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Dynein Monoclonal Antibody (74.1)

Catalog Number **MA1-070**

Product data sheet

Details	
Size	100 µg
Host/Isotope	Mouse / IgG2b
Class	Monoclonal
Type	Antibody
Clone	74.1
Immunogen	Purified bovine brain cytoplasmic dynein.
Conjugate	Unconjugated
Form	Liquid
Concentration	1 mg/mL
Purification	Protein A
Storage buffer	PBS with 1mg/mL BSA
Contains	0.05% sodium azide
Storage Conditions	-20° C, Avoid Freeze/Thaw Cycles

Species Reactivity	
Species reactivity	Bovine, Human, Many, Mouse, Rat
Published species	Rat, Human, Mouse, Not Applicable

Tested Applications	Dilution *
Flow Cytometry (Flow)	1-2 µg/test
Immunoprecipitation (IP)	Assay-dependent
Western Blot (WB)	1 µg/mL
RNA Immunoprecipitation (RIP)	Assay-dependent
Immunocytochemistry (ICC/IF)	2-4 µg/mL

Published Applications	
Flow Cytometry (Flow)	See 1 publications below
Western Blot (WB)	See 4 publications below
Immunocytochemistry (ICC/IF)	See 1 publications below
Immunoprecipitation (IP)	See 2 publications below

* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

Product specific information

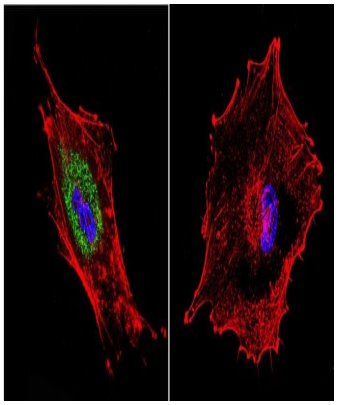
MA1-070 detects two isoforms of the ~74 kDa polypetide of cytoplasmic dynein. MA1-070 has been successfully used in Western blot immunofluorescence, and immunoprecipitation procedures. In Western blot analysis of HeLa cell lysate this antibody detects a ~74 kDa protein representing cytoplasmic dynein. The MA1-070 immunogen is purified bovine brain cytoplasmic dynein.

Background/Target Information

The directed movement of membrane-bounded organelles is an important process for various cellular functions including membrane transport, secretion, and axonal transport. Cytoplasmic dynein, a ubiquitous minus end-directed microtubule-based motor protein, is believed to be responsible for the retrograde transport of membranous organelles from the synapse to the cell body in fast axonal transport. The cytoplasmic dynein complex is composed of two ~530 kDa heavy chains, and intermediate chains of ~74 kDa and ~53-59 kDa.

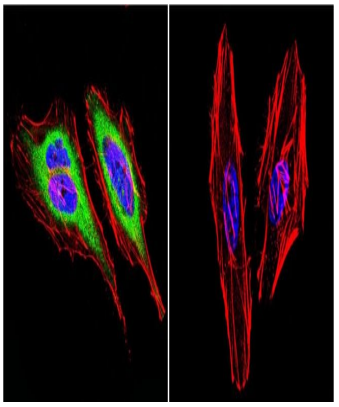
For Research Use Only. Not for use in diagnostic procedures. Not for resale without express authorization.

Product Images For Dynein Monoclonal Antibody (74.1)



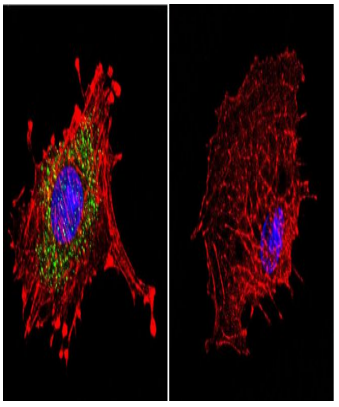
Dynein Antibody (MA1-070) in ICC/IF

Immunofluorescent analysis of Dynein in U87-MG Cells. Cells were grown on chamber slides and fixed with formaldehyde prior to staining. Cells were probed without (control) or with a Dynein monoclonal antibody (Product # MA1-070) at a dilution of 1:20 overnight at 4 C, washed with PBS and incubated with a DyLight-488 conjugated secondary antibody (Product # 35503). Dynein staining (green), F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue) is shown. Images were taken at 60X magnification.



