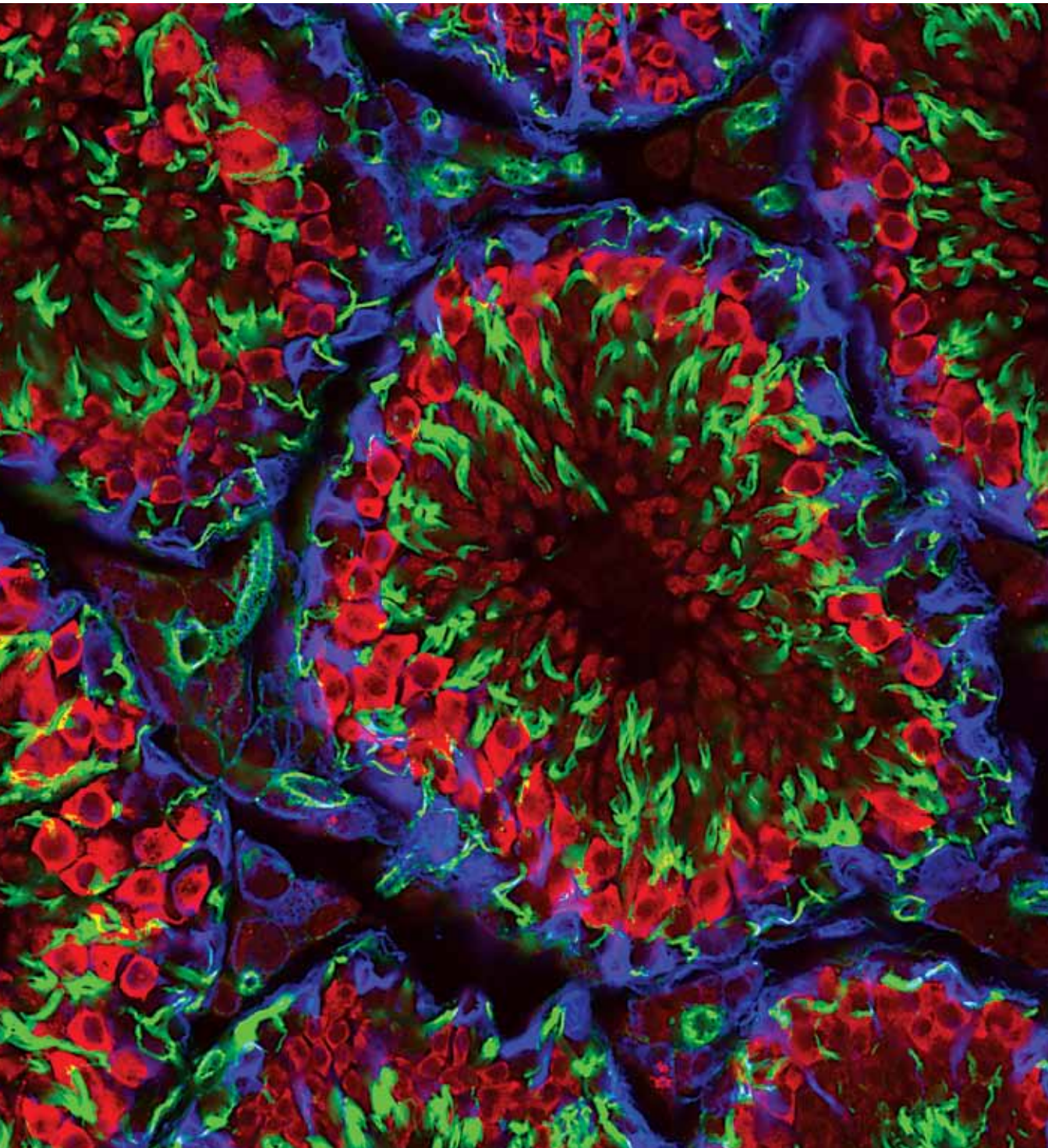




# ANTIBODIES, KITS, AND REAGENTS FOR IMMUNOFLUORESCENCE

Unparalleled Product Quality, Validation, and Technical Support



Cell Signaling

TECHNOLOGY®

# XP<sup>®</sup> Monoclonal Antibodies

XP<sup>®</sup> monoclonal antibodies are a line of high quality rabbit monoclonal antibodies exclusively available from Cell Signaling Technology (CST). Any product labeled with XP has been carefully selected based on superior performance in the most relevant applications.

These antibodies are generated using XMT<sup>®</sup> technology, a proprietary monoclonal method developed at CST. The technology provides access to a broad range of antibody-producing B cells unattainable with traditional monoclonal technologies, allowing more comprehensive screening and the identification of XP monoclonal antibodies with exceptional specificity, sensitivity, and performance.

## eXceptional specificity

As with all of our antibodies, the antibody is specific to your target of interest, saving you valuable time and resources.

## + eXceptional sensitivity

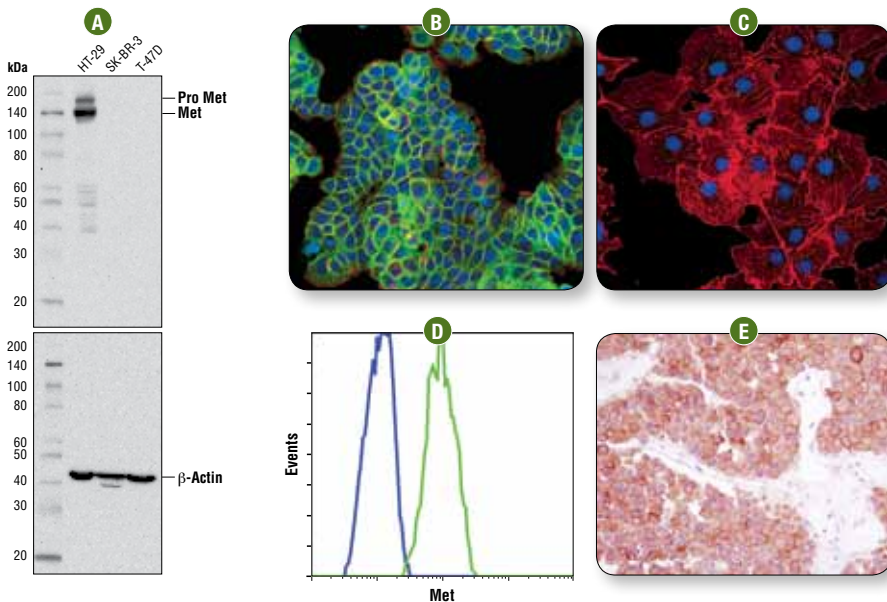
The antibody will provide a stronger signal for your target protein in cells and tissues, allowing you to monitor expression of low levels of endogenous proteins, saving you valuable materials.

## + eXceptional stability and reproducibility

XMT technology combined with our stringent quality control ensures maximum lot-to-lot consistency and the most reproducible results.

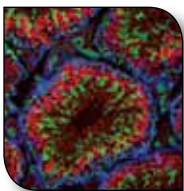
## = eXceptional Performance<sup>™</sup>

XMT technology coupled with our extensive antibody validation and stringent quality control delivers XP monoclonal antibodies with eXceptional Performance in the widest range of applications.



**Met (D1C2) XP<sup>®</sup> Rabbit mAb #8198:** Western blot analysis (A) of extracts from HT-29 (Met+), SK-BR-3 (Met-), and T-47D (Met-) cells using #8198 (upper) or  $\beta$ -Actin Antibody #4967 (lower). Confocal IF analysis of HT-29 (B) and T-47D (C) cells using #8198 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye). Flow cytometric analysis (D) of T-47D (blue) and HT-29 (green) cells using #8198. IHC analysis (E) of paraffin-embedded human hepatocellular carcinoma using #8198.

Visit our website for more experimental details, additional information, and a complete list of available XP monoclonal antibodies.



**Cover Image**

Vimentin (D21H3) XP<sup>®</sup> Rabbit mAb (Alexa Fluor<sup>®</sup> 647 Conjugate) #9856 (blue pseudocolor). Miwi (D92B7) XP<sup>®</sup> Rabbit mAb #6915 (red pseudocolor). Actin filaments were labeled using DY-554 phalloidin (green pseudocolor).



**WINNER!**

Life Science Industry Awards<sup>®</sup>

■ **Best Antibodies**

■ **Best Breakthrough Products for Cancer Research**

**Application Key:**

**W** Western / **IP** Immunoprecipitation / **IHC** Immunohistochemistry  
**IF** Immunofluorescence / **F** Flow Cytometry  
**ChIP** Chromatin Immunoprecipitation / **HCA** High Content Analysis  
 (-**IC** Immunocytochemistry, -**P** Paraffin, -**F** Frozen) / **E-P** Peptide ELISA

**Reactivity Key:**

**H** human / **M** mouse / **R** rat / **Hm** hamster / **Mk** monkey / **C** chicken  
**Mi** mink / **Dm** D. melanogaster / **X** Xenopus / **Z** zebra fish / **B** bovine  
**Dg** dog / **Pg** pig / **Sc** S. cerevisiae / **Ce** C. elegans  
**All** all species expected / ( ) 100% sequence homology

For Research Use Only. Not For Use In Diagnostic Procedures.

# Antibodies, Kits, and Reagents for Immunofluorescence

Cell Signaling Technology (CST) provides the highest quality activation state and total protein antibodies available for use in immunofluorescence (IF). Our in-house IF group has validated each IF-recommended CST<sup>™</sup> antibody using multiple approaches. Technical support is provided by the same scientists who validate these products.

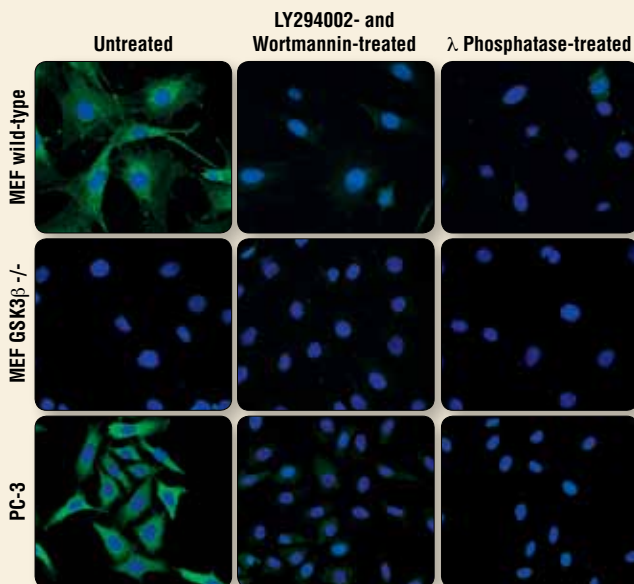
- 4 Antibody Validation for Immunofluorescence
- 6 Alexa Fluor<sup>®</sup> Conjugates for Immunofluorescence
- 8 Complementary Reagents and Controls
- 10 Organelle Markers
- 12 Tyrosine Kinases
- 13 MAP Kinase Signaling
- 14 PI3K/Akt Signaling
- 15 Development and Differentiation
- 16 Embryonic Stem Cell Markers
- 17 Lineage-specific Markers
- 20 Neuroscience
- 22 Immunology and Inflammation
- 24 Chromatin and Epigenetic Regulation
- 27 Apoptosis and Autophagy
- 28 Translational Control
- 30 Cellular Metabolism
- 32 Cell Cycle, Checkpoint Control, and DNA Damage
- 34 Cytoskeletal Regulation and Adhesion
- 36 Epitope Tag Antibodies
- 37 Protein Folding and Stability
- 38 Motif and Other Antibodies
- 39 Immunofluorescence Protocol

# Antibody Validation for Immunofluorescence

Scientists at Cell Signaling Technology (CST) have validated over 800 activation state-specific (e.g., phosphorylation-specific) and total protein antibodies for immunofluorescence (IF) applications, such as manual fluorescence microscopy or automated imaging and laser scanning high content platforms. All CST™ antibodies approved for use in immunofluorescent assays have undergone a rigorous validation process. In addition, our IF team has created multiple custom protocols for optimal fixation and staining of specific products; all protocols are available on our website and are available as links from product pages.

## Phosphatase Treatment and Knockout Cells:

Cells are subjected to phosphatase treatment to verify phospho-specificity. Target specificity is also verified with the use of known knockout or null cell lines.

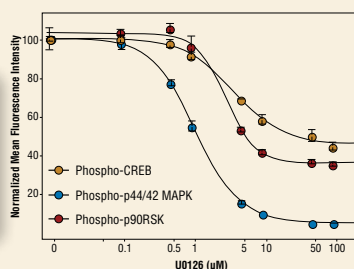
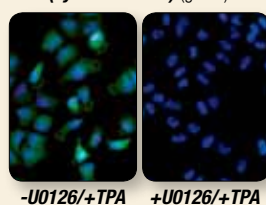


**Phospho-GSK-3β (Ser9) (D85E12) XP® Rabbit mAb #5558:** Confocal IF analysis of wild-type mouse embryonic fibroblasts (MEFs) (top row), GSK-3β (-/-) MEFs (middle row), or PC-3 cells (bottom row), untreated (left), LY294002 and Wortmannin-treated (#9901 and #9951 respectively; center) or λ phosphatase-treated (right), using #5558 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye). (MEF wild-type and GSK-3β (-/-) cells were kindly provided by Dr. Jim Woodgett, University of Toronto, Canada).

## High Content Screening

Our High Content Screening (HCS) group tests IF-validated antibodies on in-house HCS platforms, which include the TTP LabTech Acumen® eX<sup>3</sup> and Cellomics® ArrayScan® V<sup>TI</sup>. This allows us to assess antibody performance on HCS platforms to provide you with the best possible support for your HCS assays.

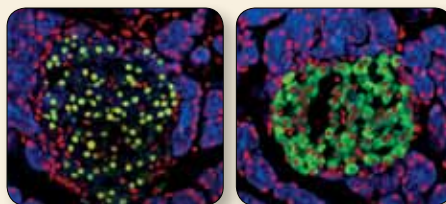
### Phospho-p44/42 MAPK (Erk1/2) (Tyr202/Thr204) (green)



**Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb #4370, Phospho-p90RSK (Thr573) Antibody #9346, and Phospho-CREB (Ser133) (87G3) Rabbit mAb #9198:** A549 cells were concurrently exposed to U0126 (MEK1/2 inhibitor) #9903 and the phorbol ester TPA #4174 to assess the effect on MAPK signaling. Phospho-p44/42 MAPK (Erk1/2), detected with #4370, and two downstream signaling proteins, phospho-p90RSK and phospho-CREB, detected with #9346 and #9198, were used as readouts. U0126 was titrated as an 8-point dose curve in triplicate to monitor the reproducibility and validity of the assay. The signal for each antibody was analyzed using an Acumen® eX<sup>3</sup> and images were acquired with a Cellomics® ArrayScan® V<sup>TI</sup>. With increasing concentrations of U0126, a significant decrease in phospho-p44/42 MAPK (Erk1/2) signal (~10-fold), as well as phospho-p90RSK and phospho-CREB (>2-fold), was observed as compared to the TPA-stimulated control.

## Tissue:

Antibody performance is assessed on appropriate tissues.

