



Cytoskeleton's Tubulin Tools

Biologically Active Tubulin
Proteins, MAPs, and Kits



The Tubulin Experts since 1993
Cytoskeleton, Inc.

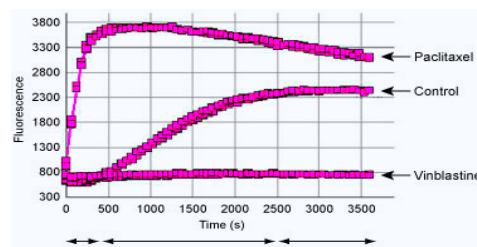


Tubulin Tools

Tubulin Biochem Kits

Cytoskeleton Inc. was the first company to offer biologically active tubulin proteins, kits and reagents for the scientific community. We continue to offer Tubulin kits that are designed to effectively and efficiently investigate tubulin dynamics, binding partners, and their kinetics; thereby, enhancing scientific productivity while saving investigators valuable time. For example, we offer two types of tubulin polymerization assay kits, an absorbance or fluorescence format. In most cases the fluorescence format is recommended because the assay is highly sensitive, efficient for higher throughput, and economical. The “classical” optical density based tubulin polymerization assay (Cat. # BK004P) is a well established format used by the tubulin community. See below for other popular tubulin kits offered by Cytoskeleton Inc.

Tubulin Biochem Kits	Cat. #	Assays
Tubulin Polymerization Assay Biochem Kit™ Turbidometric-based, >97% pure tubulin	BK004P	24-30
Tubulin Polymerization Assay Biochem Kit™ Turbidometric-based, >99% pure tubulin	BK006P	24-30
Tubulin Polymerization Assay Biochem Kit™ Fluorescence-based, >99% pure tubulin	BK011P	96
Microtubule Binding Protein Spin-Down Assay Biochem Kit™	BK029	30-100
Microtubule / Tubulin In Vivo Assay Biochem Kit™ Quantitates <i>in vivo</i> ratio of tubulin polymers & monomers	BK038	30-100



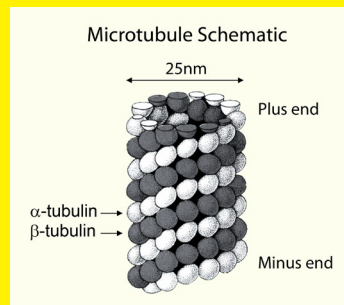
Tubulin polymerization using the fluorescence based tubulin polymerization assay (BK011P). Tubulin was incubated alone (Control), with Paclitaxel or Vinblastine. Each condition was tested in duplicate. Polymerization was measured by excitation at 360 nm and emission at 420 nm. The three Phases of tubulin polymerization are marked for the control polymerization curve; I: nucleation, II: growth, III: steady state equilibrium.

Purified Microtubule Associated Proteins (MAPs) and Motors

Microtubule Associated Proteins (MAPs) are proteins that interact with microtubules and/or tubulin. Through interaction with microtubules MAPs perform an array of functions including dynamic control of microtubules, transporting cargo along microtubule tracks, assisting with cell movement and structure, as well as an array of other functions. Cytoskeleton provides a spectrum of purified MAPs and motor proteins to assist investigators with their microtubule related studies. Below are a sample of available purified MAPs from Cytoskeleton. Go to www.cytoskeleton.com/tubulins for the comprehensive list.

Microtubule Associated Protein	Source	Purity	Cat. #	Amount
Eg5 Homolog BimC Motor Domain Protein	<i>A. nidulans</i>	>85%	BM01-A	2 x 25 µg
Chromokinesin Motor Domain Protein	<i>H. sapiens</i>	>85%	CR01-A	2 x 25 µg
Eg5 Motor Domain Protein	<i>H. sapiens</i>	>85%	EG01-A EG01-B EG01-XL	2 x 25 µg 10 x 25 µg 1 x 1 mg
Eg5 Homolog BimC Motor Domain Protein	<i>A. fumigatus</i>	>85%	EG02-A	2 x 15 µg
Eg5 Homolog BimC Motor Domain Protein	<i>A. fumigatus</i>	>85%	EG02-A	2 x 15 µg
KIFC3 Motor Domain Protein	<i>H. sapiens</i>	>85%	KC01-A	2 x 25 µg
KIF3C Motor Domain Protein	<i>H. sapiens</i>	>85%	KF01-A	2 x 25 µg
Kinesin Heavy Chain Motor Domain Protein	<i>H. sapiens</i>	>85%	KR01-A KR01-XL	2 x 25 µg 1 x 1 mg
MCAK Motor Domain Protein	<i>H. sapiens</i>	>85%	MK01-A	2 x 25 µg
MKLP1 Motor Domain Protein	<i>H. sapiens</i>	>85%	MP01-A MP01-XL	2 x 25 µg 1 x 1 mg
Tau Protein Bovine brain	<i>Bovine Brain</i>	>90%	TA01-A TA01-B	1 x 50 µg 3 x 50 µg