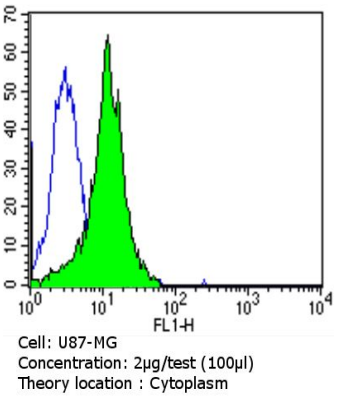
Dynein Antibody (MA1-070) in ICC/IF

Immunofluorescent analysis of Dynein in HeLa Cells. Cells were grown on chamber slides and fixed with formaldehyde prior to staining. Cells were probed without (control) or with a Dynein monoclonal antibody (Product # MA1-070) at a dilution of 1:20 overnight at 4 C, washed with PBS and incubated with a DyLight-488 conjugated secondary antibody (Product # 35503). Dynein staining (green), F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue) is shown. Images were taken at 60X magnification.



Dynein Antibody (MA1-070) in ICC/IF

Immunofluorescent analysis of Dynein in C6 Cells. Cells were grown on chamber slides and fixed with formaldehyde prior to staining. Cells were probed without (control) or with a Dynein monoclonal antibody (Product # MA1-070) at a dilution of 1:20 overnight at 4 C, washed with PBS and incubated with a DyLight-488 conjugated secondary antibody (Product # 35503). Dynein staining (green), F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue) is shown. Images were taken at 60X magnification.



Dynein Antibody (MA1-070) in Flow

Flow cytometry analysis of Dynein in U87-MG cells compared to an isotype control (blue). Cells were harvested, adjusted to a concentration of 1-5x10^6 cells/mL, fixed with 2% paraformaldehyde and washed with PBS. Cells were penetrated by dropping the supernatant, adding 90% methanol and incubated for 10 minutes at room temperature. Follwing penetration, cells were blocked with a 2% solution of BSA-PBS for 30 min at room temperature and incubated with a Dynein monoclonal antibody (Product # MA1-070) at a dilution of 2 µg/test for 60 min at room temperature. Cells were then incubated for 40 min at room temperature in the dark using a Dylight 488-conjugated goat anti-mouse IgG (H+L) secondary antibody and re-suspended in PBS for FACS analysis.

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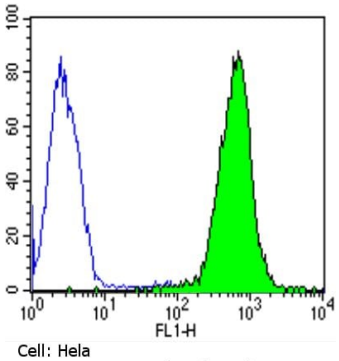
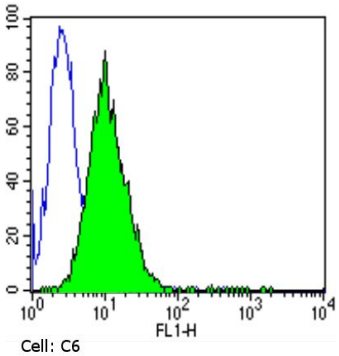


Cell: Hela
Concentration: 2µg/test (100µl)
Theory location : Cytoplasm

Dynein Antibody (MA1-070) in Flow

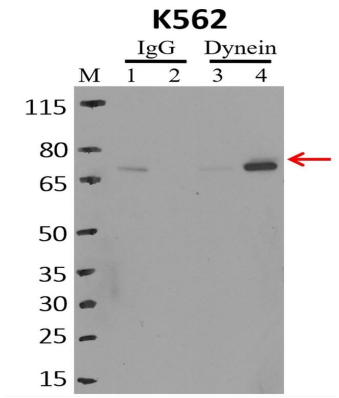
Flow cytometry analysis of Dynein in Hela cells compared to an isotype control (blue). Cells were harvested, adjusted to a concentration of 1-5x10^6 cells/mL, fixed with 2% paraformaldehyde and washed with PBS. Cells were penetrated by dropping the supernatant, adding 90% methanol and incubated for 10 minutes at room temperature. Follwing penetration, cells were blocked with a 2% solution of BSA-PBS for 30 min at room temperature and incubated with a Dynein monoclonal antibody (Product # MA1-070) at a dilution of 2 µg/test for 60 min at room temperature. Cells were then incubated for 40 min at room temperature in the dark using a Dylight 488-conjugated goat anti-mouse IgG (H+L) secondary antibody and re-suspended in PBS for FACS analysis.