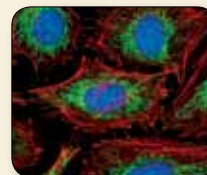


**Pdx1 Antibody #2437:** Confocal IF analysis of normal rat pancreas using #2437 (green, left) or Insulin (C27C9) Rabbit mAb #3014 (green, right). Keratin filaments were labeled with Pan-Keratin (C11) Mouse mAb (Alexa Fluor® 647 Conjugate) #4528 (blue pseudocolor). Red = Propidium Iodide (PI)/RNase Staining Solution #4087 (fluorescent DNA dye).

## Subcellular Localization:

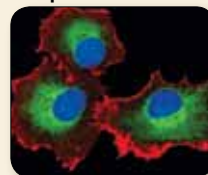
Appropriate cell lines and tissues are used to verify subcellular localization.

### Mitochondria



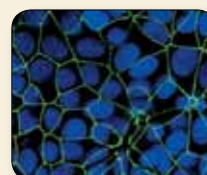
**COX IV (3E11) Rabbit mAb #4850** (green)

### Endoplasmic Reticulum



**ERp72 (D70D12) XP® Rabbit mAb #5033** (green)

### Intercellular Junctions



**ZO-3 (D57G7) XP® Rabbit mAb #3704** (green)

### Mitotic Chromatin



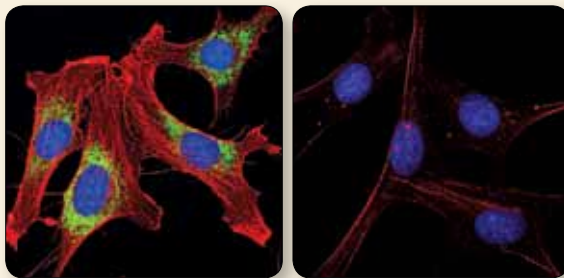
**Phospho-Histone H3 (Ser10) (D2C8) XP® Rabbit mAb #3377** (green)

## Other Validation Steps Include:

- Requirement of threshold signal-to-noise ratio in antibody:isotype comparison and minimum fold-induction for phospho-specific antibodies ensures the greatest possible sensitivity.
- Activation state specificity, target expression, or translocation are examined using ligands or inhibitors to modulate pathway activity.
- Stringent testing ensures lot-to-lot consistency.
- Cells are subjected to siRNA treatment or overexpression of the target protein to verify target specificity.
- Cell lines or tissues with known target expression levels are used to verify specificity.

## Optimization of Staining Protocols

The standard CST immunofluorescence staining protocol includes formaldehyde fixation and detergent permeabilization. Since most antibodies work well with this protocol, two or more antibodies can be multiplexed on the same cells or tissue. However, some antibodies may work better with, or even require, different fixation and/or permeabilization methods. For example, our PDI and  $\beta$ -Actin antibodies benefit from methanol permeabilization (see images right). If an alternative protocol is recommended for a particular antibody, it will be clearly noted under the recommended dilutions section on the product datasheet. Please feel free to contact our immunofluorescence specialists at [IF@cellsignal.com](mailto:IF@cellsignal.com) with any questions regarding treatment, fixation, or staining protocols.

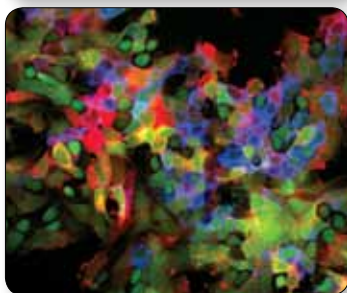
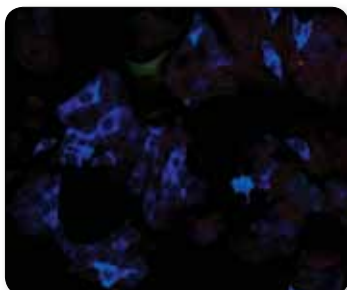


**PDI Antibody #2446 and  $\beta$ -Actin (8H10D10) Mouse mAb #3700:** Confocal IF analysis of NIH/3T3 cells, permeabilized with methanol (left) or 0.3% Triton X-100 (right), using #2446 (green) and #3700 (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

## PathScan<sup>®</sup> Multiplex IF Kits

PathScan<sup>®</sup> Multiplex IF Kits from CST provide a novel multiplex assay to simultaneously assess signaling through key pathway nodes using automated high content platforms (both imaging and laser scanning) or manual immunofluorescence microscopy. The kits contain a cocktail of three high quality primary antibodies, as well as a detection cocktail utilizing the Alexa Fluor<sup>®</sup> series of fluorescent dyes. Antibody and dye pairings have been pre-optimized and each kit contains enough reagents for 100 assays (based on a working volume of 100  $\mu$ l/test).

- Kits allow the analysis of multiple pathway endpoints within a single sample, saving time and reagents.
- Kits are produced and optimized in-house with the highest quality antibodies, providing you with the greatest possible specificity and sensitivity.
- Technical support is provided by our in-house IF group, who developed the products and knows them best, ensuring a timely and accurate response.



**PathScan<sup>®</sup> Signaling Nodes Multiplex IF Kit #8999:** Confocal IF analysis of MCF7 cells, serum-starved (upper) or insulin-treated (lower), using #8999. Red = phospho-Akt (Ser473), green = phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204), and blue pseudocolor = phospho-S6 Ribosomal Protein (Ser235/236).

	Applications	Reactivity
<b>#7851 PathScan<sup>®</sup> Apoptosis and Proliferation Multiplex IF Kit</b> Kit includes primary antibody and detection cocktails to simultaneously detect levels of phospho-Histone H3 (Ser10), cleaved PARP (Asp214), and $\alpha$ -Tubulin	IF-IC	H, Mk
<b>#7967 PathScan<sup>®</sup> EGF Receptor Activation Multiplex IF Kit</b> Kit includes primary antibody and detection cocktails to simultaneously detect levels of phospho-EGF Receptor (Tyr1068), total EGF Receptor, and phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204)	IF-IC, IF-P	H, Mk, (M)
<b>#8999 PathScan<sup>®</sup> Signaling Nodes Multiplex IF Kit</b> Kit includes primary antibody and detection cocktails to simultaneously detect levels of phospho-Akt (Ser473), phospho-S6 Ribosomal Protein (Ser235/236), and phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204)	IF-IC	H, M, R, Mk

PathScan<sup>®</sup> Multiplex IF Kits: Some kit components are provided under an agreement between Life Technologies Corporation and Cell Signaling Technology, Inc., and the manufacture, use, sale or import of antibody conjugate in this product is subject to one or more US patents and corresponding non-US equivalents, owned or controlled by Life Technologies Corporation or its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity), for immunocytochemistry, high content screening (HCS) analysis, or flow cytometry applications. Buyer's use of this product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) resale, whether or not such product or its components are resold for use in research; or for any other commercial purpose is prohibited. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cellular Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.

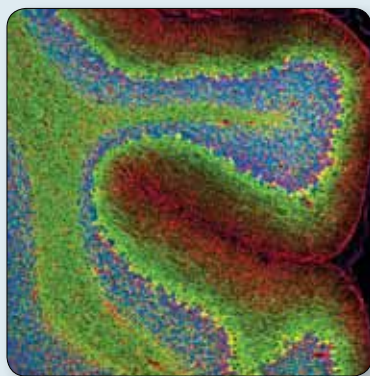
# Alexa Fluor® Conjugates for Immunofluorescence

The superior brightness and photostability of Alexa Fluor® dyes combined with the highest quality antibodies from Cell Signaling Technology results in the brightest signal with the lowest background. All Alexa Fluor conjugates recommended for immunofluorescence (IF) are validated by our in-house IF specialists.

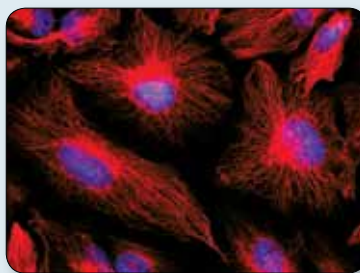
- Technical support provided by our IF specialists translates into a thorough, fast, and accurate response.
- High quality custom conjugations to our off-the-shelf antibodies are available upon request.

Detection Dye	Ex <sub>(max)</sub>	Em <sub>(max)</sub>
Alexa Fluor® 488	495 nm	519 nm
Alexa Fluor® 555	555 nm	565 nm
Alexa Fluor® 594	590 nm	617 nm
Alexa Fluor® 647	650 nm	668 nm

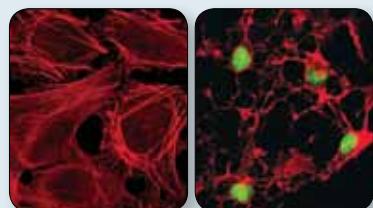
Unconjugated Antibody	Reactivity	488	555	594	647
#4970 β-Actin (13E5) Rabbit mAb	H, M, R, Mk, B, Pg, (C, Dg)	#8844		#9470	#8584
#4691 Akt (pan) (C67E7) Rabbit mAb	H, M, R, Mk, Dm	#5084			#5186
<b>XP</b> #5153 Androgen Receptor (D6F11) XP® Rabbit mAb	H	#7395			#7397
#3195 E-Cadherin (24E10) Rabbit mAb	H, M, (Dg, Pg)	#3199	#4295		
#9661 Cleaved Caspase-3 (Asp175) Antibody	H, M, R, Mk, (B, Dg, Pg)	#9669			
#2677 β-Catenin (L54E2) Mouse mAb (IF Preferred)	H, (M, R, Mk, Pg)	#2849	#5612		#4627
#3570 CD44 (156-3C11) Mouse mAb	H	#3516			
<b>XP</b> #5664 CNPase (D83E10) XP® Rabbit mAb	H, M, R	#5714	#5715		#5716
#4850 COX IV (3E11) Rabbit mAb	H, R, Mk, Z, B, Pg	#4853			#7561
#9198 Phospho-CREB (Ser133) (87G3) Rabbit mAb	H, M, R	#9187			
#2368 DYKDDDDK Tag Antibody (Binds to same epitope as Sigma's Anti-FLAG® M2 Antibody)	All	#5407	#3768	#9696	#3916
<b>XP</b> #4267 EGF Receptor (D38B1) XP® Rabbit mAb	H, M, Mk	#5616	#5108		#5588
#2929 EpCAM (VU1D9) Mouse mAb	H	#5198	#5488	#7319	#5447
#2118 GAPDH (14C10) Rabbit mAb	H, M, R, Mk	#3906	#3964		#3907
#3670 GFAP (GA5) Mouse mAb	H, M, R	#3655	#3656	#8152	#3657
#2624 GST (26H1) Mouse mAb	All	#3368	#3720	#9440	#3445
#2367 HA-Tag (6E2) Mouse mAb	All	#2350			#3444
#2024 Hexokinase I (C35C4) Rabbit mAb	H, M	#3689			#3540
#9718 Phospho-Histone H2A.X (Ser139) (20E3) Rabbit mAb	H, M, R, Mk	#9719	#8228		#9720
<b>XP</b> #3377 Phospho-Histone H3 (Ser10) (D2C8) XP® Rabbit mAb	H, M, R, Mk, Z	#3465	#3475	#8481	#3458
#9701 Phospho-Histone H3 (Ser10) Antibody	H, M, R, Mk, C, Dm, Z, Sc, (X)	#9708			#9716
#9649 Acetyl-Histone H3 (Lys9) (C5B11) Rabbit mAb	H, M, R, Mk, Z, (Sc)	#9683	#5489		#4484
#4545 Pan-Keratin (C11) Mouse mAb	H, R, Mk	#4523	#3478		#4528
#3308 c-Kit (Ab81) Mouse mAb	H	#3310			



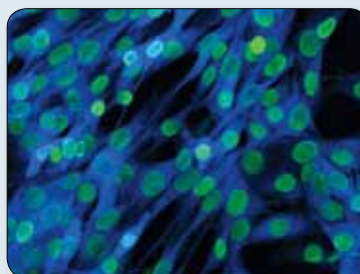
**Neurofilament-L (C28E10) Rabbit mAb (Alexa Fluor® 488 Conjugate) #8024:** Confocal IF analysis of normal rat cerebellum using #8024 (green) and GFAP (GA5) Mouse mAb #3670 (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**Vimentin (D21H3) XP® Rabbit mAb (Alexa Fluor® 555 Conjugate) #9855:** Confocal IF analysis of SNB19 (left) or MCF7 (right) cells using #9855 (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

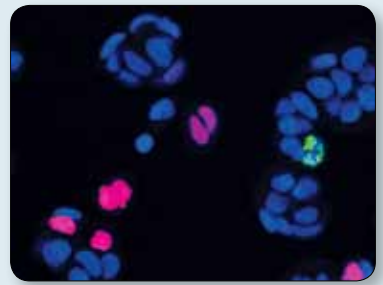


**Cleaved PARP (Asp214) (D64E10) XP® Rabbit mAb (Alexa Fluor® 488 Conjugate) #9148:** Confocal IF analysis of HeLa cells, untreated (left) or treated with Staurosporine #9953 (1 μM, 3 hr; right), using #9148 (green). Actin filaments were labeled with DY-554 phalloidin (red).

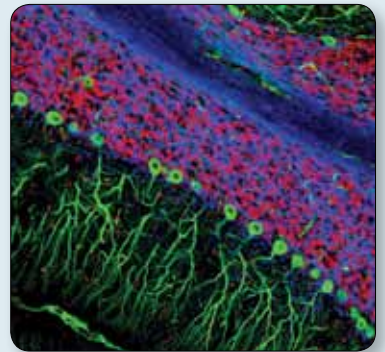


**Phospho-NDRG1 (Thr346) (D98G11) XP® Rabbit mAb (Alexa Fluor® 647 Conjugate) #7497:** Confocal IF analysis of C2C12 cells, insulin-treated (left) or treated with LY294002 #9901 (right), using #7497 (blue pseudocolor) and Lamin A/C (4C11) Mouse mAb #4777 (green).

