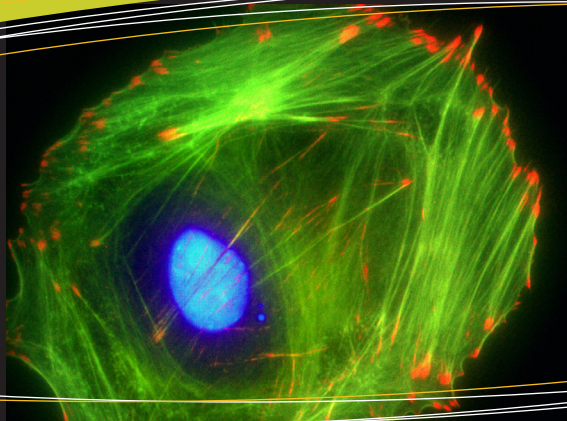


JULY  
2011



## this issue

Remodeling of the Actin Cytoskeleton  
Actin Publication Spotlight  
Actin Polymerization Kit  
Actin Products

### Upcoming Trade Shows

Neuroscience Nov 12-16  
AACR-NCI-EORTC Nov 12-16  
ASCB Dec 3-7

### Cytoskeleton Products

Actin Proteins  
Antibodies  
Activation Assays  
ELISA Kits  
G-LISA® Kits  
Pull-down Assays  
Motor Proteins  
Small-G-Proteins  
Tubulin Proteins

### Contact Us

P: 1 (303) 322.2254  
F: 1 (303) 322.2257  
E: cserve@cytoskeleton.com  
W: cytoskeleton.com

### Distributors

www.cytoskeleton.com/distr.html

## Q & A: Remodeling of the Actin Cytoskeleton

**Q** How do I study the assembly dynamics, movement and turnover of actin real-time in living cells using an easy-to-follow guide for microinjecting fluorescent proteins?

**Q** How do I obtain the highest spatial and temporal resolution image of actin remodeling and distribution?

**A** The Journal of Visualized Experiments (www.jove.com) provides visual demonstrations of how to utilize Cytoskeleton's fluorescently labeled actins for cutting-edge studies focused on microinjecting and visualizing fluorescent actin in live cells (1) as well as tracking the temporal and spatial dynamics of actin cytoskeleton remodeling (2). The success of these studies begins and ends with the quality of the fluorescently-labeled actin. See how Cytoskeleton's highly purified and labeled actin products enabled these technically challenging studies!

1. Marsick B.M., Letoumeau P.C. (2011). Labeling F-actin Barbed Ends with Rhodamine-actin in Permeabilized Neuronal Growth Cones. *JoVE* 49. <http://www.jove.com/index/Details.stp?ID=2409>, doi: 10.3791/2409  
2. Lim J., Danuser G. (2009). Live Cell Imaging of F-actin Dynamics via Fluorescent Speckle Microscopy (FSM). *JoVE* 30. <http://www.jove.com/index/Details.stp?ID=1325>, doi: 10.3791/1325

## Publication Spotlight

Cytoskeleton's actin products are utilized across the diverse scientific fields of cancer, neuroscience and cell biology. Check out these recent papers!

**Windhorst et al. (2011).** Functional role of inositol-1,4,5-trisphosphate-3-kinase-A for motility of malignant transformed cells. *International Journal of Cancer*. v 129: n/a. doi: 10.1002/ijc.25782

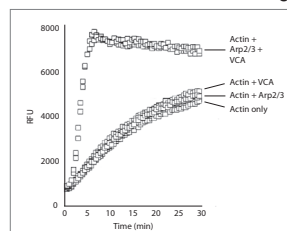
**Durand et al. (2011).** SHANK3 mutations identified in autism lead to modification of dendritic spine morphology via an actin-dependent mechanism. *Molecular Psychiatry*. doi:10.1038/mp.2011.57

**Choi et al. (2010).** Expression of actin-interacting protein 1 suppresses impaired chemotaxis of *Dictyostelium* cells lacking the Na-H exchanger NHE1. *Molecular Biology of the Cell*. v 21. pp 3162-3170.

## Actin Polymerization

Cytoskeleton Inc. provides an Actin Polymerization Biochem Kit™ (Cat. No. BK003) which is based upon the enhanced fluorescence of pyrene-conjugated actin that occurs during polymerization. It is a versatile kit and can be used to study the effects on polymerization (or depolymerization) following the addition of a compound, tissue extract or protein of interest.