Cell: C6
Concentration: 1µg/test (100µl)
Theory location : Cytoplasm

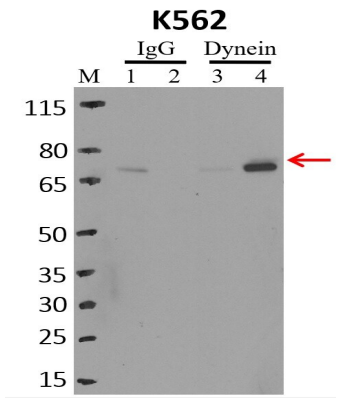
Dynein Antibody (MA1-070) in Flow

Flow cytometry analysis of Dynein in C6 cells compared to an isotype control (blue). Cells were harvested, adjusted to a concentration of 1-5x10^6 cells/mL, fixed with 2% paraformaldehyde and washed with PBS. Cells were penetrated by dropping the supernatant, adding 90% methanol and incubated for 10 minutes at room temperature. Follwing penetration, cells were blocked with a 2% solution of BSA-PBS for 30 min at room temperature and incubated with a Dynein monoclonal antibody (Product # MA1-070) at a dilution of 1 µg/test for 60 min at room temperature. Cells were then incubated for 40 min at room temperature in the dark using a Dylight 488-conjugated goat anti-mouse IgG (H+L) secondary antibody and re-suspended in PBS for FACS analysis.



Dynein Antibody (MA1-070) in IP

Immunoprecipitation of Dynein was performed on K562 cells. Antigen-antibody complexes were formed by incubating approximately 500 µg whole cell lysate with 5 µg of Dynein monoclonal antibody (Product # MA1-070) rotating 60 min at RT. The immune complexes were captured on 625 µg of anti-mouse coated Dynabeads (Product # 11202D), washed extensively, and eluted with NuPAGE™ LDS Sample Buffer (Product # NP0007). Samples were resolved onto NuPAGE™ 4-12% Bis-Tris gel (Product # NP0335BOX). Lanes 1 and 3 are input and lanes 2 and 4 are IP. Proteins were transferred to PVDF membrane (Product # IB23001). Membrane was blocked in 5% milk. Target was detected using a Dynein monoclonal antibody (Product # MA1-070) at a dilution of 1:2000, followed by a 1:4000 dilution of secondary antibody. Chemiluminescent detection was performed using ECL Western Blotting Substrate (Product # 32106). Data courtesy of the Yeo lab as part of the ENCODE project (www.encodeproject.org).



Dynein Antibody (MA1-070) in RIP

RNA immunoprecipitation (RIP) western of Dynein was performed on K562 cells. Antigen-antibody complexes were formed by incubating approximately 500 µg whole cell lysate with 5 µg of Dynein monoclonal antibody (Product # MA1-070) rotating 60 min at RT. The immune complexes were captured on 625 µg of anti-mouse coated Dynabeads (Product # 11202D), washed extensively, and eluted with NuPAGE™ LDS Sample Buffer (Product # NP0007). Samples were resolved onto NuPAGE™ 4-12% Bis-Tris gel (Product # NP0335BOX). Lanes 1 and 3 are input and lanes 2 and 4 are IP. Proteins were transferred to PVDF membrane (Product # IB23001). Membrane was blocked in 5% milk. Target was detected using a Dynein monoclonal antibody (Product # MA1-070) at a dilution of 1:2000, followed by a 1:4000 dilution of secondary antibody. Chemiluminescent detection was performed using ECL Western Blotting Substrate (Product # 32106). Data courtesy of the Yeo lab as part of the ENCODE project (www.encodeproject.org).