Unconjugated Antibody		Reactivity	488	555	594	647
	#2276 Myc-Tag (9B11) Mouse mAb	All	#2279	#3756	#9483	#2233
<b>XP</b>	#4903 Nanog (D73G4) XP <sup>®</sup> Rabbit mAb	H, (Mk)				#5448
<b>XP</b>	#5482 Phospho-NDRG1 (Thr346) (D98G11) XP <sup>®</sup> Rabbit mAb	H, M, R, Mk	#6992	#9851		#7497
	#2837 Neurofilament-L (C28E10) Rabbit mAb	H, M, R	#8024	#8039		#8590
	#2840 Oct-4A (C30A3) Rabbit mAb	H, M	#5177	#4439		#5263
	#2947 p21 Waf1/Cip1 (12D1) Rabbit mAb	H, Mk	#5487	#8493		#8587
<b>XP</b>	#4511 Phospho-p38 MAPK (Thr180/Tyr182) (D3F9) XP <sup>®</sup> Rabbit mAb	H, M, R, Mk, Sc, (Hm, C, Z, B, Pg)		#9836		
	#9286 Phospho-p53 (Ser15) (16G8) Mouse mAb	H	#9235	#9481		
	#2527 p53 (7F5) Rabbit mAb	H, Mk	#5429	#5395		
	#2524 p53 (1C12) Mouse mAb	H, M, R, Mk	#2015			#2533
<b>XP</b>	#5625 Cleaved PARP (Asp214) (D64E10) XP <sup>®</sup> Rabbit mAb	H, Mk	#9148	#6894		
	#3501 PDI (C81H6) Rabbit mAb	H, M, R, Mk	#5051	#8448		#8463
<b>XP</b>	#4858 Phospho-S6 Ribosomal Protein (Ser235/236) (D57.2.2E) XP <sup>®</sup> Rabbit mAb	H, M, R, Mk, Sc, (C)	#4803	#3985	#9865	#4851
	#4856 Phospho-S6 Ribosomal Protein (Ser235/236) (2F9) Rabbit mAb	H, M, R	#4854			
<b>XP</b>	#5364 Phospho-S6 Ribosomal Protein (Ser240/244) (D68F8) XP <sup>®</sup> Rabbit mAb	H, M, R, Mk	#5018			
	#2317 S6 Ribosomal Protein (54D2) Mouse mAb	H, M, R, Mk, Dm	#5317	#6989		#5548
	#4755 SSEA4 (MC813) Mouse mAb	H		#5835		
<b>XP</b>	#3579 Sox2 (D6D9) XP <sup>®</sup> Rabbit mAb	H, (Mk, B, Dg)	#5049	#5179		#5067
	#9167 Phospho-Stat1 (Tyr701) (58D6) Rabbit mAb	H, M		#8183		
	#2808 Survivin (71G4B7) Rabbit mAb	H, M, R	#2810	#4580		
	#2125 $\alpha$ -Tubulin (11H10) Rabbit mAb	H, M, R, Mk, Dm, B, (Dg)	#5063	#5059		#5046
	#2128 $\beta$ -Tubulin (9F3) Rabbit mAb	H, M, R, Mk, Z, B, (C)	#3623	#2116	#7634	#3624
	#9411 Phospho-Tyrosine Mouse mAb (P-Tyr-100)	All				#9415
<b>XP</b>	#5741 Vimentin (D21H3) XP <sup>®</sup> Rabbit mAb	H, M, R, Mk	#9854	#9855		#9856



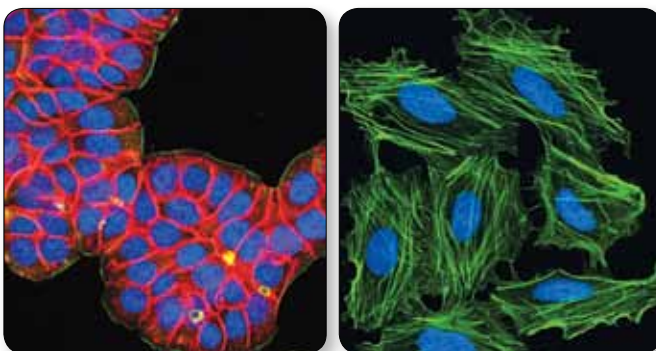
**p21 Waf1/Cip1 (12D1) Rabbit mAb (Alexa Fluor<sup>®</sup> 555 Conjugate) #8493:** Confocal IF analysis of MCF7 cells using #8493 (red) and Phospho-Histone H3 (Ser10) (D2C8) XP<sup>®</sup> Rabbit mAb (Alexa Fluor<sup>®</sup> 488 Conjugate) #3465 (green). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).



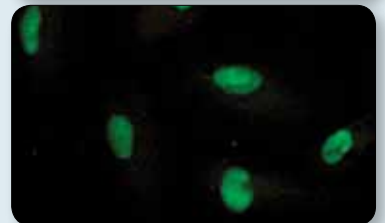
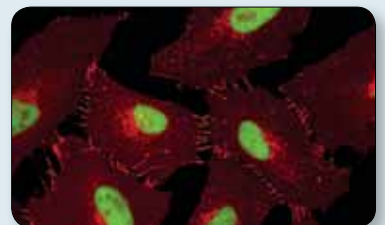
**CNPase (D83E10) XP<sup>®</sup> Rabbit mAb (Alexa Fluor<sup>®</sup> 647 Conjugate) #5716:** Confocal IF analysis of rat cerebellum using #5716 (blue pseudocolor) and  $\beta$ 3-Tubulin (TU-20) Mouse mAb #4466 (green). Red = Propidium Iodide (PI)/RNase Staining Solution #4087 (fluorescent DNA dye).

## Alexa Fluor<sup>®</sup> 594

Red-fluorescent Alexa Fluor<sup>®</sup> 594 is useful for multiplex labeling in combination with green-fluorescent dyes. Alexa Fluor<sup>®</sup> 594 produces a brighter signal than similar red dyes and has a higher degree of labeling (DOL).



**EpCAM (VU1D9) Mouse mAb (Alexa Fluor<sup>®</sup> 594 Conjugate) #7319:** Confocal IF analysis of HT-29 (left) and HeLa (right) cells using #7319 (red). Actin filaments were labeled with Alexa Fluor<sup>®</sup> 488 phalloidin (green). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).



**$\beta$ -Catenin (L54E2) Mouse mAb (Alexa Fluor<sup>®</sup> 555 Conjugate) #5612:** Confocal IF analysis of HeLa (upper) and NCI-H28 (lower) cells using #5612 (red) and a Histone H3 antibody (green).

# Complementary Reagents and Controls for Immunofluorescence

Cell Signaling Technology (CST) offers a wide selection of secondary antibodies, DNA dyes, activators and inhibitors, as well as experimental controls. These same reagents are also used in-house for antibody validation in immunofluorescent analysis and therefore work optimally with our primary antibodies. Technical support is provided by the scientists who work regularly with the reagents and know them best.

## Conjugated Secondary Antibodies

### Alexa Fluor®

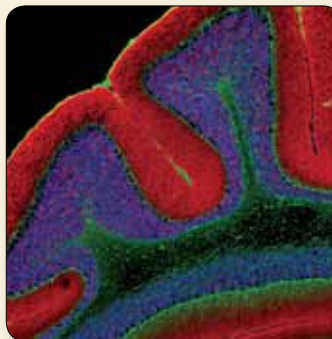
- #4408 Anti-mouse IgG (H+L), F(ab')<sub>2</sub> Fragment (Alexa Fluor® 488 Conjugate)
- #4409 Anti-mouse IgG (H+L), F(ab')<sub>2</sub> Fragment (Alexa Fluor® 555 Conjugate)
- #4410 Anti-mouse IgG (H+L), F(ab')<sub>2</sub> Fragment (Alexa Fluor® 647 Conjugate)
- #4412 Anti-rabbit IgG (H+L), F(ab')<sub>2</sub> Fragment (Alexa Fluor® 488 Conjugate)
- #4413 Anti-rabbit IgG (H+L), F(ab')<sub>2</sub> Fragment (Alexa Fluor® 555 Conjugate)
- #4414 Anti-rabbit IgG (H+L), F(ab')<sub>2</sub> Fragment (Alexa Fluor® 647 Conjugate)
- #4416 Anti-rat IgG (H+L), (Alexa Fluor® 488 Conjugate)
- #4417 Anti-rat IgG (H+L), (Alexa Fluor® 555 Conjugate)
- #4418 Anti-rat IgG (H+L), (Alexa Fluor® 647 Conjugate)

### DyLight®

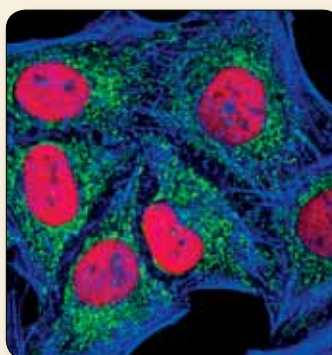
- #5470 Anti-mouse IgG (H+L) (DyLight® 680 Conjugate)
- #5257 Anti-mouse IgG (H+L) (DyLight® 800 Conjugate)
- #5366 Anti-rabbit IgG (H+L) (DyLight® 680 Conjugate)
- #5151 Anti-rabbit IgG (H+L) (DyLight® 800 Conjugate)

## Excitation/Emission Table

Detection Dye	Ex <sub>(max)</sub> (nm)	Em <sub>(max)</sub> (nm)
Alexa Fluor® 488	495	519
Alexa Fluor® 555	555	565
Alexa Fluor® 647	650	668
DyLight® 680	692	712
DyLight® 800	777	794



**Anti-rabbit IgG (H+L), F(ab')<sub>2</sub> Fragment (Alexa Fluor® 555 Conjugate) #4413 and Anti-mouse IgG (H+L), F(ab')<sub>2</sub> Fragment (Alexa Fluor® 488 Conjugate) #4408:** Confocal IF analysis of mouse cerebellum using  $\alpha$ -Synuclein Antibody (IF Preferred) #2628 detected with #4413 (red) and Neurofilament-L (DA2) Mouse mAb #2835 detected with #4408 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



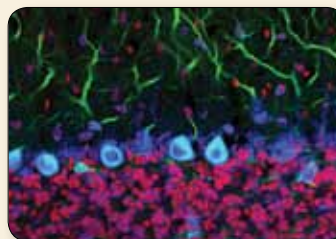
**Anti-rat IgG (H+L) (Alexa Fluor® 555 Conjugate) #4417 and Anti-rabbit IgG (H+L), F(ab')<sub>2</sub> Fragment (Alexa Fluor® 488 Conjugate) #4412:** Confocal IF analysis of HeLa cells using RPA32 (4E4) Rat mAb #2208 detected with #4417 (red) and COX IV (3E11) Rabbit mAb #4850 detected with #4412 (green). Actin filaments were labeled with Alexa Fluor® 647 phalloidin (blue pseudocolor).

## Fluorescent DNA Dyes

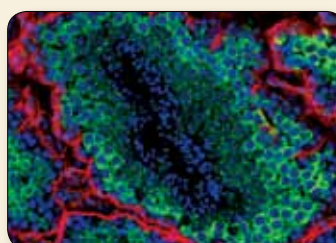
	Applications	Reactivity
#4083 DAPI	IF-F, IF-IC, IF-P	All
#4084 DRAQ5®	IF-F, IF-IC, IF-P, F	All
#4082 Hoechst 33342	IF-F, IF-IC, IF-P	All
#4087 Propidium iodide (PI)/RNase Staining Solution	IF-F, IF-IC, F, HCA	(null)

### Product References:

#4084 DRAQ5®: Galitovskiy, V. et al. (2011) Cytokine-induced alterations of  $\alpha 7$  nicotinic receptor in colonic CD4 T cells mediate dichotomous response to nicotine in murine models of Th1/Th17- versus Th2-mediated colitis. *J. Immunol.* 187, 2677-2687.



**Propidium iodide (PI)/RNase Staining Solution #4087:** Confocal IF analysis of rat cerebellum using S6 Ribosomal Protein (54D2) Mouse mAb (Alexa Fluor® 647 Conjugate) #5548 (blue pseudocolor) and  $\beta 3$ -Tubulin (D71 G9) XP® Rabbit mAb #5568 (green). Red = #4087.

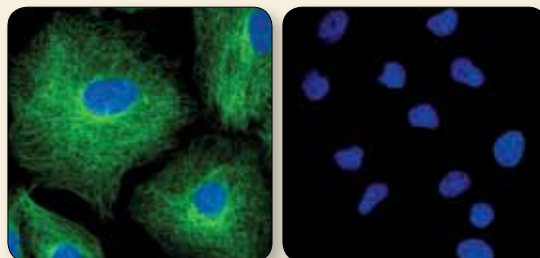


**DRAQ5® #4084:** Confocal IF analysis of mouse testis using Miwi (G82) Antibody #2079 (green) and Pan-Keratin (C11) Mouse mAb #4545 (red). Blue pseudocolor = #4084.



## Isotype Controls

		Applications
	#5415 Mouse (G3A1) mAb IgG1 Isotype Control	IP, IHC-P, IF-F, IF-IC, F, ChIP
<b>New</b>	#9641 Mouse (G3A1) mAb IgG1 Isotype Control (Alexa Fluor® 555 Conjugate)	IF-IC
<b>XP</b>	#3900 Rabbit (DA1E) mAb IgG XP® Isotype Control	IHC-P, IF-IC, F, ChIP
<b>New</b> <b>XP</b>	#3969 Rabbit (DA1E) mAb IgG XP® Isotype Control (Alexa Fluor® 555 Conjugate)	IF-IC



**Rabbit (DA1E) mAb IgG XP® Isotype Control #3900:** Confocal IF analysis of A549 cells using  $\beta$ -Tubulin (9F3) Rabbit mAb #2128 (green, left) compared to concentration matched #3900 (green, right). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

## SignalSilence® siRNA



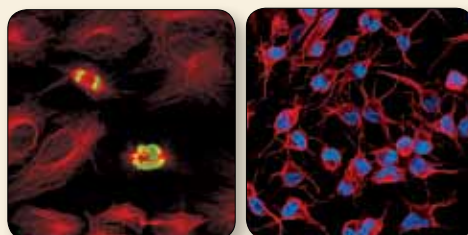
SignalSilence® siRNA duplexes from CST allow the researcher to specifically inhibit protein expression in human or mouse systems. These products utilize RNA interference, a method by which gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. Often two equally potent siRNAs are available for each target (siRNA I and II). A fluorescein-labeled non-targeted siRNA control allows the user to monitor transfection efficiency, and an unconjugated control siRNA can be used to control for specificity.

#6201	SignalSilence® Control siRNA (Fluorescein Conjugate)
#6568	SignalSilence® Control siRNA (Unconjugated)

- siRNA duplexes are designed, produced, and purified in-house – siRNA products are held to the same stringent quality control standards as CST™ antibody products.
- siRNA duplexes are used in-house for antibody validation – effective knockdown is assessed at the protein level.
- Technical support is provided by the same scientists who produce and validate the products – you have access to our knowledgeable technical support scientists to discuss transfection methods or any other questions.

## Activators and Inhibitors

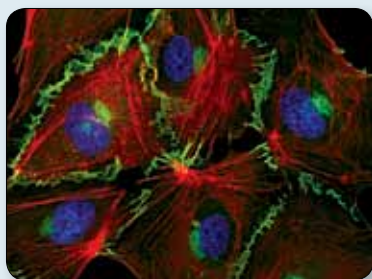
#9944	AICAR	#9996	Oligomycin
#9841	Bisindolylmaleimide I, Hydrochloride	#9807	Paclitaxel
#9972	Brefeldin A	#9900	PD98059 (MEK1 Inhibitor)
#9902	Calyculin A (Serine/Threonine Phosphatase Inhibitor)	#9904	Rapamycin (FRAP/mTOR Inhibitor)
#9973	Cyclosporin A	#9885	Roscovitine
#9886	Docetaxel	#5633	SB203580 (p38 Inhibitor)
#9974	FK-506	#9953	Staurosporine
#3828	Forskolin	#4174	TPA (12-O-Tetradecanoylphorbol-13-Acetate)
#9843	Geldanamycin	#9950	Trichostatin A (TSA)
#9844	H-89, Dihydrochloride	#9842	Tyrphostin AG 1478
#9995	Ionomycin, Calcium Salt	#9903	U0126 (MEK1/2 Inhibitor)
#9901	LY294002 (PI3 Kinase Inhibitor)	#9951	Wortmannin



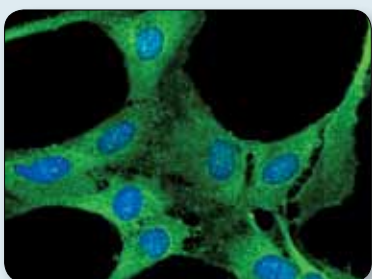
**Staurosporine #9953:** Confocal IF analysis of HeLa cells, untreated (left) or treated with #9953 (right), using the PathScan® Apoptosis and Proliferation Multiplex IF Kit #7851. Red =  $\alpha$ -tubulin, green = phospho-Histone H3 (Ser10), and blue = cleaved PARP (Asp214).