- Utilizes fluorescent pyrene actin
- Useful for both F-actin polymerization and depolymerization
- Works with multiple sources of actin such as skeletal muscle, cardiac, and non-muscle actin
- Valuable for characterizing Actin Binding Proteins (ABPs)



Actin polymerization Biochem Kit™ was used to study the effects of Arp2/3 (Cat. # RP01) and the WASP VCA (Cat. # VCG03) domain on actin polymerization in vitro.

actin news

actin protocols

actin products

High Purity  
Label Options  
Antibodies & Buffers  
Actin Biochem Kits™

Visit [Cytoskeleton.com](http://Cytoskeleton.com) for more information on our expansive actin product line.

## Proteins (Unlabeled)

| Unlabeled Actin      | Source                         | Purity | Cat #    | Amount     |
|----------------------|--------------------------------|--------|----------|------------|
| <b>Actin Protein</b> | Rabbit skeletal muscle         | >99%   | AKL99-A  | 4 x 250 µg |
|                      |                                |        | AKL99-C  | 5 x 1 mg   |
|                      |                                |        | AKL99-D  | 10 x 1 mg  |
|                      |                                |        | AKL99-E  | 20 x 1 mg  |
| <b>Actin Protein</b> | Rabbit skeletal muscle         | >95%   | AKL95-B  | 1 x 1 mg   |
|                      |                                |        | AKL95-C  | 5 x 1 mg   |
|                      |                                |        | AKL95-D  | 10 x 1 mg  |
|                      |                                |        | AKL95-E  | 20 x 1 mg  |
| <b>Actin Protein</b> | Bovine cardiac muscle          | >99%   | AD99-A   | 1 x 1 mg   |
|                      |                                |        | AD99-B   | 5 x 1 mg   |
|                      |                                |        | AD99-C   | 20 x 1 mg  |
| <b>Actin Protein</b> | Smooth muscle, chicken gizzard | >99%   | AS99-A   | 1 x 1 mg   |
|                      |                                |        | AS99-B   | 5 x 1 mg   |
|                      |                                |        | AS99-C   | 20 x 1 mg  |
| <b>Actin Protein</b> | Human platelet, non-muscle     | >99%   | APHL99-A | 2 x 250 µg |
|                      |                                |        | APHL99-C | 1 x 1 mg   |
|                      |                                |        | APHL99-E | 5 x 1 mg   |
| <b>Actin Protein</b> | Human platelet, non-muscle     | >95%   | APHL95-C | 1 x 1 mg   |
|                      |                                |        | APHL95-D | 5 x 1 mg   |
|                      |                                |        | APHL95-E | 10 x 1 mg  |

## Proteins (Labeled)

| Labeled Actin                     | Source                     | Purity | Cat #   | Amount     |
|-----------------------------------|----------------------------|--------|---------|------------|
| <b>Biotinylated Actin Protein</b> | Rabbit skeletal muscle     | >99%   | AB07-A  | 5 x 20 µg  |
|                                   |                            |        | AB07-C  | 20 x 20 µg |
| <b>Pre-formed Actin Filaments</b> | Rabbit skeletal muscle     | >99%   | AKF99-A | 1 x 1 mg   |
|                                   |                            |        | AKF99-B | 5 x 1 mg   |
|                                   |                            |        | AKF99-C | 20 x 1 mg  |
| <b>Pyrene Actin Protein</b>       | Rabbit skeletal muscle     | >99%   | AP05-A  | 1 x 1 mg   |
|                                   |                            |        | AP05-B  | 5 x 1 mg   |
| <b>Rhodamine Actin Protein</b>    | Human platelet, non-muscle | >99%   | APHR-A  | 4 x 10 µg  |
|                                   |                            |        | APHR-C  | 20 x 10 µg |
| <b>Rhodamine Actin Protein</b>    | Rabbit skeletal muscle     | >99%   | AR05-B  | 10 x 20 µg |
|                                   |                            |        | AR05-C  | 20 x 20 µg |
| <b>Rhodamine Fibronectin</b>      | Bovine serum               | >90%   | FNR01-A | 2 x 20 µg  |
|                                   |                            |        | FNR01-B | 8 x 20 µg  |