Pre-Formed Microtubules (Cat.# MT002)



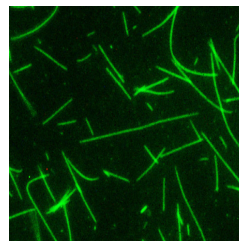
Microtubules serve as a substrate for kinesin motor proteins. Kinesin motor proteins orchestrate a wide range of kinetic events within a cell. They have been shown to move cargoes such as chromosomes and vesicles along Microtubule tracks. Cytoskeleton's pre-formed Microtubules are an excellent substrate for detecting Microtubule Binding Proteins in combination with the Kinesin Enzyme Linked Inorganic Phosphate ATPase Kit (Cat. #BK060).



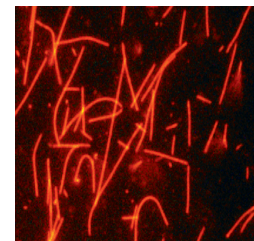
Tubulin Immunofluorescence Imaging Tools

Cytoskeleton offers bright and stable tubulin live cell imaging tools via our fluorescent tubulins and Spirochrome's SiR, SiR700, and SPY™ probes. Cytoskeleton's fluorescent tubulins are highly pure, highly published, and biologically active. Utilize the fluorescent tubulin tools to investigate microtubule dynamics, and use the Spirochrome probes to observe tubulin in living cells.

Labeled Tubulin Proteins	Ex / Em wavelength	Source	Purity	Cat. #	Amount
AMCA Labeled Tubulin	350 +/-20 nm 440 +/-20 nm	Porcine Brain	>99%	TL440M-A TL440M-B	5 x 20 µg 20 x 20 µg
HiLyte Fluor™ 488 Labeled Tubulin	460 +/-20 nm 520 +/-20 nm	Porcine Brain	>99%	TL488M-A TL488M-B	5 x 20 µg 20 x 20 µg
TRITC Rhodamine Labeled Tubulin	535 +/-20 nm 590 +/-20 nm	Porcine Brain	>99%	TL590M-A TL590M-B	5 x 20 µg 20 x 20 µg
X-Rhodamine Labeled Tubulin	560 +/- 20 nm 620 +/- 20 nm	Bovine Brain	>99%	TL620M-A TL620M-B	5 x 20 µg 20 x 20 µg
HiLyte Fluor™ 647 Labeled Tubulin	620 +/-20 nm 670 +/-20 nm	Porcine Brain	>99%	TL670M-A TL670M-B	5 x 20 µg 20 x 20 µg



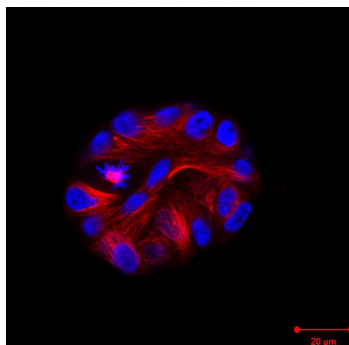
HiLyte Fluor™ 488 Labeled Tubulin - Cat. # TL488M



TRITC Rhodamine Labeled Tubulin - Cat. # TL590M

HiLyte Fluor is a trademark of Anaspec, Inc. (CA).

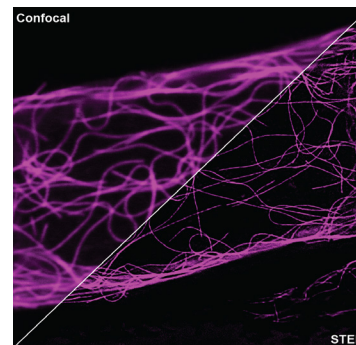
Live-cell imaging probes developed by Spirochrome are cell-permeable compounds which stain microtubules (SiR-Tubulin). The SPY™ probes are a brighter and less cytotoxic version of the SiR and SiR700 probes, and stain microtubules without the need for genetic manipulation or overexpression.