# Organelle Markers

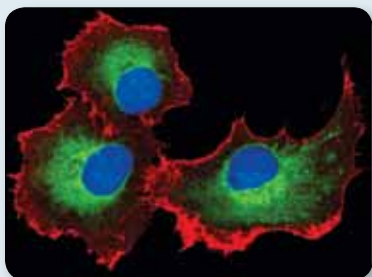
(Organelle marker expression should always be confirmed by the user in the model system utilized.)



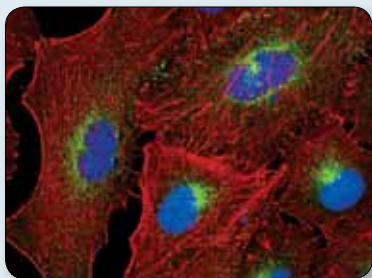
**VE-Cadherin (D87F2) XP® Rabbit mAb #2500:** Confocal IF analysis of HUVE cells using #2500 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**Ribosomal Protein S3 (D50G7) XP® Rabbit mAb #9538:** Confocal IF analysis of C6 cells using #9538 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**ERp72 (D70D12) XP® Rabbit mAb #5033:** Confocal IF analysis of PANC-1 cells using #5033 (green) and β-Actin (8H10D10) Mouse mAb #3700 (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**Rab11 (D4F5) XP® Rabbit mAb #5589:** Confocal IF analysis of A549 cells using #5589 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

## Intercellular Junctions

	Applications	Reactivity
#3195 E-Cadherin (24E10) Rabbit mAb	<b>AF</b> W, IHC-P, IHC-F, IF-IC, F	H, M, (Dg, Pg)
#2189 P-Cadherin (C13F9) Rabbit mAb	W, IF-IC	H, (Mk)
<b>XP</b> #2500 VE-Cadherin (D87F2) XP® Rabbit mAb	W, IP, IF-IC, F	H, Dm, B, Pg, (Mk)
#3512 Connexin 43 Antibody	W, IHC-P, IHC-F, IF-F, IF-IC	H, M, R, Mk, Z, (Dg, Pg)
#2847 ZO-2 Antibody	W, IF-IC	H, M, R, Mk, B, Dg
<b>XP</b> #3704 ZO-3 (D57G7) XP® Rabbit mAb	W, IF-IC	H

## Cytoskeleton

#4970 β-Actin (13E5) Rabbit mAb	W, IHC-P, IHC-F, IF-IC, F	H, M, R, Mk, B, Pg, (C, Dg)
<b>New</b> #8456 Pan-Actin (D18C11) Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk
<b>XP</b> #5332 Desmin (D93F5) XP® Rabbit mAb	W, IF-F, IF-IC	H, M, R, (Mk)
#4545 Pan-Keratin (C11) Mouse mAb	<b>AF</b> W, IHC-P, IF-IC, IF-P, F	H, R, Mk
#4898 Keratin 7 (R458) Antibody	W, IF-IC	H
<b>XP</b> #4543 Keratin 17 (D73C7) XP® Rabbit mAb	W, IF-IC, F	H, M, R, Mk, (Dg)
#2125 α-Tubulin (11H10) Rabbit mAb	<b>AF</b> W, IHC-P, IF-IC, F	H, M, R, Mk, Dm, B, (Dg)
#2128 β-Tubulin (9F3) Rabbit mAb	<b>AF</b> W, IHC-P, IF-IC, F	H, M, R, Mk, Z, B, (C)
<b>XP</b> #5741 Vimentin (D21H3) XP® Rabbit mAb	<b>AF</b> W, IHC-P, IF-IC, F	H, M, R, Mk

## Cytoplasm

<b>New</b> #8727 MEK1/2 (D1A5) Rabbit mAb	W, IF-IC, F	H, M, R, Mk, (Hm, Dm, X, Z, B, Dg, Pg, Ce)
-------------------------------------------	-------------	--------------------------------------------

## Ribosomes

<b>XP</b> #9538 Ribosomal Protein S3 (D50G7) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
#2415 Ribosomal Protein L7a (E109) Antibody	W, IF-IC	H, M, R, Mk
#2217 S6 Ribosomal Protein (5G10) Rabbit mAb	W, IHC-P, IF-F, IF-IC	H, M, R, Mk

## Endoplasmic Reticulum

#2679 Calnexin (C5C9) Rabbit mAb	W, IHC-P, IF-IC	H, Mk
<b>XP</b> #5033 ERp72 (D70D12) XP® Rabbit mAb	W, IF-IC, F	H, M, R, Mk
#3501 PDI (C81H6) Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk

## Golgi

#2869 Syntaxin 6 (C34B2) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
#6960 RCAS1 Antibody	W, IP, IF-IC, F	H, M, R, Mk

## Mitochondria

<b>XP</b> #5318 AIF (D39D2) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, (B, Dg)
#4850 COX IV (3E11) Rabbit mAb	<b>AF</b> W, IP, IHC-P, IHC-F, IF-IC, F	H, R, Mk, Z, B, Pg
#2024 Hexokinase I (C35C4) Rabbit mAb	W, IP, IHC-P, IF-IC	H, M

## Endosomes

<b>New</b> #8522 Caveolin-2 (D4A6) XP® Rabbit mAb	W, IP, IF-IC	H, Mk
<b>XP</b> #3267 Caveolin-1 (D46G3) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R, Hm, Mk, B, Dg
<b>XP</b> #4796 Clathrin Heavy Chain (D3C6) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
#3288 EEA1 (C45B10) Rabbit mAb	W, IP, IF-IC	H, M, R
#3547 Rab5 (C8B1) Rabbit mAb	W, IF-IC	H, M, R, Mk
<b>XP</b> #9367 Rab7 (D95F2) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
<b>XP</b> #5118 Rab9 (D52G8) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
<b>XP</b> #5589 Rab11 (D4F5) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, (Hm)

## Autophagosomes

	Applications	Reactivity
#2010 Atg12 Antibody (Human Specific)	W, IP, IF-IC	H
#2011 Atg12 Antibody (Mouse Specific)	W, IP, IF-IC	M
<b>XP</b> #4599 LC3A (D50G8) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R, (Mk, Dg)
<b>XP</b> #3868 LC3B (D11) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R, (Mk, B, Pg)

## Nucleus

#2196 ESET (C1C2) Rabbit mAb	W, IP, IF-IC	H, Mk
#2718 Histone H2A.Z Antibody	W, IP, IF-IC	H, M, R, Mk, Z, (C, X, B)
<b>XP</b> #4499 Histone H3 (D1H2) XP® Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk, (Hm, C, Dm, X, Z, B)
#2184 LSD1 (C69G12) Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC	H, M, R, Mk

## Nuclear Envelope

<b>XP</b> #5019 ASH2L (D93F6) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, (Dm)
#4777 Lamin A/C (4C11) Mouse mAb	W, IP, IHC-P, IF-F, IF-IC, F	H, M, R, Mk
#2598 NUP98 (C39A3) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk

## Nucleolus

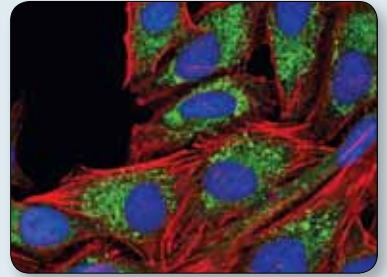
<b>XP</b> #3833 eIF6 (D16E9) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
#2639 Fibrillarin (C13C3) Rabbit mAb	W, IF-IC	H, M, R, Mk

## Centromeres

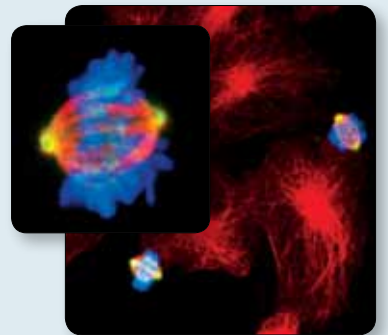
#2186 CENP-A Antibody	W, IF-IC	H
#2048 CENP-A (C51A7) Rabbit mAb (Mouse Specific; IF Preferred)	W, IF-IC	M

## Mitosis

<b>XP</b> #2914 Phospho-Aurora A (Thr288)/Aurora B (Thr232)/Aurora C (Thr198) (D13A11) XP® Rabbit mAb	W, IF-IC, F	H, M, R
#4718 Aurora A/AIK (1G4) Rabbit mAb	W, IP, IF-IC	H, Mk
#2187 Phospho-CENP-A (Ser7) Antibody	W, IP, IF-IC	H, (Mk)
<b>XP</b> #3377 Phospho-Histone H3 (Ser10) (D2C8) XP® Rabbit mAb	<b>AF</b> W, IF-IC, F	H, M, R, Mk, Z



**LC3A (D50G8) XP® Rabbit mAb #4599:** Confocal IF analysis of chloroquine-treated HeLa cells using #4599 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**Phospho-Aurora A (Thr288)/Aurora B (Thr232)/Aurora C (Thr198) (D13A11) XP® Rabbit mAb #2914:** Confocal IF analysis of HT-1080 cells using #2914 (green),  $\beta$ -Tubulin (9F3) Rabbit mAb (Alexa Fluor® 555 Conjugate) #2116 (red), and Phospho-Histone H3 (Ser10) (6G3) Mouse mAb #9706 (blue pseudocolor).

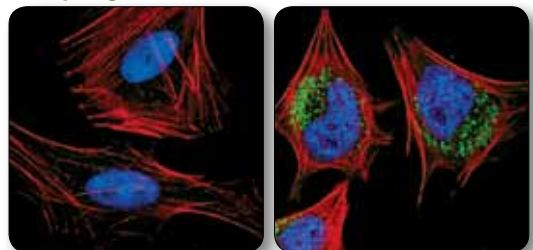
# Cellular Localization IF Antibody Sampler Kit #4753

This kit offers an economical alternative to purchasing individual organelle marker antibodies. These antibodies may also be used as western blot controls for fractionated cell lysates.

### Kit Components

- ::  $\beta$ -Tubulin (9F3) Rabbit mAb #2128
- :: COX IV (3E11) Rabbit mAb #4850
- :: NUP98 (C39A3) Rabbit mAb #2598
- :: CENP-A Antibody #2186
- :: Fibrillarin (C13C3) Rabbit mAb #2639
- :: LC3B (D11) XP® Rabbit mAb #3868
- :: Rab5 (C8B1) Rabbit mAb #3547
- :: Calnexin (C5C9) Rabbit mAb #2679
- :: Histone H3 (D1H2) XP® Rabbit mAb #4499

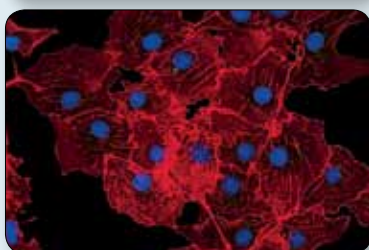
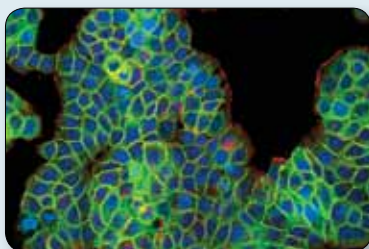
### Autophagosomes



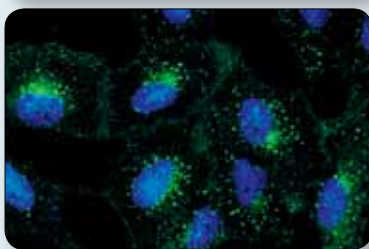
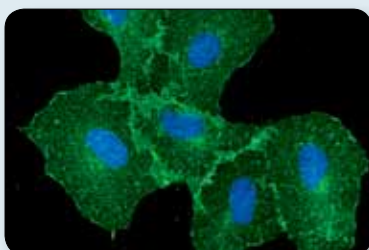
**LC3B (D11) XP® Rabbit mAb #3868:** Confocal IF analysis of HeLa cells, untreated (left) or chloroquine-treated (right), using #3868 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

**Please visit our website for more details about this kit.**

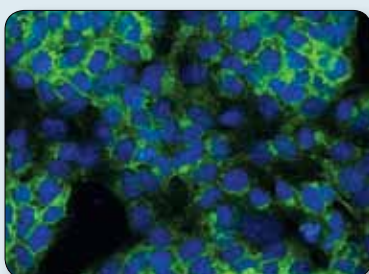
# Tyrosine Kinases



**Met (D1C2) XP® Rabbit mAb #8198:** Confocal IF analysis of HT-29 (upper) and T-47D (lower) cells using #8198 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**EGF Receptor (D38B1) XP® Rabbit mAb #4267:** Confocal IF analysis of A549 cells, untreated (upper) or treated with Human Epidermal Growth Factor (hEGF) #8916 (lower), using #4267 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**FGF Receptor 4 (D3B12) XP® Rabbit mAb #8562:** Confocal IF analysis of Hep G2 cells using #8562 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

	Applications	Reactivity
#2862 c-Abl Antibody	W, IP, IF-IC	H, M, R
#3902 Bcr Antibody	W, IF-IC, F	H, M, R, Pg
<b>XP®</b> #5583 DDR1 (D1G6) XP® Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk
<b>New XP®</b> #6997 EphA2 (D4A2) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
#2237 Phospho-EGF Receptor (Tyr1045) Antibody	W, IF-IC	H, R
<b>XP®</b> #3777 Phospho-EGF Receptor (Tyr1068) (D7A5) XP® Rabbit mAb	W, IHC-P, IF-IC, F	H, M, R, Mk
<b>XP®</b> #2085 EGF Receptor (E746-A750del Specific) (6B6) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, IF-P, F	H
#3197 EGF Receptor (L858R Mutant Specific) (43B2) Rabbit mAb	W, IP, IHC-P, IF-IC, IF-P, F	H
<b>XP®</b> #4267 EGF Receptor (D38B1) XP® Rabbit mAb	<b>AF</b> W, IP, IHC-P, IF-IC, F	H, M, Mk
#3284 Phospho-FAK (Tyr925) Antibody	W, IP, IF-IC	H, (M, R, C)
<b>New XP®</b> #4574 FGF Receptor 3 (C51F2) Rabbit mAb	W, IP, IHC-P, IF-IC	H
<b>XP®</b> #8562 FGF Receptor 4 (D3B12) XP® Rabbit mAb	W, IP, IF-IC	H
#2165 HER2/ErbB2 (29D8) Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC, F	H, (M, R)
<b>XP®</b> #3074 c-Kit (D13A2) XP® Rabbit mAb	W, IP, IF-IC	H, M
#3308 c-Kit (Ab81) Mouse mAb	<b>AF</b> W, IP, IF-IC, F	H
#2787 Lck (73A5) Rabbit mAb	W, IF-IC, F	H
<b>XP®</b> #4319 Mer (D21F1) XP® Rabbit mAb	W, IP, IF-IC	H
<b>New XP®</b> #3077 Phospho-Met (Tyr1234/1235) (D26) XP® Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC, F	H, M, R
<b>New XP®</b> #8198 Met (D1C2) XP® Rabbit mAb	W, IHC-P, IHC-F, IF-IC, F	H
<b>XP®</b> #3174 PDGF Receptor α (D1E1E) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M
<b>XP®</b> #5241 PDGF Receptor α (D13C6) XP® Rabbit mAb	W, IHC-P, IF-IC, F	H
#3169 PDGF Receptor β (28E1) Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC	H, M, R
<b>New</b> #8131 Phospho-PZR (Tyr241) (D6F9) Rabbit mAb	W, IP, IF-IC, F	H, M, R, B
<b>New</b> #8088 Phospho-PZR (Tyr263) (D6A5) Rabbit mAb	W, IP, IF-IC, F	H, M, R, B
<b>New XP®</b> #9893 PZR (D17B10) XP® Rabbit mAb	W, IP, IF-IC	H
#3223 Ret (C31B4) Rabbit mAb	W, IP, IF-IC, F	H
#2109 Src (36D10) Rabbit mAb	W, IP, IHC-P, IHC-F, IF-F, IF-IC, F	H, M, R, Hm, Mk, B, Pg, (C)
#2108 Src Antibody	W, IP, IF-IC, F	H, M, R, Mk, (C)
#2478 Phospho-VEGF Receptor 2 (Tyr1175) (19A10) Rabbit mAb	W, IHC-P, IF-IC	H, M
#2479 VEGF Receptor 2 (55B11) Rabbit mAb	W, IP, IHC-P, IF-F, IF-IC	H, M
#2701 Phospho-Zap-70 (Tyr319)/Syk (Tyr352) Antibody	W, IP, IF-IC, F	H, M
<b>XP®</b> #3165 Zap-70 (D1C10E) XP® Rabbit mAb	W, IP, IF-F, F	H, M