## Binding Proteins

| Actin Binding Proteins  | Source  | Purity | Cat #            | Amount                   |
|---|---|--------|------------------|--------------------------|
| <b>α-Actinin Protein</b>  | Rabbit skeletal muscle                                  | >90%   | AT01-A           | 2 x 50 µg                |
|   |   |        | AT01-C           | 10 x 50 µg               |
| <b>Arp2/3 Protein Complex</b>   | Bovine brain  | >95%   | RP01-A           | 2 x 50 µg                |
|   |   |        | RP01-B           | 6 x 50 µg                |
| <b>Cofilin Protein</b>  | Recombinant human cofilin 1                             | 95%    | CF01-A<br>CF01-C | 1 x 100 µg<br>4 x 100 µg |
| <b>Gelsolin Protein</b>   | Recombinant human, plasma isoform                       | >95%   | HPG6-A           | 4 x 20 µg                |
|   |   |        | HPG6-B           | 20 x 20 µg               |
| <b>Myosin Cardiac Protein</b>   | Bovine cardiac muscle                                   | 95%    | MY03-A           | 1 x 1 mg                 |
|   |   |        | MY03-B           | 5 x 1 mg                 |
| <b>Myosin: Heavy Meromyosin Protein</b>                                 | Chymotrypsin digest of rabbit skeletal muscle myosin II | 70%    | MH01-A<br>MH01-B | 4 x 50 µg<br>20 x 50 µg  |
| <b>Myosin II Protein</b>  | Rabbit skeletal muscle                                  | 95%    | MY02-A           | 5 x 1 mg                 |
|   |   |        | MY02-B           | 20 x 1 mg                |
| <b>Profilin Protein</b>   | Recombinant human profilin 1                            | >95%   | PR01-A           | 1 x 50 µg                |
|   |   |        | PR01-C           | 4 x 50 µg                |
| <b>WASP VCA Domain GST Fusion Protein</b><br>Binds and activates Arp2/3 | Recombinant human                                       | >95%   | VCG03-A          | 1 x 500 µg               |
|   |   |        | VCG03-B          | 5 x 500 µg               |

## Biochem Kits™

| Product   | Cat # | Amount        |
|---|-------|---------------|
| <b>G-actin/F-actin <i>in vivo</i> Biochem Kit™</b>                      | BK037 | 30-100 Assays |
| <b>Actin Polymerization Biochem Kit™</b>                                | BK003 | 30-100 Assays |
| <b>Actin Binding Protein Spin-Down Assay Biochem Kit™</b><br>Non-muscle | BK001 | 30-100 Assays |
| <b>Actin Binding Protein Spin-Down Assay Biochem Kit™</b><br>Muscle     | BK013 | 30-100 Assays |
| <b>F-actin visualization Biochem Kit™</b>                               | BK005 | 300 Assays    |



Actin Biochem Kits™ are easy to use kits that simplify challenging experiments. These kits enable the user to successfully complete what could be a demanding assay, regardless of their experience level. Visit [cytoskeleton.com](http://cytoskeleton.com) for more information.

## Fluorescent Probes

| Product                           | Cat #   | Amount     |
|-----------------------------------|---------|------------|
| <b>Acti-stain™ 488 phalloidin</b> | PHDG1-A | 300 Slides |
| <b>Acti-stain™ 555 phalloidin</b> | PHDH1-A | 300 Slides |
| <b>Acti-stain™ 670 phalloidin</b> | PHDN1-A | 300 Slides |
| <b>Rhodamine phalloidin</b>       | PHDR1   | 1 x 500 µl |



**Bright & Stable**

## Antibodies

| Actin & ABP Antibodies              | Antigen                                 | Host   | Grade             | Cat #    | Amount     |
|-------------------------------------|---|--------|-------------------|----------|------------|
| <b>Actin Polyclonal Antibody</b>    | C-terminal a.a. of actin                | Rabbit | Affinity Purified | AAN01-A  | 1 x 100 µg |
|                                     |   |        |                   | AAN01-B  | 3 x 100 µg |
| <b>Cofilin Polyclonal Antibody</b>  | N-terminal 13-22 a.a. of human cofilin1 | Rabbit | Affinity Purified | ACFLO2-A | 1 x 50 µg  |
|                                     |   |        |                   | ACFLO2-B | 3 x 50 µg  |
| <b>Fibrillarin Monoclonal Ab</b>    | 72B9 (IgG2a)                            | Mouse  | Ascites           | AFB01-A  | 1 x 100 µg |
|                                     |   |        |                   | AFB01-B  | 3 x 100 µg |
| <b>Profilin Polyclonal Antibody</b> | Purified human profilin                 | Rabbit | Affinity Purified | APUF01-A | 1 x 50 µg  |
|                                     |   |        |                   | APUF01-B | 3 x 50 µg  |

## Buffers

| Actin Buffers  | Cat #     | Amount     |
|--|-----------|------------|
| <b>General Actin Buffer</b><br>For resuspending & diluting G-actin protein                   | BSA01-001 | 1 x 10 ml  |
|  | BSA01-010 | 1 x 100 ml |
| <b>Actin Polymerization Buffer (10X stock)</b>   | BSA02-001 | 1 x 2 ml   |
| <b>ATP (100 mM stock solution)</b><br>ATP is required for actin stability and polymerization | BSA04-001 | 1 x 1 ml   |