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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 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: not tested yet ICC: 1: 500 IHC: 1: 500 IHC-P: not recommended EM: yes
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: <u>16870730</u>

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 our antibodies and control proteins / peptides are shipped lyophilized (vacuum freezedried) 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 freezethaw cycles.
- Please refer to our tips and hints for subsequent storage of reconstituted antibodies and control peptides and proteins.