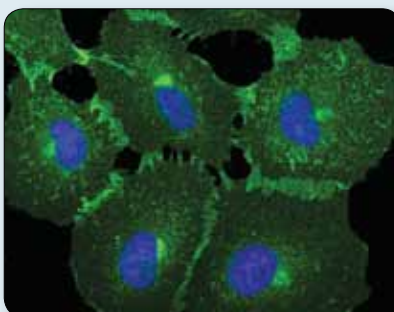
## Product References:

**#2085 EGF Receptor (E746-A750del Specific) (6B6) XP® Rabbit mAb:** Yu, J. et al. (2009) Mutation-specific antibodies for the detection of EGFR mutations in non-small-cell lung cancer. *Clin. Cancer Res.* 15, 3023-3028.

**#3197 EGF Receptor (L858R Mutant Specific) (43B2) Rabbit mAb:** Yu, J. et al. (2009) Mutation-specific antibodies for the detection of EGFR mutations in non-small-cell lung cancer. *Clin. Cancer Res.* 15, 3023-3028.

**#2478 Phospho-VEGF Receptor 2 (Tyr1175) (19A10) Rabbit mAb:** Kappas, N.C. et al. (2008) The VEGF receptor Flt-1 spatially modulates Flk-1 signaling and blood vessel branching. *J. Cell Biol.* 181, 847-858.

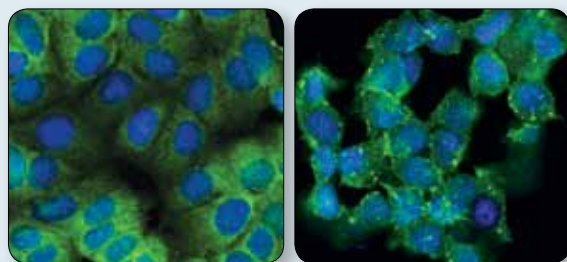
**#2479 VEGF Receptor 2 (55B11) Rabbit mAb:** Antonescu, C.R. et al. (2009) KDR activating mutations in human angiosarcomas are sensitive to specific kinase inhibitors. *Cancer Res.* 15, 7175-7179.



**EphA2 (D4A2) XP® Rabbit mAb #6997:** Confocal IF analysis of A549 cells using #6997 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

# MAP Kinase Signaling

	Applications	Reactivity		Applications	Reactivity
#9221 Phospho-ATF-2 (Thr71) Antibody	W, IP, IHC-P, IHC-F, IF-IC, F	H, M, R, Mk	#4631 Phospho-p38 MAPK (Thr180/Tyr182) (12F8) Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk, Dm, (Hm, Mi, Z)
#5122 FAM129B Antibody	W, IP, IF-IC, F	H, Mk	#9211 Phospho-p38 MAPK (Thr180/Tyr182) Antibody	W, IP, IF-IC, F	H, M, R, Mk, Dm, Pg, Sc, (Hm, Z, B)
#2251 FosB (5G4) Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R	#9216 Phospho-p38 MAPK (Thr180/Tyr182) (28B10) Mouse mAb	W, IP, IF-IC, F	H, M, R, Mk, Sc, (Z)
#2263 FosB Antibody	W, IP, IF-IC	H, M, R	<b>New XP</b> #8690 p38 MAPK (D13E1) XP® Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk, Hm, Pg
<b>XP</b> #5348 Phospho-c-Fos (Ser32) (D82C12) XP® Rabbit mAb	W, IP, IF-IC, F	H, M, R, (Hm, Mk, B, Pg)	#9212 p38 MAPK Antibody	W, IHC-P, IF-IC, F	H, M, R, Mk, (C)
#2250 c-Fos (9F6) Rabbit mAb	W, IF-IC, F	H, M, R, (Hm, B, Pg)	#9228 p38α MAPK (L53F8) Mouse mAb	W, IF-IC, F	H, M, R, Mk, Sc
<b>New XP</b> #5519 JIP4/SPAG9 (D72F4) XP® Rabbit mAb	W, IP, IF-IC, F	H, M, R, Mk	<b>XP</b> #4370 Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R, Hm, Mk, Mi, Dm, Z, B, Dg, Pg, Sc, (Ce)
#9261 Phospho-c-Jun (Ser63) II Antibody	W, IP, IF-IC, F	H, M, R, Mk, Pg	#4377 Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (197G2) Rabbit mAb	W, IF-IC, F	H, M, R, Mk, Mi, Dm, Z, Pg
<b>XP</b> #3270 Phospho-c-Jun (Ser73) (D47G9) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R, Mk	#9101 Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) Antibody	W, IP, IF-IC, F	H, M, R, Hm, Mk, Mi, Dm, Z, B, Pg, Ce, (C)
#9164 Phospho-c-Jun (Ser73) Antibody	W, IF-IC	H, M, R, Mk	#4695 p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R, Hm, Mk, Mi, Dm, Z, B, Dg, Pg, Ce, (C)
#2994 Phospho-c-Jun (Ser243) Antibody	W, IF-IC	H, M, R, Mk	#9102 p44/42 MAPK (Erk1/2) Antibody	W, IP, IHC-P, IF-IC, F	H, M, R, Hm, Mk, Mi, Z, B, Pg, Sc
#9165 c-Jun (60A8) Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC	H, M, R, Mk	#4696 p44/42 MAPK (Erk1/2) (L34F12) Mouse mAb	W, IHC-P, IF-IC, F	H, M, R, Mk, Mi, Z, Pg
#3007 Phospho-MAPKAPK-2 (Thr334) (27B7) Rabbit mAb	W, IHC-P, IF-IC, F	H, M, R, Mk	#9346 Phospho-p90RSK (Thr573) Antibody	W, IF-IC	H, M, R, (Hm, C, X, Z)
<b>XP</b> #5030 MEF2C (D80C1) XP® Rabbit mAb	W, IP, IF-IC	H, M	#9355 RSK1/RSK2/RSK3 (32D7) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
#9127 Phospho-MEK1 (Thr286) Antibody	W, IP, IF-IC, F	H, R, Mk, (M)	<b>New XP</b> #5528 RSK2 (D21B2) XP® Rabbit mAb	W, IF-IC, F	H, M, R, Mk, B, Pg, (Dg)
<b>New</b> #8727 MEK1/2 (D1A5) Rabbit mAb	W, IF-IC, F	H, M, R, Mk, (Hm, Dm, X, Z, B, Dg, Pg, Ce)	#9255 Phospho-SAPK/JNK (Thr183/Tyr185) (G9) Mouse mAb	W, IP, IF-IC, F	H, M, R, Hm, Sc
#4694 MEK1/2 (L38C12) Mouse mAb	W, IHC-P, IF-IC, F	H, M, R, Mk	#2281 SPAK Antibody	W, IF-F	H, M, R, Mk
<b>XP</b> #3679 MSK2 (D41A4) XP® Rabbit mAb	W, IP, IF-IC	H	#3225 TAB1 Antibody	W, IF-IC, F	H, M, R, Mk
#3729 OSR1 Antibody	W, IF-IC, F	H, Mk, B			
<b>XP</b> #4511 Phospho-p38 MAPK (Thr180/Tyr182) (D3F9) XP® Rabbit mAb <b>AF</b>	W, IP, IHC-P, IF-IC, F	H, M, R, Mk, Sc, (Hm, C, Z, B, Pg)			
#9215 Phospho-p38 MAPK (Thr180/Tyr182) (3D7) Rabbit mAb	W, IF-IC, F	H, M, R, Mk, Dm, Pg, Sc, (Hm, Z, B)			

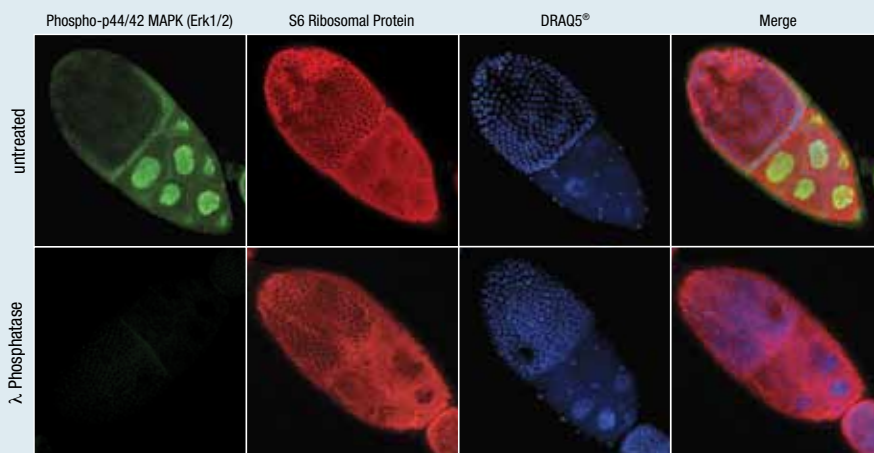


## RSK2 (D21B2) XP® Rabbit mAb

#5528: Confocal IF analysis of MCF7 cells, untreated (left) or treated with sodium arsenite (500 μM, 1 hr; right) using #5528 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye). Localization of RSK2 to stress granules in arsenite-treated cells is similar to that observed by Eisinger-Mathason et al. (2008) *Mol. Cell* 1, 722-736.

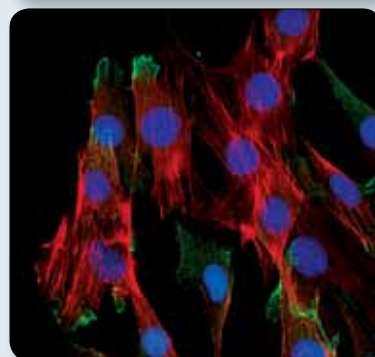
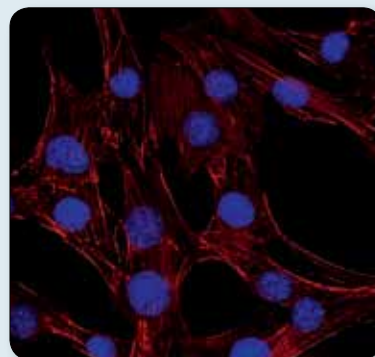
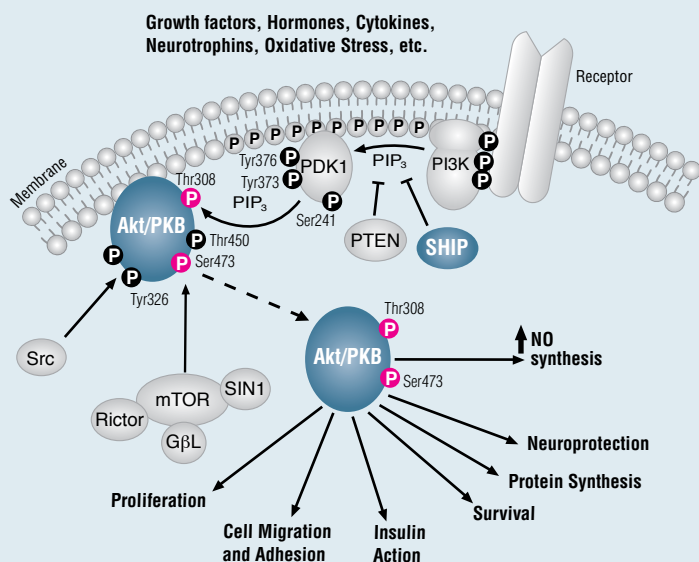
## Product References:

- #2250 c-Fos (9F6) Rabbit mAb: Le, H.Y. et al. (2008) Eena promotes myeloid proliferation through stimulating ERK1/2 phosphorylation in zebrafish. *J. Biol. Chem.* 283, 17652-17661.
- #4511 Phospho-p38 MAPK (Thr180/Tyr182) (D3F9) XP® Rabbit mAb: Bruchas, M.R. et al. (2011) Selective p38α MAPK deletion in serotonergic neurons produces stress resilience in models of depression and addiction. *Neuron* 71, 498-511.
- #9211 Phospho-p38 MAPK (Thr180/Tyr182) Antibody: Matsumoto, M. et al. (2004) Essential role of p38 mitogen-activated protein kinase in cathepsin K gene expression during osteoclastogenesis through association of NFATc1 and PU.1. *J. Biol. Chem.* 279, 45969-45979.
- #9212 p38 MAPK Antibody: Matsumoto, M. et al. (2004) Essential role of p38 mitogen-activated protein kinase in cathepsin K gene expression during osteoclastogenesis through association of NFATc1 and PU.1. *J. Biol. Chem.* 279, 45969-45979.
- #4370 Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb: Kippenberger, S. et al. (2010) Ligation of beta4 integrins activates PKB/Akt and ERK1/2 by distinct pathways—relevance of the keratin filament. *Biochim. Biophys. Acta* 1803, 940-950.
- #9101 Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) Antibody: Tsuda, M. et al. (2008) Activation of dorsal horn microglia contributes to diabetes-induced tactile allodynia via extracellular signal-regulated protein kinase signaling. *Glia* 56, 378-386.

