

Dynein Monoclonal Antibody (74.1)

Catalog NumberMA1-070

Product data sheet

Details		Species Reactivity	
Size	100 µg	Species reactivity	Bovine, Human, Many, Mouse, Rat
Host/Isotope	Mouse / IgG2b	Published species	Rat, Human, Mouse, Not Applicable
Class	Monoclonal	Tested Applications	Dilution *
Type	Antibody	Flow Cytometry (Flow)	1-2 µg/test
Clone	74.1	Immunoprecipitation (IP)	Assay-dependent
Immunogen	Purified bovine brain cytoplasmic dynein.	Western Blot (WB)	1 µg/mL
Conjugate	Unconjugated	RNA Immunoprecipitation (RIP)	Assay-dependent
Form	Liquid	Immunocytochemistry (ICC/IF)	2-4 µg/mL
Concentration	1 mg/mL	Published Applications	
Purification	Protein A	Flow Cytometry (Flow)	See 1 publications below
Storage buffer	PBS with 1mg/mL BSA	Western Blot (WB)	See 3 publications below
Contains	0.05% sodium azide	Immunoprecipitation (IP)	See 2 publications below
Storage Conditions	-20° C, Avoid Freeze/Thaw Cycles	* 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

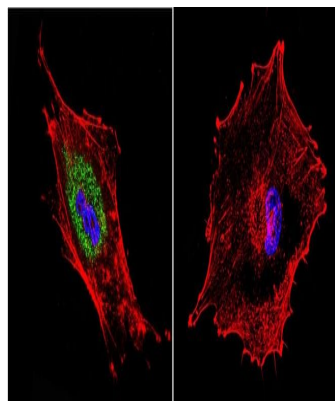
MA1-070 detects two isoforms of the ~74 kDa polypeptide of cytoplasmic dynein. MA1-070 has been successfully used in Western blot immunofluorescence, and immunoprecipitation procedures. In Western blot analysis of HeLa cell lysate this antibody detects a ~74 kDa protein representing cytoplasmic dynein.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

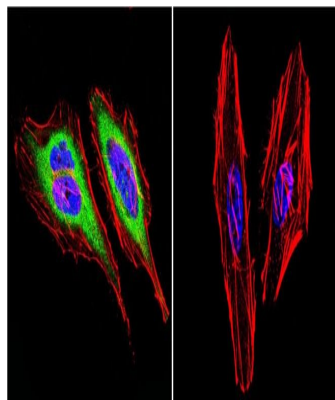
For Research Use Only. Not for use in diagnostic procedures. Not for resale without express authorization.

## Product Images For Dynein Monoclonal Antibody (74.1)



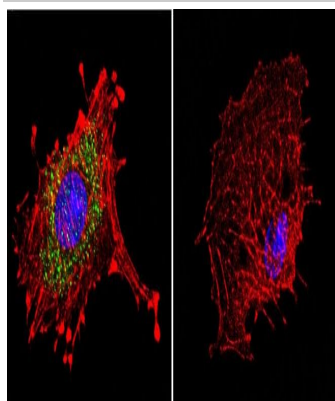
### Dynein Antibody (MA1-070) in ICC/IF

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.



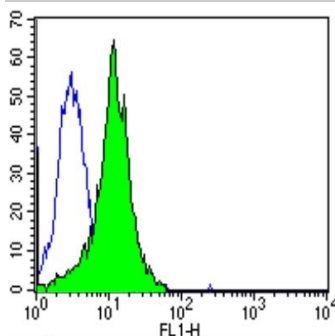
### Dynein Antibody (MA1-070) in ICC/IF

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.



Cell: U87-MG  
Concentration: 2µg/test (100µl)  
Theory location : Cytoplasm

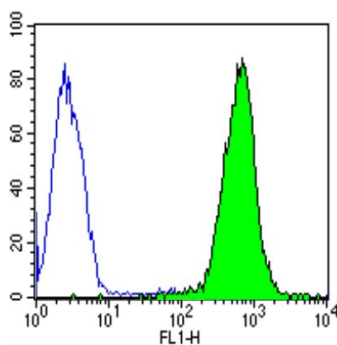
### Dynein Antibody (MA1-070) in Flow

Flow cytometry analysis of Dynein in U87-MG cells compared to an isotype control (blue). Cells were harvested, adjusted to a concentration of  $1-5 \times 10^6$  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. Following 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.

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

Products are warranted to operate or perform substantially in conformance with published Product specifications in effect at the time of sale, as set forth in the Product documentation, specifications and/or accompanying package inserts ("Documentation"). No claim of suitability for use in applications regulated by FDA is made. The warranty provided herein is valid only when used by properly trained individuals. Unless otherwise stated in the Documentation, this warranty is limited to one year from date of shipment when the Product is subjected to normal, proper and intended usage. This warranty does not extend to anyone other than the Buyer. Any model or sample furnished to Buyer is merely illustrative of the general type and quality of goods and does not represent that any Product will conform to such model or sample.

