

Product Information

Monoclonal Anti-DYNLT1, Clone T1

produced in mouse, purified immunoglobulin

Catalog Number **D9944**

Product Description

Monoclonal Anti-DYNLT1 (mouse IgG1 isotype) is derived from the hybridoma T1 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a recombinant dynein 1 light chain-myosin basic protein fusion protein (GenelD 6993).¹ The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-DYNLT1 recognizes human, monkey, bovine, rat, and mouse DYNLT1. The antibody may be used in various immunochemical techniques including immunoblotting (~12.5 kDa) and immunocytochemistry.¹

Cytoplasmic dynein motor complex is responsible for minus-end, microtubule-based motile processes.² It is thus involved in a wide range of eukaryotic cellular processes including trafficking of membranal vesicles, viruses and other intracellular particles. Each dynein complex consists of two heavy chains that have ATPase and motor activities, and a group of accessory polypeptides including dynein intermediate chains, light intermediate chains, and light chains. Several light chain subunits have been identified.³ Among these, DYNLT1 (previously known as Tctex-1) has been shown to be involved in cargo binding. It binds specifically to the cytoplasmic tail of rhodopsin and links rhodopsin-bearing vesicles to the dynein motor complex for transport.⁴ Upon specific phosphorylation of DYNLT1 on Ser⁸² residue, the dynein complex disassembles to release the cargo. This process is critical for the apical delivery of membrane cargoes.⁵ DYNLT1 has also been shown to mediate neurite extension by modulating actin dynamics and also Rac1 activity.⁶ Interestingly, the abundance and expression pattern of DYNLT1 in neuronal tissues may also contribute to the invasion capabilities of neurotropic viruses like poliovirus. These viruses utilize neuronal retrograde transport to invade the central nervous system, probably by association with DYNLT1 through the SKCSR motif within the juxtamembrane region of CD155 (the cellular receptor of poliovirus).⁷

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze at -20 °C in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 8-16 µg/mL is recommended using NRK total cell lysate.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

1. Lo, K.W.H., et al., *J. Biol. Chem.*, **282**, 36871-36878 (2007).
2. Hirokawa, N., *Science*, **279**, 519-526 (1998).
3. Vallee, R.B., et al., *J. Neurobiol.*, **58**, 189-200 (2004).
4. Tai, A.W., et al., *J. Cell. Biol.* **153**, 1499-1509 (2001).
5. Yeh, T.Y., et al., *Traffic*, **7**, 1495-1502 (2006).
6. Chung, J.Z., et al., *Dev. Cell*, **9**, 75-86 (2005).
7. Mueller, S., et al., *J. Biol. Chem.*, **277**, 7897-7904 (2002).

GG,TD,KAA,PHC 01/09-1

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications.

Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply.

Please see reverse side of the invoice or packing slip.