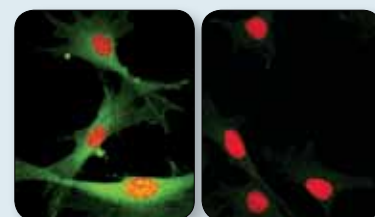


Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb #4370: Confocal IF analysis of *Drosophila* egg chambers, untreated (upper) or λ-phosphatase-treated (lower), using #4370 (green) and S6 Ribosomal Protein (54D2) Mouse mAb #2317 (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

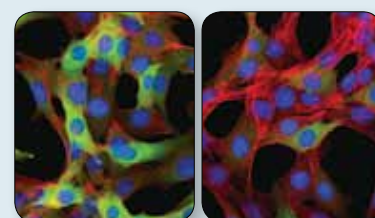
# PI3K/Akt Signaling



**Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb #4060:** Confocal IF analysis of C2C12 cells, treated with LY294002 #9901 (upper) or insulin (lower), using #4060 (green). Actin filaments were labeled with Alexa Fluor® 555 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**GSK-3β (3D10) Mouse mAb #9832:** Confocal IF analysis of wild-type mouse embryonic fibroblasts (MEFs) (left) and GSK-3β (-/-) MEFs (right) using #9832 (green). Red = Propidium Iodide (PI)/RNase Staining Solution #4087 (fluorescent DNA dye). (MEF wild-type and GSK-3β (-/-) cells were kindly provided by Dr. Jim Woodgett, University of Toronto, Canada).



**Phospho-NDRG1 (Thr346) (D98G11) XP® Rabbit mAb (Alexa Fluor® 488 Conjugate) #6992:** Confocal IF analysis of C2C12 cells, treated with insulin (left) or LY294002 #9901 (right) using #6992 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

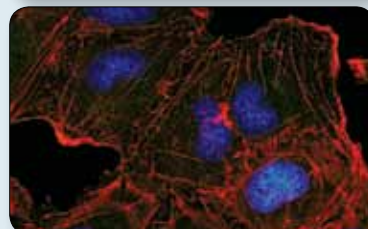
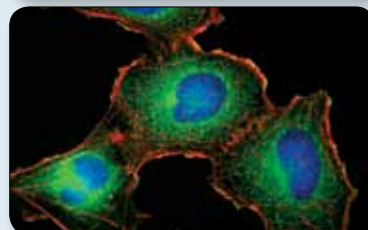
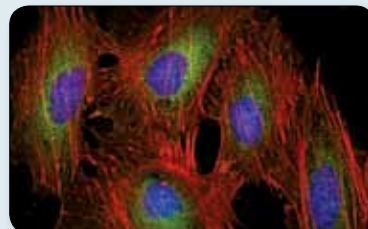
	Applications	Reactivity
#2965 Phospho-Akt (Thr308) (C31E5E) Rabbit mAb	W, IF-IC, F	H, M, R, Hm, Mk
<b>XP®</b> #4060 Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC, F	H, M, R, Hm, Mk, Dm, Z, B, (C, X, Dg, Pg)
#4058 Phospho-Akt (Ser473) (193H12) Rabbit mAb	W, IP, IF-IC, F	H, M, R
#9271 Phospho-Akt (Ser473) Antibody	W, IP, IF-IC, F	H, M, R, Hm, Dm, B, Dg, Pg, (Mk, C, X)
#4685 Akt (pan) (11E7) Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R, Mk
#4691 Akt (pan) (C67E7) Rabbit mAb	W, IP, IHC-P, IF-IC, F	<b>AF</b> H, M, R, Mk, Dm
#9272 Akt Antibody	W, IP, IF-IC, F	H, M, R, Hm, Mk, C, Dm, B, Pg, (Dg)
#2920 Akt (pan) (40D4) Mouse mAb	W, IP, IHC-P, IF-IC, F	H, M, R, Mk
#2966 Akt (5G3) Mouse mAb	IP, IF-IC, F	H, M, R, Hm
#2880 FoxO1 (C29H4) Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk
#2497 FoxO3a (75D8) Rabbit mAb	W, IF-IC	H, M, R, Mk
<b>XP®</b> #4818 GSK-3α (D80D1) XP® Rabbit mAb	IF-IC, F	H, M, (R)
<b>XP®</b> #5676 GSK-3α/β (D75D3) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Hm, Mk
<b>XP®</b> #5558 Phospho-GSK-3β (Ser9) (D85E12) XP® Rabbit mAb	W, IP, IF-IC, F	H, M, R, Hm
#9323 Phospho-GSK-3β (Ser9) (5B3) Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk
<b>New</b> #9832 GSK-3β (3D10) Mouse mAb	W, IP, IF-IC, F	H, M, R, Hm, Mk
<b>XP®</b> #5482 Phospho-NDRG1 (Thr346) (D98G11) XP® Rabbit mAb	W, IHC-P, IF-IC, F	<b>AF</b> H, M, R, Mk
#4902 PI4 Kinase Antibody	W, IP, IF-IC	H, M, R
#2727 SHIP1 (C40G9) Rabbit mAb	W, IP, IF-IC, F	H
#2726 SHIP1 (P290) Antibody	W, IP, IF-IC, F	H
#2839 SHIP2 (C76A7) Rabbit mAb	W, IP, IF-IC, F	H
<b>XP®</b> #4308 Tuberin/TSC2 (D93F12) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Hm, Mk
#4912 YAP Antibody	W, IP, IHC-P, IF-IC, F	H, M, R, Mk
#4202 YB1 (D299) Antibody	W, IHC-P, IF-IC	H, M, R, Mk, (X, B)

## Product References:

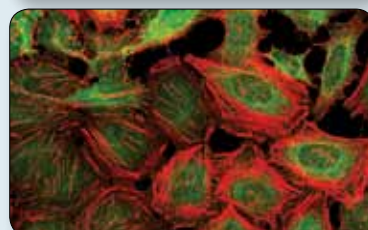
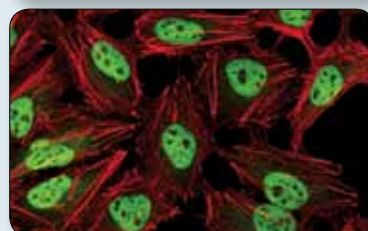
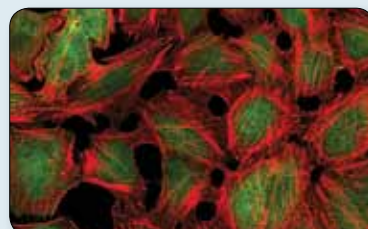
- #4058 Phospho-Akt (Ser473) (193H12) Rabbit mAb: Kleiman, L.B. et al. (2011) Rapid phospho-turnover by receptor tyrosine kinases impacts downstream signaling and drug binding. *Mol. Cell* 43, 723-737.
- #9271 Phospho-Akt (Ser473) Antibody: Hoshino, Y. et al. (2004) Phosphatidylinositol 3-kinase and Akt participate in the FSH-induced meiotic maturation of mouse oocytes. *Mol. Reprod. Dev.* 69, 77-86.
- #2497 FoxO3a (75D8) Rabbit mAb: Sykes, S.M. et al. (2011) AKT/FOXO signaling enforces reversible differentiation blockade in myeloid leukemias. *Cell* 146, 697-708.

# Development and Differentiation

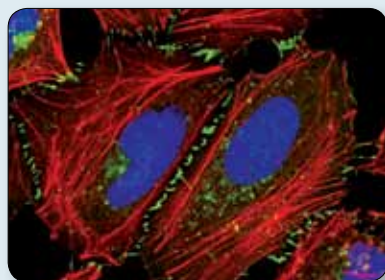
	Applications	Reactivity
#3903 AFP (3H8) Mouse mAb	W, IF-IC	H, M
#3215 AP-2α (C83E10) Rabbit mAb	W, IF-IC	H, M, R, Mk
#2509 AP-2β Antibody	W, IP, IF-IC	H, M, R
#2320 AP-2γ Antibody	W, IF-IC	H
<b>XP</b> #4176 Phospho-β-Catenin (Ser675) (D2F1) XP® Rabbit mAb	W, IP, IF-F, IF-IC	H, (M, R, C, X, Z)
#9581 β-Catenin Antibody (Amino-terminal Antigen)	W, IP, IF-F	H, M, R, Mk
#2677 β-Catenin (L54E2) Mouse mAb (IF Preferred)	<b>AF</b> IP, IF-IC, F	H, (M, R, Mk, Pg)
#4115 CDCP1 Antibody	W, IP, IF-IC	H
#2005 FoxP1 Antibody	W, IP, IHC-P, IF-IC, F	H, M, (R)
#2230 LEF1 (C12A5) Rabbit mAb	W, IP, IF-IC, F	H, M, R
#4608 MAML1 Antibody	W, IP, IF-IC	H
<b>XP</b> #4380 Notch1 (D6F11) XP® Rabbit mAb	W, IF-IC, F	H, M, R
<b>XP</b> #4530 Notch2 (D67C8) XP® Rabbit mAb	W, IP, IF-IC	H, R
<b>XP</b> #5732 Notch2 (D76A6) XP® Rabbit mAb	W, IP, IF-IC, F	H, M, R
<b>New</b> #9878 Phospho-Numb (Ser276) (D5C2) Rabbit mAb	W, IF-IC	H, (M, R, C, X, Z, B)
#2756 Numb (C29G11) Rabbit mAb	W, IP, IF-IC, F	H, M, R, Mk
#2761 Numb (C44B4) Rabbit mAb	W, IP, IF-IC, F	H
#9585 Slug (C19G7) Rabbit mAb	W, IP, IHC-P, IF-IC	H, M
#9516 Phospho-Smad1/5 (Ser463/465) (41D10) Rabbit mAb	W, IF-IC, F	H, M, R
<b>New</b> #6944 Smad1 (D59D7) XP® Rabbit mAb	W, IP, IF-IC, F, ChIP	H, M, (Mk, X, B)
<b>XP</b> #9510 Phospho-Smad2 (Ser465/467)/ Smad3 (Ser423/425) (D6G10) XP® Rabbit mAb	IF-IC, F	H
<b>XP</b> #5339 Smad2 (D43B4) XP® Rabbit mAb	W, IP, IF-IC, F, ChIP	H, M, R, Mk
#3122 Smad2 (86F7) Rabbit mAb	W, IP, IF-IC	H, Mk
<b>New</b> #8685 Smad2/3 (D7G7) XP® Rabbit mAb	W, IP, IF-IC, F, ChIP	H, M, R, Mk
<b>XP</b> #5678 Smad2/3 Antibody	W, IP, IF-IC, F, ChIP	H, M, R, Mk, (X)
#9523 Smad3 (C67H9) Rabbit mAb	W, IP, IF-IC, F, ChIP	H, M, R, Mk, (X, Z, B)
#9513 Smad3 Antibody	W, IP, IF-IC	H, M, R
#4973 SnoN Antibody	W, IF-IC	H, (Mk)
#2203 TCF1 (C63D9) Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M
#5868 TIF1β (4E1) Mouse mAb	W, IF-IC	H
#4681 TLE1/2/3/4 Antibody	W, IF-IC	H, M, Mk, Dm, (R, X, Z)



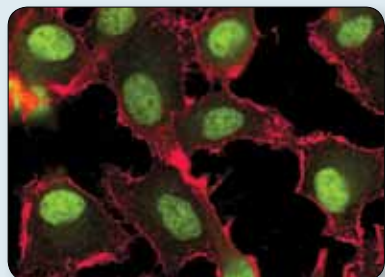
**Phospho-Numb (Ser276) (D5C2) Rabbit mAb #9878:** Confocal IF analysis of HeLa cells, untreated (upper) or treated with either TPA #4174 (middle) or TPA and λ phosphatase (lower), using #9878 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**Smad2/3 (D7G7) XP® Rabbit mAb #8685:** Confocal IF analysis of HeLa cells, serum-starved (upper), treated with hTGF-β3 #8425 (100 ng/ml, 30 min; middle), or pre-treated with SB43152 (10 μg/mL, 1 hr) followed by hTGF-β3 #8425 (100 ng/ml, 30 min; lower), using #8685 (green). Actin filaments were labeled with DY-554 phalloidin (red).

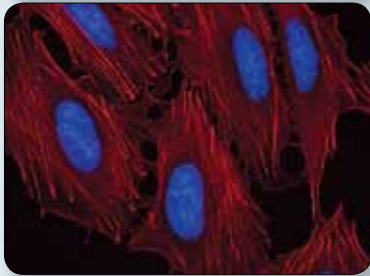
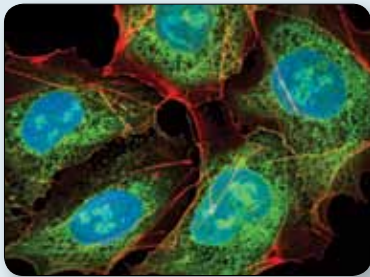


**β-Catenin (L54E2) Mouse mAb (IF Preferred) #2677:** Confocal IF analysis of HeLa cells using #2677 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

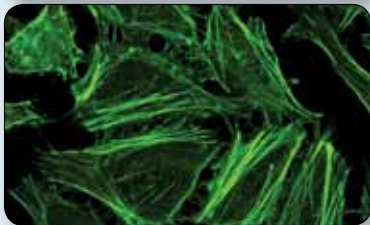
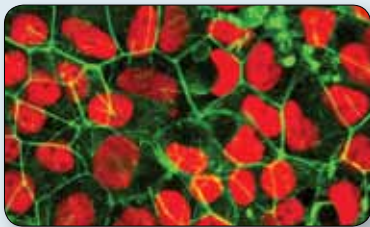


**Smad1 (D59D7) XP® Rabbit mAb #6944:** Confocal IF analysis of HT-1080 cells, treated with human BMP2 #4697, using #6944 (green). Actin filaments were labeled with DY-554 phalloidin (red).

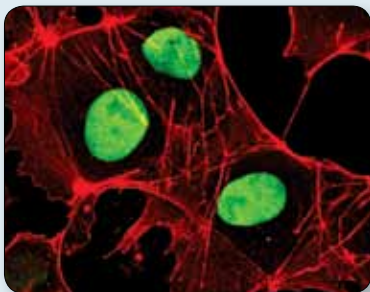
# Embryonic Stem Cell Markers



**LIN28A (D1A1A) XP® Rabbit mAb #8641:** Confocal IF analysis of NTERA-2 cl.D1 (upper) and HeLa (lower) cells using #8641 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**Oct-4A (C30A3) Rabbit mAb (Alexa Fluor® 555 Conjugate) #4439:** Confocal IF analysis of NTERA-2 cl.D1 (upper) and HeLa (lower) cells using #4439 (red). Actin filaments were labeled with Alexa Fluor® 488 phalloidin (green).



**Sox2 (D6D9) XP® Rabbit mAb #3579:** Confocal IF analysis of NTERA-2 cl.D1 cells using #3579 (green). Actin filaments were labeled with DY-554 phalloidin (red).