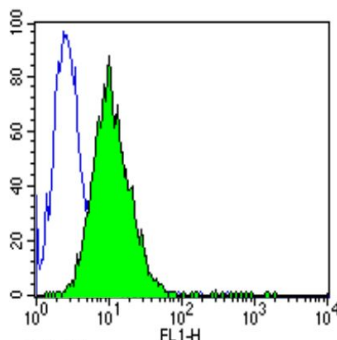
NO OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE GRANTED INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NON-INFRINGEMENT. BUYER'S EXCLUSIVE REMEDY FOR NON-CONFORMING PRODUCTS DURING THE WARRANTY PERIOD IS LIMITED TO REPAIR, REPLACEMENT OF OR REFUND FOR THE NON-CONFORMING PRODUCT(S) AT SELLER'S SOLE OPTION. THERE IS NO OBLIGATION TO REPAIR, REPLACE OR REFUND FOR PRODUCTS AS THE RESULT OF (i) ACCIDENT, DISASTER OR EVENT OF FORCE MAJEURE, (ii) MISUSE, FAULT OR NEGLIGENCE OF OR BY BUYER, (iii) USE OF THE PRODUCTS IN A MANNER FOR WHICH THEY WERE NOT DESIGNED, OR (iv) IMPROPER STORAGE AND HANDLING OF THE PRODUCTS. Unless otherwise expressly stated on the Product or in the documentation accompanying the Product, the Product is intended for research only and is not to be used for any other purpose, including without limitation, unauthorized commercial uses, in vitro diagnostic uses, ex vivo or in vivo therapeutic uses, or any type of consumption by or application to human or animals.



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

#### Dynein Antibody (MA1-070) in Flow

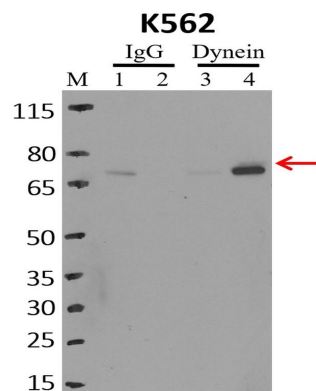
Flow cytometry analysis of Dynein in HeLa cells compared to an isotype control (blue). Cells were harvested, adjusted to a concentration of  $1-5 \times 10^6$  cells/mL, fixed with 2% paraformaldehyde and washed with PBS. Cells were penetrated by dropping the supernatant, adding 90% methanol and incubated for 10 minutes at room temperature. Following 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

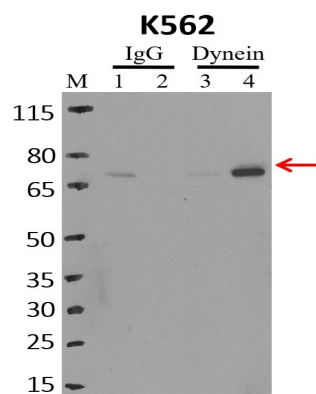
#### Dynein Antibody (MA1-070) in Flow

Flow cytometry analysis of Dynein in C6 cells compared to an isotype control (blue). Cells were harvested, adjusted to a concentration of  $1-5 \times 10^6$  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. Following 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](http://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](http://www.encodeproject.org)).

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

Products are warranted to operate or perform substantially in conformance with published Product specifications in effect at the time of sale, as set forth in the Product documentation, specifications and/or accompanying package inserts ("Documentation"). No claim of suitability for use in applications regulated by FDA is made. The warranty provided herein is valid only when used by properly trained individuals. Unless otherwise stated in the Documentation, this warranty is limited to one year from date of shipment when the Product is subjected to normal, proper and intended usage. This warranty does not extend to anyone other than the Buyer. Any model or sample furnished to Buyer is merely illustrative of the general type and quality of goods and does not represent that any Product will conform to such model or sample.

NO OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE GRANTED INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NON-INFRINGEMENT. BUYER'S EXCLUSIVE REMEDY FOR NON-CONFORMING PRODUCTS DURING THE WARRANTY PERIOD IS LIMITED TO REPAIR, REPLACEMENT OF OR REFUND FOR THE NON-CONFORMING PRODUCT(S) AT SELLER'S SOLE OPTION. THERE IS NO OBLIGATION TO REPAIR, REPLACE OR REFUND FOR PRODUCTS AS THE RESULT OF (i) ACCIDENT, DISASTER OR EVENT OF FORCE MAJEURE, (ii) MISUSE, FAULT OR NEGLIGENCE OF OR BY BUYER, (iii) USE OF THE PRODUCTS IN A MANNER FOR WHICH THEY WERE NOT DESIGNED, OR (iv) IMPROPER STORAGE AND HANDLING OF THE PRODUCTS. Unless otherwise expressly stated on the Product or in the documentation accompanying the Product, the Product is intended for research only and is not to be used for any other purpose, including without limitation, unauthorized commercial uses, in vitro diagnostic uses, ex vivo or in vivo therapeutic uses, or any type of consumption by or application to human or animals.

