (2017) 125: 386-395. . **IHC; tested species: mouse**

NDRG2 as a marker protein for brain astrocytes.
Flügge G, Araya-Callis C, Garea-Rodriguez E, Stadelmann-Nessler C, Fuchs E
Cell and tissue research (2014) 3571: 31-41. . **IHC; tested species: marmoset**

Age-related brain pathology in Octodon degu: blood vessel, white matter and Alzheimer-like pathology.
van Groen T, Kadish I, Popović N, Popović M, Caballero-Bleda M, Baño-Otálora B, Vivanco P, Rol MÁ, Madrid JA
Neurobiology of aging (2011) 329: 1651-61. . **IHC**

Activity-dependent regulation of MHC class I expression in the developing primary visual cortex of the common marmoset monkey.
Ribic A, Flügge G, Schlumbohm C, Mätz-Rensing K, Walter L, Fuchs E
Behavioral and brain functions : BBF (2011) 7: 1. . **IHC**

Selected General References

Architecture of the vimentin cytoskeleton is modified by perturbation of the GTPase ARF1.
Styers ML, Kowalczyk AP, Faundez V
Journal of cell science (2006) 119Pt 17: 3643-54. .

A direct interaction between actin and vimentin filaments mediated by the tail domain of vimentin.
Esue O, Carson AA, Tseng Y, Wirtz D
The Journal of biological chemistry (2006) 28141: 30393-9. .

Ultrastructure of intermediate filaments of nestin- and vimentin-immunoreactive astrocytes in organotypic slice cultures of hippocampus.
Miyaguchi K
Journal of structural biology (1997) 1201: 61-8. .

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 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.