## Induced Pluripotent Stem (iPS) Cells

		Applications	Reactivity
#9092	StemLight® iPS Cell Reprogramming Antibody Kit	IF-IC	H
<b>New</b>	#8641 LIN28A (D1A1A) XP® Rabbit mAb	W, IF-IC, F	H, M, (R, Mk)
<b>XP</b>	#3695 LIN28A (D84C11) XP® Rabbit mAb	W, IF-IC, F	H, (R, Mk)
<b>New</b>	#8706 LIN28A (D9F5) Rabbit mAb	W, IP, IF-IC	H, M, (R, Mk)
	#3978 LIN28A (A177) Antibody	W, IP, IHC-P, IF-IC, F	H, M, (Mk)
	#5930 LIN28A (6D1F9) Mouse mAb	W, IF-IC	H
<b>XP</b>	#5605 c-Myc (D84C12) XP® Rabbit mAb	W, IP, IF-IC, F	H, M, R, (Mk, Dg, Pg)
<b>XP</b>	#4903 Nanog (D73G4) XP® Rabbit mAb	<b>AF</b> W, IHC-P, IF-IC, F	H, (Mk)
	#3580 Nanog Antibody	W, IF-IC, F, ChIP	H
	#4893 Nanog (1E6C4) Mouse mAb	W, IHC-P, IF-IC, F	H
	#2840 Oct-4A (C30A3) Rabbit mAb	<b>AF</b> W, IF-IC, F	H, M
	#2890 Oct-4A (C52G3) Rabbit mAb	W, IHC-P, IF-IC, F, ChIP	H
	#2750 Oct-4 Antibody	W, IHC-P, IF-IC, F, ChIP	H, (Mk)
<b>XP</b>	#3579 Sox2 (D6D9) XP® Rabbit mAb	<b>AF</b> W, IHC-P, IF-IC, F	H, (Mk, B, Dg)
	#4900 Sox2 (L1D6A2) Mouse mAb	W, IF-IC, F	H, M, (R, B, Dg)

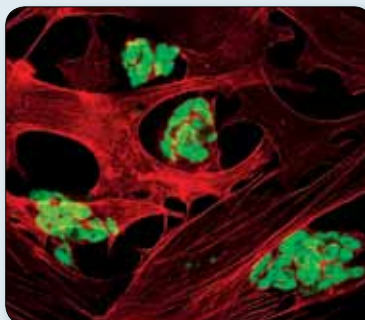
## Blastocyst

		Applications	Reactivity
#9656	StemLight® Pluripotency Antibody Kit	IF-IC	H
#9094	StemLight® Pluripotency Surface Marker Antibody Kit	IF-IC	H
#9093	StemLight® Pluripotency Transcription Factor Antibody Kit	IF-IC	H
	#3195 E-Cadherin (24E10) Rabbit mAb	<b>AF</b> W, IHC-P, IHC-F, IF-IC, F	H, M, (Dg, Pg)
	#2818 Cripto Antibody (Mouse Specific)	W, IP, IF-IC	M
<b>XP</b>	#4903 Nanog (D73G4) XP® Rabbit mAb	<b>AF</b> W, IHC-P, IF-IC, F	H, (Mk)
	#3580 Nanog Antibody	W, IF-IC, F, ChIP	H
	#4893 Nanog (1E6C4) Mouse mAb	W, IHC-P, IF-IC, F	H
	#2840 Oct-4A (C30A3) Rabbit mAb	<b>AF</b> W, IF-IC, F	H, M
	#2890 Oct-4A (C52G3) Rabbit mAb	W, IHC-P, IF-IC, F, ChIP	H
	#2750 Oct-4 Antibody	W, IHC-P, IF-IC, F, ChIP	H, (Mk)
<b>New</b>	#8459 Sall4 (D16H12) Rabbit mAb	W, IF-IC	H
<b>XP</b>	#5339 Smad2 (D43B4) XP® Rabbit mAb	W, IP, IF-IC, F, ChIP	H, M, R, Mk
	#3122 Smad2 (86F7) Rabbit mAb	W, IP, IF-IC	H, Mk
<b>XP</b>	#3579 Sox2 (D6D9) XP® Rabbit mAb	<b>AF</b> W, IHC-P, IF-IC, F	H, (Mk, B, Dg)
	#4900 Sox2 (L1D6A2) Mouse mAb	W, IF-IC, F	H, M, (R, B, Dg)
	#4744 SSEA1 (MC480) Mouse mAb	IHC-P, IF-IC, F	M
	#4755 SSEA4 (MC813) Mouse mAb	<b>AF</b> IF-IC, F	H
	#9139 Stat3 (124H6) Mouse mAb	W, IP, IHC-P, IF-IC, F, ChIP	H, M, R, Mk
<b>XP</b>	#3737 SUZ12 (D39F6) XP® Rabbit mAb	W, IP, IF-IC, ChIP	H, M, R, Mk
	#4746 TRA-1-60(S) (TRA-1-60(S)) Mouse mAb	W, IHC-P, IF-IC, F	H
	#4745 TRA-1-81 (TRA-1-81) Mouse mAb	IHC-P, IF-IC, F	H

### Product References:

#4755 SSEA4 (MC813) Mouse mAb: Krupnick, J.G. et al. (1994) Globo-series carbohydrate antigens are expressed in different forms on human and murine teratocarcinoma-derived cells. *Int. J. Cancer* 59, 692-698.

#4745 TRA-1-81 (TRA-1-81) Mouse mAb: Andrews, P.W. et al. (1996) Comparative analysis of cell surface antigens expressed by cell lines derived from human germ cell tumours. *Int. J. Cancer* 66, 806-816.



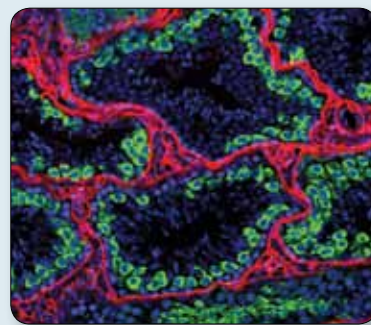
**SUZ12 (D39F6) XP® Rabbit mAb #3737:** Confocal IF analysis of mouse embryonic stem cells growing on mouse embryonic fibroblast (MEF) feeder cells using #3737 (green). Actin filaments were labeled with DY-554 phalloidin (red).



# Lineage-specific Markers

## Primordial Germ Cell

	Applications	Reactivity
#9115 <b>Blimp-1/PRDI-BF1 (C14A4) Rabbit mAb</b>	W, IP, IF-IC	H, M, (Mk)
<b>New</b> #8227 <b>DDX4 Antibody</b>	W, IF-F	H, M, R, (Mk)
<b>New</b> #5940 <b>Mili (D14F5) XP® Rabbit mAb</b>	W, IP, IHC-P, IF-F	M
<b>XP</b> #2071 <b>Mili Antibody</b>	W, IP, IHC-P, IF-F	M
<b>New</b> #6915 <b>Miwi (D92B7) XP® Rabbit mAb</b>	W, IP, IF-F	M, (H, R)
<b>XP</b> #2079 <b>Miwi (G82) Antibody</b>	W, IP, IHC-P, IF-F	M
#2840 <b>Oct-4A (C30A3) Rabbit mAb</b>	<b>AF</b> W, IF-IC, F	H, M
#2890 <b>Oct-4A (C52G3) Rabbit mAb</b>	W, IHC-P, IF-IC, F, ChIP	H
#2750 <b>Oct-4 Antibody</b>	W, IHC-P, IF-IC, F, ChIP	H, (Mk)
#4744 <b>SSEA1 (MC480) Mouse mAb</b>	<b>AF</b> IHC-P, IF-IC, F	M
#5868 <b>TIF1β (4E1) Mouse mAb</b>	W, IF-IC	H

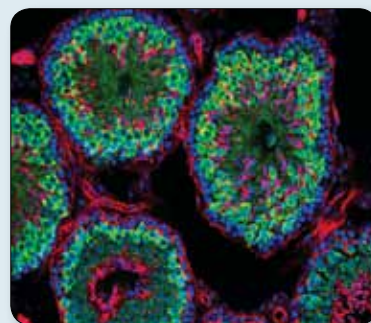


**Mili (D14F5) XP® Rabbit mAb #5940:** Confocal IF analysis of mouse testis using #5940 (green) and Pan-Keratin (C11) Mouse mAb #4545 (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

## Ectoderm (Neuronal Lineage)

### Neural Stem Cell

#2088 <b>LEDGF (C57G11) Rabbit mAb</b>	W, IHC-P, IF-IC, F	H, M, R, (Mk)
<b>XP</b> #5663 <b>Musashi-1 (D46A8) XP® Rabbit mAb</b>	W, IF-F	H, M, R
#2154 <b>Musashi Antibody</b>	W, IF-F	H, M, R, (Z)
#4760 <b>Nestin (Rat-401) Mouse mAb</b>	IHC-P, IF-F	R
#8238 <b>p75NTR (D4B3) XP® Rabbit mAb</b>	W, IP, IF-IC	H, M, R
#4194 <b>Sox1 Antibody</b>	W, IF-F	M, R, (H)
<b>XP</b> #3579 <b>Sox2 (D6D9) XP® Rabbit mAb</b>	<b>AF</b> W, IHC-P, IF-IC, F	H, (Mk, B, Dg)
#4900 <b>Sox2 (L1D6A2) Mouse mAb</b>	W, IF-IC, F	H, M, (R, B, Dg)
<b>XP</b> #5741 <b>Vimentin (D21H3) XP® Rabbit mAb</b>	<b>AF</b> W, IHC-P, IF-IC, F	H, M, R, Mk



**Miwi (D92B7) XP® Rabbit mAb #6915:** Confocal IF analysis of mouse testis using #6915. Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

### Neural Crest

#4744 <b>SSEA1 (MC480) Mouse mAb</b>	IHC-P, IF-IC, F	M
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### Glial Progenitor

#4574 <b>FGF Receptor 3 (C51F2) Rabbit mAb</b>	W, IP, IHC-P, IF-IC	H
#4760 <b>Nestin (Rat-401) Mouse mAb</b>	IHC-P, IF-F	R

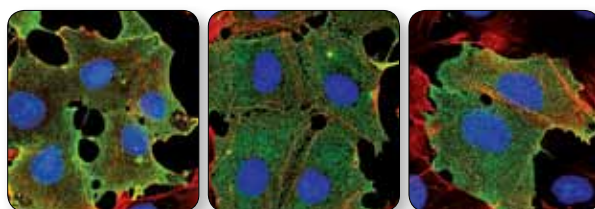
### Astrocyte

#4574 <b>FGF Receptor 3 (C51F2) Rabbit mAb</b>	W, IP, IHC-P, IF-IC	H
#3670 <b>GFAP (GA5) Mouse mAb</b>	<b>AF</b> W, IHC-P, IF-F	H, M, R
#2808 <b>Survivin (71G4B7) Rabbit mAb</b>	<b>AF</b> W, IP, IHC-P, IHC-F, IF-IC, F	H, M, R

## StemLight® Kits

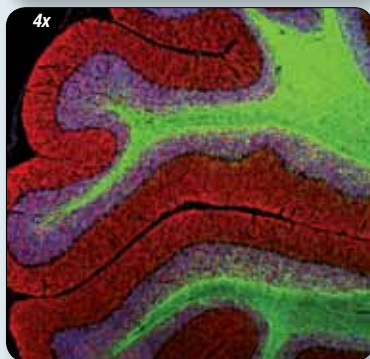
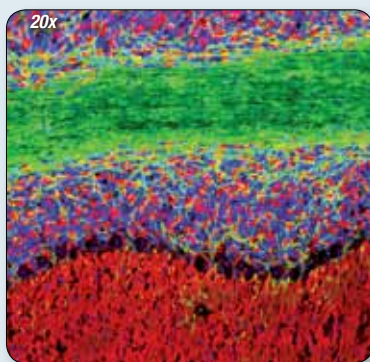
The StemLight® Kits contain panels of antibodies for the detection of various proteins used to mark pluripotency, or combinations of proteins that have been used to reprogram somatic cells to induced pluripotent stem (iPS) cells. These kits can be used to track pluripotency status through surface markers or transcription factors. They can also be used to determine the efficiency of expression of the reprogramming factors following transfection, viral transduction, or other means of protein delivery. The kit components are pre-optimized for parallel use in immunofluorescent analysis at a standard dilution, but components are also validated for use in other applications—please refer to individual product datasheet information for application-specific recommendations. Enough reagents are provided for 100 immunofluorescent assays, based on a working volume of 100 µl.

	Applications	Reactivity
#9092 <b>StemLight® iPS Cell Reprogramming Antibody Kit</b>	IF-IC	H
#9656 <b>StemLight® Pluripotency Antibody Kit</b>	IF-IC	H
#9094 <b>StemLight® Pluripotency Surface Marker Antibody Kit</b>	IF-IC	H
#9093 <b>StemLight® Pluripotency Transcription Factor Antibody Kit</b>	IF-IC	H

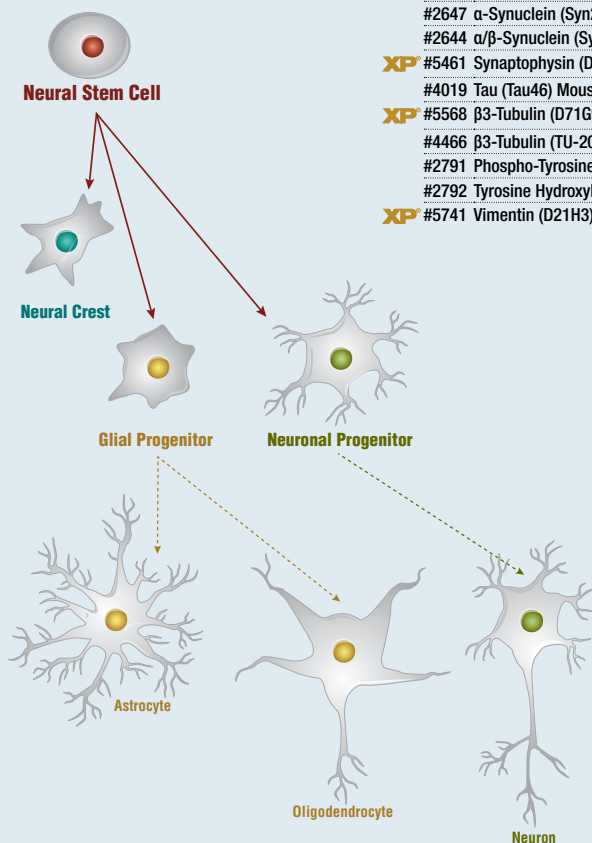


**StemLight® Pluripotency Surface Marker Antibody Kit #9094:** Confocal IF analysis of NTERA-2 cl.D1 cells using TRA-1-60(S) Mouse mAb (left), TRA-1-81 (TRA-1-81) Mouse mAb (center), and SSEA4 (MC813) Mouse mAb (right). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

# Lineage-specific Markers Continued



**CNPase (D83E10) XP® Rabbit mAb #5664:** Confocal IF analysis of rat cerebellum using #5664 (green) and  $\alpha/\beta$ -Synuclein (Syn205) Mouse mAb #2644 (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



## Ectoderm (Neuronal Lineage) Continued

Applications

Reactivity

### Oligodendrocyte

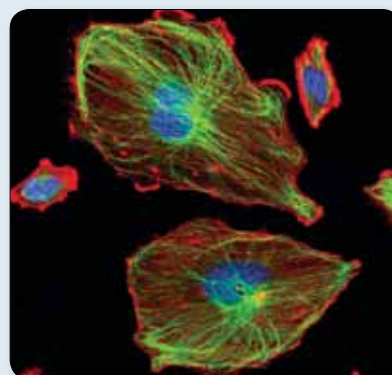
#3570 CD44 (156-3C11) Mouse mAb	<b>AF</b> W, IP, IHC-P, IF-IC, F	H
#5640 CD44 (8E2) Mouse mAb	W, IP, IF-IC, F	H, M, R
<b>XP</b> #5664 CNPase (D83E10) XP® Rabbit mAb	<b>AF</b> W, IP, IF-F	H, M, R
<b>XP</b> #3493 RIP (D94C12) XP® Rabbit mAb	W, IP, IF-IC, F	H, M, R, Hm, Mk

