SYSY Antibodies

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# Tenascin-R

**Cat.No. 217 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)**

## Data Sheet

| | |
|---|---|
| Reconstitution/ Storage | 100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization.<br>For **reconstitution** add 100 µl $H_2O$ to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use.<br>Antibodies should be stored at +4°C when still lyophilized. Do not freeze!<br>For detailed information, see back of the data sheet. |
| Applications | **WB**: 1 : 1000 (AP staining)<br>**IP**: not tested yet<br>**ICC**: 1 : 500<br>**IHC**: 1 : 500<br>**IHC_P**: not recommended<br>**EM**: yes |
| Clone | 619 |
| Subtype | IgG1 (κ light chain) |
| Immunogen | full length bovine Tenascin-R isolated from brain |
| Reactivity | Reacts with: rat (Q05546), mouse (Q8BYI9), cow, chicken.<br>Other species not tested yet. |
| Specificity | K.O. PubMed: 16870730 |

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

## Background

**Tenascin-R**, also referred to as **TNR** and **J1-160/180**, is an extracellular matrix glycoprotein expressed by oligodendrocytes and subpopulations of neurons in the adult CNS of vertebrates. TNR is a member of the Tenascin family of multidomain adhesion molecules and affects neuronal cell migration and neurite extension.

## Selected References for 217 011

Mice deficient for tenascin-R display alterations of the extracellular matrix and decreased axonal conduction velocities in the CNS.
Weber P, Bartsch U, Rasband MN, Czaniera R, Lang Y, Bluethmann H, Margolis RU, Levinson SR, Shrager P, Montag D, Schachner M, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (1999) 1911: 4245-62. . **WB, IHC; KO verified**

Immunoelectron microscopic localization of the neural recognition molecules L1, NCAM, and its isoform NCAM180, the NCAM-associated polysialic acid, beta1 integrin and the extracellular matrix molecule tenascin-R in synapses of the adult rat hippocampus.
Schuster T, Krug M, Stalder M, Hackel N, Gerardy-Schahn R, Schachner M
Journal of neurobiology (2001) 492: 142-58. . **EM**

Nutritional regulation of oligodendrocyte differentiation regulates perineuronal net remodeling in the median eminence.
Kohnke S, Buller S, Nuzzaci D, Ridley K, Lam B, Pivonkova H, Bentsen MA, Alonge KM, Zhao C, Tadross J, Holmqvist S, et al.
Cell reports (2021) 362: 109362. . **IHC; tested species: mouse**

Synaptic coupling of inner ear sensory cells is controlled by brevican-based extracellular matrix baskets resembling perineuronal nets.
Sonntag M, Blosa M, Schmidt S, Reimann K, Blum K, Eckrich T, Seeger G, Hecker D, Schick B, Arendt T, Engel J, et al.
BMC biology (2018) 161: 99. . **IHC; tested species: mouse**

Hyaluronan deficiency due to Has3 knock-out causes altered neuronal activity and seizures via reduction in brain extracellular space.
Arranz AM, Perkins KL, Irie F, Lewis DP, Hrabe J, Xiao F, Itano N, Kimata K, Hrabetova S, Yamaguchi Y
The Journal of neuroscience : the official journal of the Society for Neuroscience (2014) 3418: 6164-76. . **IHC; tested species: mouse**

Tenascin-R restricts posttraumatic remodeling of motoneuron innervation and functional recovery after spinal cord injury in adult mice.
Apostolova I, Irintchev A, Schachner M
The Journal of neuroscience : the official journal of the Society for Neuroscience (2006) 2630: 7849-59. . **IHC; KO verified; tested species: mouse**

Postnatal development of perineuronal nets in wild-type mice and in a mutant deficient in tenascin-R.
Brückner G, Grosche J, Schmidt S, Härtig W, Margolis RU, Delpech B, Seidenbecher CI, Czaniera R, Schachner M
The Journal of comparative neurology (2000) 4284: 616-29. . **IHC; KO verified; tested species: mouse**

The distribution of tenascin-R in the developing avian nervous system.
Derr LB, McKae LA, Tucker RP
The Journal of experimental zoology (1998) 2802: 152-64. . **IHC; tested species: chicken**

Isolation of a tenascin-R binding protein from mouse brain membranes. A phosphacan-related chondroitin sulfate proteoglycan.
Xiao ZC, Bartsch U, Margolis RK, Rougon G, Montag D, Schachner M
The Journal of biological chemistry (1997) 27251: 32092-101. . **IHC; tested species: mouse**

Extracellular matrix remodeling through endocytosis and resurfacing of Tenascin-R.
Dankovich TM, Kaushik R, Olsthoorn LHM, Petersen GC, Giro PE, Kluever V, Agüi-Gonzalez P, Grewe K, Bao G, Beuermann S, Hadi HA, et al.
Nature communications (2021) 121: 7129. . **WB, IP, ICC, IHC, UPTAKE; KO,KD verified; tested species: mouse,rat**

## Selected General References

Competition and cooperation between tenascin-R, lecticans and contactin 1 regulate neurite growth and morphology.
Zacharias U, Rauch U
Journal of cell science (2006) 119Pt 16: 3456-66. .

Access the online factsheet including applicable protocols at https://sysy.com/product/217011 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.