MCF10A cells expressing H2B-GFP (Blue) in Matrigel stained with SiR-tubulin (red). Courtesy of Christian Conrad and Katharina Jechow.



Live Cell Tubulin Probe	Ex/Em	Cat. #	Amount
SiR-Tubulin™ Kit Includes SiR-Tubulin, and Verapamil	630 / 680 nm	CY-SC002	50 nmol
Cytoskeleton Kit Includes SiR-Actin, SiR-tubulin and Verapamil	630 / 680 nm	CY-SC006	50 nmol each
SiR700-Tubulin Kit Includes SiR700-Tubulin and Verapamil	690 / 720 nm	CY-SC014	35 nmol
SPY555-Tubulin Includes SPY555-Tubulin	555 / 580 nm	CY-SC203	100 stains
SPY650-Tubulin Includes SPY650-Tubulin	652 / 674 nm	CY-SC503	100 stains



Comparison of SPY-labeled HeLa cells imaged with confocal vs. STED microscopy. Imaged with 93X objective and provided courtesy of Spirochrome.

Purified Tubulin Proteins

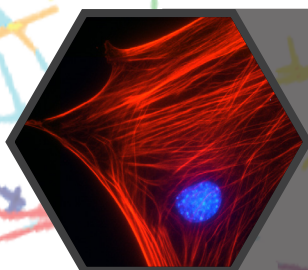
Since 1993 Cytoskeleton has provided purified tubulin proteins to the scientific community. We continually strive to provide the purest, most biologically active tubulin proteins for today's researchers. The available tubulin proteins are rigorously quality controlled for purity and biological activity. There are tubulins available from different species as well as different tissues within the same species. Go to www.cytoskeleton.com/tubulins for the full list of available purified tubulin proteins.

Tubulin Protein	Source	Purity	Cat. #	Amount
Tubulin Protein Lyophilized (no glycerol)	Porcine Brain	>99%	T240-A T240-B T240-C T240-DX	1 x 1 mg 5 x 1 mg 20 x 1 mg 1 x 10 mg
Tubulin Protein, MAP rich Lyophilized (no glycerol)	Porcine Brain	70% tubulin 30% MAPs	ML116-A ML116-B ML116-DX	1 x 1 mg 5 x 1 mg 1 x 10 mg
Tubulin for HTS Applications	Porcine Brain	97%	HTS03-A HTS03-B	1 x 4 mg 1 x 40 mg
Tubulin Protein Frozen (no glycerol)	Porcine Brain	>99%	T238P-A T238P-B T238P-C	1 x 1 mg 5 x 1 mg 20 x 1 mg

Acetylated Tubulin Now Available

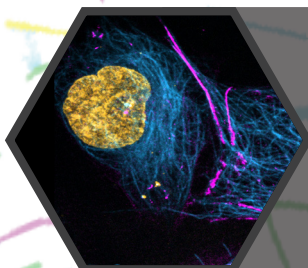
Cytoskeleton produces acetylated tubulin prepared from porcine brain at a purity of 90%. CS-TAC01 is perfect for studying acetylated and de-acetylated tubulin and can work in any researchers hands.





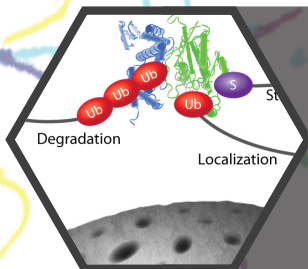
Actin Tools

- Acti-Stain Phalloidins
- Ultra Pure Actin Proteins
- New Pan-Actin Antibody



Live Cell Imaging Tools

- Spirochrome: Actin, DNA, and Tubulin Tools
- New MemGlow™ Fluorogenic Probes
- New Mechanosensory Probes and SPY-BG Dyes



Signal-Seeker™ Ubiquitin Tools

- Mono-/Poly-Ubiquitination Detection Kit
- Mono-/Poly-Ubiquitination Affinity Beads
- Ubiquitin Antibody-HRP labeled