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PubMed References For Dynein Monoclonal Antibody (74.1)

1 Flow Cytometry References

Species / Dilution	Summary
Human / 1:50	MA1-070 was used in Flow Cytometry to suggest that cilia and ciliary proteins in circulation are detectable under various altered-flow conditions, which could serve as a surrogate biomarker of the damaged endothelium. JCI insight (2022; 7:) **"Cilia proteins are biomarkers of altered flow in the vasculature."** Author(s):Gupta A,Thirugnanam K,Thamilarasan M,Mohieldin AM,Zedan HT,Prabhudesai S,Griffin MR,Spearman AD,Pan A,Palecek SP,Yalcin HC,Nauli SM,Rarick KR,Zennadi R,Ramchandran R PubMed Article URL:http://dx.doi.org/10.1172/jci.insight.151813

4 Western Blot References

Species / Dilution	Summary
Not Applicable / Not Cited Human / Not Cited	MA1-070 was used in Western Blot, Immunocytochemistry to show that sorting nexin 27 modulates immune synapse organisation through regulated trafficking of cargoes in T lymphocytes. Frontiers in immunology (2022; 12:) **"Sorting Nexin 27 Enables MTOC and Secretory Machinery Translocation to the Immune Synapse."** Author(s):González-Mancha N,Rodríguez-Rodríguez C,Alcover A,Merida I PubMed Article URL:http://dx.doi.org/10.3389/fimmu.2021.814570
Mouse / Not Cited	MA1-070 was used in Western Blot to investigate the mechanism of induction of neurotoxicity by trimethyltin chloride. Autophagy (2021; 17: 903) **"KIF5A-dependent axonal transport deficiency disrupts autophagic flux in trimethyltin chloride-induced neurotoxicity."** Author(s):Liu M,Pi H,Xi Y,Wang L,Tian L,Chen M,Xie J,Deng P,Zhang T,Zhou C,Liang Y,Zhang L,He M,Lu Y,Chen C,Yu Z,Zhou Z PubMed Article URL:http://dx.doi.org/10.1080/15548627.2020.1739444
Not Applicable / 1:250	MA1-070 was used in western blot to study the interaction of components of the cytoskeleton with two new isoforms of the human hepatoma-derived growth factor Biological chemistry (2016; 397: 417) **"Two new isoforms of the human hepatoma-derived growth factor interact with components of the cytoskeleton."** Author(s):Nüße J,Mirastschijski U,Waespy M,Oetjen J,Brandes N,Rebello O,Paroni F,Kelm S,Dietz F PubMed Article URL:http://dx.doi.org/10.1515/hsz-2015-0273
Rat / Not Cited	MA1-070 was used in western blot to investigate the brain cytoplasmic IC74 isoforms and their interaction with dynein The Journal of biological chemistry (1996; 271: 1687) **"Differential expression and phosphorylation of the 74-kDa intermediate chains of cytoplasmic dynein in cultured neurons and glia."** Author(s):Pfister KK,Salata MW,Dillman JF,Vaughan KT,Vallee RB,Torre E,Lye RJ PubMed Article URL:http://dx.doi.org/10.1074/jbc.271.3.1687

1 Immunocytochemistry References

Species / Dilution	Summary
Human / Not Cited	MA1-070 was used in Western Blot, Immunocytochemistry to show that sorting nexin 27 modulates immune synapse organisation through regulated trafficking of cargoes in T lymphocytes. Frontiers in immunology (2022; 12:) **"Sorting Nexin 27 Enables MTOC and Secretory Machinery Translocation to the Immune Synapse."** Author(s):González-Mancha N,Rodríguez-Rodríguez C,Alcover A,Merida I PubMed Article URL:http://dx.doi.org/10.3389/fimmu.2021.814570

2 Immunoprecipitation References

Species / Dilution	Summary
Rat / Not Cited	MA1-070 was used in immunoprecipitation to investigate the relationship between dynein and slow axonal transport Proceedings of the National Academy of Sciences of the United States of America (1996; 93: 141) **"Cytoplasmic dynein is associated with slow axonal transport."** Author(s):Dillman JF,Dabney LP,Pfister KK PubMed Article URL:http://dx.doi.org/10.1073/pnas.93.1.141

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	MA1-070 was used in immunoprecipitation to investigate the regulation of cellular localization of mitochondria by dynein
Human / Not Cited	Journal of cell science (2004; 117: 4389) **"Cytoplasmic dynein regulates the subcellular distribution of mitochondria by controlling the recruitment of the fission factor dynamin-related protein-1."** Author(s):Varadi A,Johnson-Cadwell LI,Cirulli V,Yoon Y,Allan VJ,Rutter GA PubMed Article URL:http://dx.doi.org/10.1242/jcs.01299

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