

Product Information

MONOCLONAL ANTI-DYNEIN (INTERMEDIATE CHAIN)

Mouse Ascites Fluid

Product Number **D 5167**

Product Description

Monoclonal anti-Dynein (Intermediate Chain) (mouse IgM isotype) is derived from the 70.1 hybridoma¹ produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with cytoplasmic dynein purified from chick brain. The isotype is determined using the Sigma ImmunoType[™] Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal anti-Dynein (Intermediate Chain) identifies the cytoplasmic dynein intermediate chains (triplet of approximately 70 kDa) of all vertebrates tested, in immunoblotting with dynein enriched preparations and with crude cell extracts. Using double-label immunofluorescence, the antibody localizes the cytoplasmic dynein to the kinetochores.¹⁻³ The antibody reacts with dynein of chicken, frog, hamster (CHO cell line), rat, marsupial (rat kangaroo, PtK₁ cell line), human (HeLa, MCF-7) and Indian muntjac (*Muntiacus muntjac vaginalis*). The antibody may also be used in ELISA and for immunopurification of dynein.

Monoclonal anti-Dynein (Intermediate Chain) may be used for the localization of dynein Intermediate Chain using various immunochemical assays such as ELISA, immunoblot, dot blot, immunocytochemistry and the immunopurification of dynein.

Eukaryotic cells rely on actin and microtubule-based protein "motors" to generate intracellular movements.⁴ These protein "motors" contain specialized domains that hydrolyse ATP to produce force and movement along a cytoskeletal polymer (actin in the case of myosin family and microtubules in the case of the kinesin family and dyneins). The minus-end-directed, microtubule motor, dynein ATPase is one of the most widely studied microtubule-associated energy transducing enzymes. It constitutes the outer and inner arms on the doublet tubules of sperm flagellar axonemes, where it generates the sliding between doublets that underlies flagellar beating.

Dynein has also been implicated in cytoplasmic motile functions, including chromosomal movement, retrograde organelle and axonal transport, the endocytic pathway, and the organization of the Golgi apparatus.

In all cell types, dynein has the same basic structures and is composed of two or three distinct heavy chains (approximately 450 kDa), three intermediate chains (70-125 kDa), and at least four light chains (15-25 kDa).⁵

Reagents

The product is provided as ascites fluid with 0.1% sodium azide as a preservative.

Precautions and Disclaimer

Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, the solution may be frozen in working aliquots. Repeated freezing and thawing is **not** recommended. Storage in "frost-free" freezers is **not** recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

Product Profile

Titer: At least 1:2,000

Titer was determined by immunoblotting using chick brain extract.

In order to obtain best results in different techniques or preparations, it is recommended that each individual user determine their optimal working dilutions by titration assay.

References

1. Steuer, E.R., et al., *Nature*, **345**, 266 (1990).
2. Zinkowski, R.P., et al., *J. Cell Biol.*, **113**, 1091 (1991).

3. Wordeman, L., et al., J. Cell Biol., **114**, 285 (1991).
4. Vallee, R.B., and H.S. Shpetner, Rev. Biochem., **59**, 909 (1990).
5. Mocz, G., et al., Biochemistry, **30**, 7225 (1991).

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