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. 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. 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**: external data (see remarks) **ICC**: 1 : 500 **IHC**: 1 : 500 **IHC-P (FFPE)**: not recommended **EM**: external data (see remarks)
Clone	619
Subtype	IgG1 (κ light chain)
Immunogen	full length bovine Tenascin-R isolated from brain (UniProt Id: E1BKN2)
Reactivity	Reacts with: rat (Q05546), mouse (Q8BYI9), cow, chicken. Other species not tested yet.
Specificity	K.O. validated PubMed: 16870730
Remarks	**IP**: This antibody has been successfully applied and published for this method by customers (see application-specific references). It has not been validated using our standard protocols. **EM**: This antibody has been successfully applied and published for this method by customers (see application-specific references).

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 et al. J. Cell. Sci. (2006) PubMed:16899820

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 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.