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: ) <b>"Cilia proteins are biomarkers of altered flow in the vasculature."</b> 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: <a href="http://dx.doi.org/10.1172/jci.insight.151813">http://dx.doi.org/10.1172/jci.insight.151813</a>

3 Western Blot References

Species / Dilution	Summary
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) <b>"KIF5A-dependent axonal transport deficiency disrupts autophagic flux in trimethyltin chloride-induced neurotoxicity."</b> 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: <a href="http://dx.doi.org/10.1080/15548627.2020.1739444">http://dx.doi.org/10.1080/15548627.2020.1739444</a>
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) <b>"Two new isoforms of the human hepatoma-derived growth factor interact with components of the cytoskeleton."</b> Author(s):Nüße J,Mirastschijski U,Waespy M,Oetjen J,Brandes N,Rebello O,Paroni F,Kelm S,Dietz F PubMed Article URL: <a href="http://dx.doi.org/10.1515/hsz-2015-0273">http://dx.doi.org/10.1515/hsz-2015-0273</a>
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) <b>"Differential expression and phosphorylation of the 74-kDa intermediate chains of cytoplasmic dynein in cultured neurons and glia."</b> Author(s):Pfister KK,Salata MW,Dillman JF,Vaughan KT,Vallee RB,Torre E,Lye RJ PubMed Article URL: <a href="http://dx.doi.org/10.1074/jbc.271.3.1687">http://dx.doi.org/10.1074/jbc.271.3.1687</a>

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) <b>"Cytoplasmic dynein is associated with slow axonal transport."</b> Author(s):Dillman JF,Dabney LP,Pfister KK PubMed Article URL: <a href="http://dx.doi.org/10.1073/pnas.93.1.141">http://dx.doi.org/10.1073/pnas.93.1.141</a>
Human / Not Cited	MA1-070 was used in immunoprecipitation to investigate the regulation of cellular localization of mitochondria by dynein
	Journal of cell science ( 2004; 117: 4389) <b>"Cytoplasmic dynein regulates the subcellular distribution of mitochondria by controlling the recruitment of the fission factor dynamin-related protein-1."</b> Author(s):Varadi A,Johnson-Cadwell LI,Cirulli V,Yoon Y,Allan VJ,Rutter GA PubMed Article URL: <a href="http://dx.doi.org/10.1242/jcs.01299">http://dx.doi.org/10.1242/jcs.01299</a>

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

Products are warranted to operate or perform substantially in conformance with published Product specifications in effect at the time of sale, as set forth in the Production documentation, specifications and/or accompanying package inserts ("Documentation"). No claim of suitability for use in applications regulated by FDA is made. The warranty provided herein is valid only when used by properly trained individuals. Unless otherwise stated in the Documentation, this warranty is limited to one year from date of shipment when the Product is subjected to normal, proper and intended usage. This warranty does not extend to anyone other than the Buyer. Any model or sample furnished to Buyer is merely illustrative of the general type and quality of goods and does not represent that any Product will conform to such model or sample.

NO OTHER WARRANTIES, EXPRESS OR IMPLIED, ARE GRANTED INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NON-INFRINGEMENT. BUYER'S EXCLUSIVE REMEDY FOR NON-CONFORMING PRODUCTS DURING THE WARRANTY PERIOD IS LIMITED TO REPAIR, REPLACEMENT OF OR REFUND FOR THE NON-CONFORMING PRODUCT(S) AT SELLER'S SOLE OPTION. THERE IS NO OBLIGATION TO REPAIR, REPLACE OR REFUND FOR PRODUCTS AS THE RESULT OF (i) ACCIDENT, DISASTER OR EVENT OF FORCE MAJEURE, (ii) MISUSE, FAULT OR NEGLIGENCE OF OR BY BUYER, (iii) USE OF THE PRODUCTS IN A MANNER FOR WHICH THEY WERE NOT DESIGNED, OR (iv) IMPROPER STORAGE AND HANDLING OF THE PRODUCTS. Unless otherwise expressly stated on the Product or in the documentation accompanying the Product, the Product is intended for research only and is not to be used for any other purpose, including without limitation, unauthorized commercial uses, in vitro diagnostic uses, ex vivo or in vivo therapeutic uses, or any type of consumption by or application to human or animals.