### Neuronal Progenitor

#9894 CEND1 Antibody	W, IF-F	H, M, R
#4541 Phospho-MAP2 (Ser136) Antibody	W, IF-F	H, R, Mk, (M)
#4542 MAP2 Antibody	W, IF-F, IF-IC	H, M, R, Mk
#4760 Nestin (Rat-401) Mouse mAb	IHC-P, IF-F	R

### Neuron

<b>XP</b> #8070 AMPA Receptor (GluR 4) (D41A11) XP® Rabbit mAb	W, IP, IF-F	H, M, R
#9894 CEND1 Antibody	W, IF-F	H, M, R
#9393 CRMP-2 Antibody	W, IF-IC	H, M, R
#3453 Phospho-Doublecortin (Ser334) Antibody	W, IP, IF-F	H, M, R
#4604 Doublecortin Antibody	W, IP, IF-F, F	H, M, R, Mk, Dm
#8945 GAP43 (D9C8) Rabbit mAb	W, IP, IF-F	H, M, R
#4541 Phospho-MAP2 (Ser136) Antibody	W, IF-F	H, R, Mk, (M)
#4542 MAP2 Antibody	W, IF-F, IF-IC	H, M, R, Mk
#4760 Nestin (Rat-401) Mouse mAb	IHC-P, IF-F	R
#2836 Neurofilament-H (RMdO 20) Mouse mAb	W, IP, IHC-P, IF-F	H, M, R
#2837 Neurofilament-L (C28E10) Rabbit mAb	<b>AF</b> W, IHC-P, IF-F	H, M, R
#2835 Neurofilament-L (DA2) Mouse mAb	W, IHC-P, IF-F	H, M, R
#2838 Neurofilament-M (RMO 14.9) Mouse mAb	W, IP, IHC-P, IF-IC	H, M, R
<b>XP</b> #3366 Neuropilin-2 (D39A5) XP® Rabbit mAb	W, IP, IHC-P, IF-F	M, R
<b>XP</b> #3450 PSD95 (D27E11) XP® Rabbit mAb	W, IF-F	H, M, R
#2507 PSD95 Antibody	W, IP, IF-F	H, M, R
#4191 Phospho-Stathmin (Ser38) (D19H10) Rabbit mAb	W, IP, IHC-P, IF-IC	H, Mk
#4265 STOP (175) Mouse mAb	W, IF-F	H, M, R
<b>XP</b> #5297 Synapsin-1 (D12G5) XP® Rabbit mAb	W, IP, IHC-P, IF-F	H, M, R
#2869 Syntaxin 6 (C34B2) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
<b>XP</b> #4179 $\alpha$ -Synuclein (D37A6) XP® Rabbit mAb	W, IP, IHC-P, IF-F	M, R
#2628 $\alpha$ -Synuclein Antibody (IF Preferred)	W, IF-F	H, M, R
#2647 $\alpha$ -Synuclein (Syn204) Mouse mAb	W, IHC-P, IF-P	H
#2644 $\alpha/\beta$ -Synuclein (Syn205) Mouse mAb	W, IP, IHC-P, IF-F	H, M, R
<b>XP</b> #5461 Synaptophysin (D35E4) XP® Rabbit mAb	W, IP, IF-F	H, M, R
#4019 Tau (Tau46) Mouse mAb	W, IHC-P, IF-F, IF-P	H, M, R, (B)
<b>XP</b> #5568 $\beta$ -Tubulin (D71G9) XP® Rabbit mAb	W, IP, IF-F	H, M, R
#4466 $\beta$ -Tubulin (TU-20) Mouse mAb	W, IHC-P, IF-F	H, M, R
#2791 Phospho-Tyrosine Hydroxylase (Ser40) Antibody	W, IF-IC	R, (H, M)
#2792 Tyrosine Hydroxylase Antibody	W, IF-IC	H, M, R
<b>XP</b> #5741 Vimentin (D21H3) XP® Rabbit mAb	<b>AF</b> W, IHC-P, IF-IC, F	H, M, R, Mk



**Vimentin (D21H3) XP® Rabbit mAb (Alexa Fluor® 488 Conjugate) #9854:** Confocal IF analysis of SNB19 cells using #9854 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

## Mesoderm (Mesenchymal Lineage)

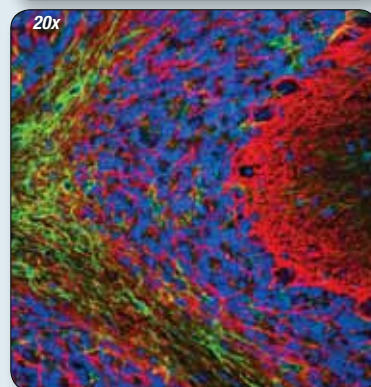
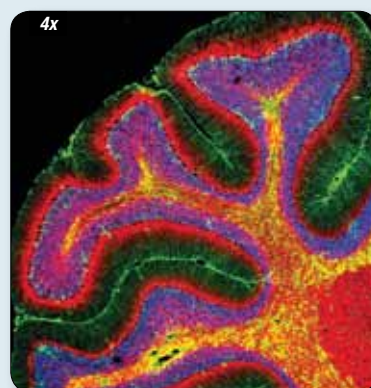
	Applications	Reactivity
<b>Mesenchymal Stem Cell</b>		
<b>XP</b> #3074 c-Kit (D13A2) XP® Rabbit mAb	W, IP, IF-IC	H, M
#3308 c-Kit (Ab81) Mouse mAb	<b>AF</b> W, IP, IF-IC, F	H
#5420 SPARC Antibody	W, IP, IF-IC	H, M, Mk
<b>Adipogenesis</b>		
#2295 C/EBPα Antibody	W, IF-IC	H, M, R
#2443 PPARγ (81B8) Rabbit mAb	W, IP, IF-IC	H, M, (R)
#2435 PPARγ (C26H12) Rabbit mAb	W, IHC-P, IF-IC	H, M, (R)
<b>Myogenesis</b>		
<b>XP</b> #5332 Desmin (D93F5) XP® Rabbit mAb	W, IF-F, IF-IC	H, M, R, (Mk)
#4024 Desmin Antibody	W, IF-F	M, R, (H, Mk)
<b>Osteo- and Chondrogenesis</b>		
#4442 OB-Cadherin (P707) Antibody	W, IP, IF-IC	H, M, R, (Mk)

## Mesoderm (Hematopoietic Lineage)

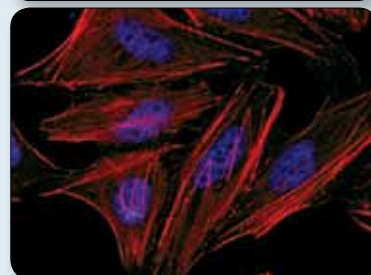
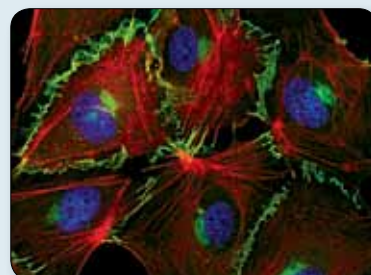
<b>Hemangioblast</b>		
<b>XP</b> #4336 AML1 (D33G6) XP® Rabbit mAb	W, IHC-P, IF-IC, F	H, Mk
#4334 AML1 Antibody	W, IF-IC, F	H, Mk
<b>XP</b> #4589 GATA-1 (D24E4) XP® Rabbit mAb	W, IP, IF-IC, F	H
<b>XP</b> #3535 GATA-1 (D52H6) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R
#2479 VEGF Receptor 2 (55B11) Rabbit mAb	W, IP, IHC-P, IF-F, IF-IC	H, M
<b>Hematopoietic Stem Cell</b>		
<b>XP</b> #4336 AML1 (D33G6) XP® Rabbit mAb	W, IHC-P, IF-IC, F	H, Mk
#4334 AML1 Antibody	W, IF-IC, F	H, Mk
#4115 CD34 Antibody	W, IP, IF-IC	H
<b>XP</b> #4589 GATA-1 (D24E4) XP® Rabbit mAb	W, IP, IF-IC, F	H
<b>XP</b> #3535 GATA-1 (D52H6) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R
<b>XP</b> #5852 GATA-3 (D13C9) XP® Rabbit mAb	W, IF-IC, F	H, (Mk)
<b>XP</b> #3074 c-Kit (D13A2) XP® Rabbit mAb	W, IP, IF-IC	H, M
#3308 c-Kit (Ab81) Mouse mAb	<b>AF</b> W, IP, IF-IC, F	H
#2258 PU.1 (9G7) Rabbit mAb	W, IP, IHC-P, IF-IC, F, ChIP	H, M, (Mk, Pg)
#2266 PU.1 Antibody	W, IP, IHC-P, IF-IC, F, ChIP	H, M, (Mk, Pg)
<b>Angiogenesis</b>		
<b>XP</b> #2500 VE-Cadherin (D87F2) XP® Rabbit mAb	W, IP, IF-IC, F	H, Dm, B, Pg, (Mk)
#2158 VE-Cadherin Antibody	W, IF-IC	H, Dm, B
#3528 CD31 (PECAM-1) (89C2) Mouse mAb	W, IP, IHC-P, IF-IC, F	H
#2479 VEGF Receptor 2 (55B11) Rabbit mAb	W, IP, IHC-P, IF-F, IF-IC	H, M

## Endoderm

<b>Endodermal Progenitor</b>		
<b>XP</b> #5851 GATA-6 (D61E4) XP® Rabbit mAb	W, IF-IC	H, (M, R, Dg, Pg)
#5868 TIF1β (4E1) Mouse mAb	W, IF-IC	H
<b>Hepatogenesis</b>		
#3903 AFP (3H8) Mouse mAb	W, IF-IC	H, M
#3180 Fatty Acid Synthase (C20G5) Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC	H, M, R, (B)
#3143 FoxA2/HNF3β Antibody	W, IP, IF-IC	H, (M, R)
#3113 HNF4α (C11F12) Rabbit mAb	W, IHC-P, IF-IC	H
<b>Pancreatic Cell</b>		
#4593 C-Peptide Antibody	IHC-P, IHC-F, IF-F, IF-IC	H, M, R
#2760 Glucagon Antibody	IHC-P, IHC-F, IF-F	H, M, R
#3014 Insulin (C27C9) Rabbit mAb	IHC-P, IF-F, IF-IC, F	H, M, R
#4590 Insulin Antibody	IHC-P, IF-F, IF-IC, F	H, M, R
<b>New</b> #8138 Insulin (L6B10) Mouse mAb	W, IP, IF-F	R, (H, M)

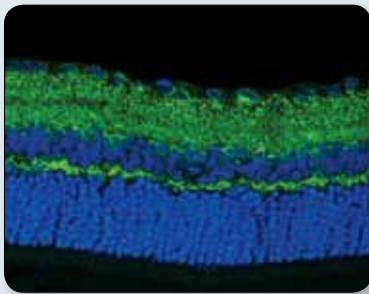


**Neurofilament-L (C28E10) Rabbit mAb (Alexa Fluor® 555 Conjugate) #8039:** Confocal IF analysis of rat cerebellum using #8039 (red) and GFAP (GAS) Mouse mAb #3670 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

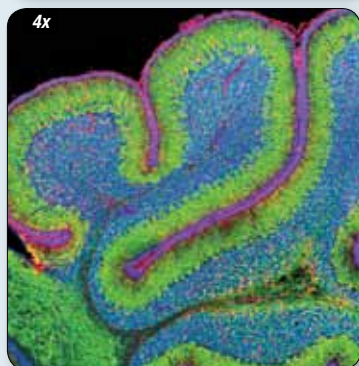
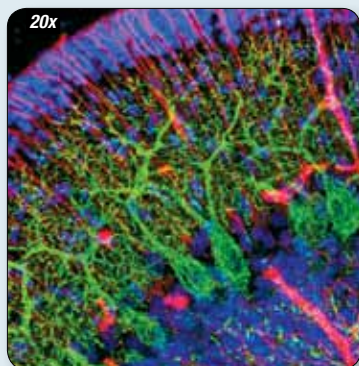


**VE-Cadherin (D87F2) XP® Rabbit mAb #2500:** Confocal IF analysis of HUVE (upper) and HeLa (lower) cells using #2500 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

# Neuroscience



**AMPA Receptor (GluR 4) (D41A11) XP® Rabbit mAb #8070:** Confocal IF analysis of rat retina using #8070 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

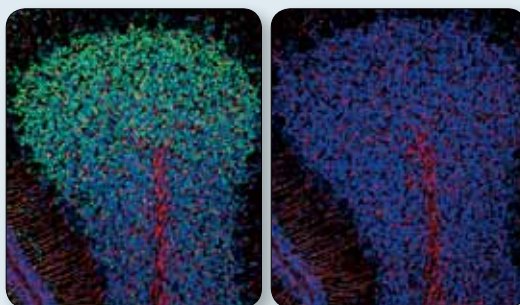


**CEND1 Antibody #9894:** Confocal IF analysis of P14 rat brain using #9894 (green) and Nestin (Rat-401) Mouse mAb #4760 (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

## Product References:

- #2452 APP Antibody:** Muresan, Z. and Muresan, V. (2004) A phosphorylated, carboxy-terminal fragment of beta-amyloid precursor protein localizes to the splicing factor compartment. *Hum. Mol. Genet.* 13, 475-488.
- #2454  $\beta$ -Amyloid Antibody:** Saiz-Sanchez, D. et al. (2010) Somatostatin, tau, and beta-amyloid within the anterior olfactory nucleus in Alzheimer disease. *Exp. Neurol.* 223, 347-350.
- #9198 Phospho-CREB (Ser133) (87G3) Rabbit mAb:** Gaddini, L. et al. (2009) Early effects of high glucose in retinal tissue cultures: Renin-Angiotensin system-dependent and -independent signaling. *Neurobiol. Dis.* 35, 278-285.
- #3670 GFAP (GA5) Mouse mAb:** Davies, J.E. et al. (2008) Transplanted astrocytes derived from BMP- or CNTF-treated glial-restricted precursors have opposite effects on recovery and allodynia after spinal cord injury. *J. Biol.* 7, 24.
- #2154 Musashi Antibody:** Shiras, A. et al. (2007) Spontaneous transformation of human adult nontumorigenic stem cells to cancer stem cells is driven by genomic instability in a human model of glioblastoma. *Stem Cells* 25, 1478-1489.

	Applications	Reactivity
<b>New XP</b> #8070 AMPA Receptor (GluR 4) (D41A11) XP® Rabbit mAb	W, IP, IF-F	H, M, R
#3823 Phospho-APP (Thr668) Antibody	W, IP, IF-IC	H, (M, R)
#2452 APP Antibody	W, IF-IC	H, M, R, Mk
#2450 APP/ $\beta$ -Amyloid (NAB228) Mouse mAb	W, IHC-P, IF-P	H, Mk, B, (Dg, Pg)
<b>XP</b> #3858 APPL1 (D83H4) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
#2454 $\beta$ -Amyloid Antibody	W, IHC-P, IF-P	H
<b>New</b> #6897 Bassoon (D63B6) Rabbit mAb	W, IF-F	M, R, (H)
<b>New</b> #9894 CEND1 Antibody	W, IF-F	H, M, R
<b>XP</b> #5664 CNPase (D83E10) XP® Rabbit mAb	<b>AF</b> W, IP, IF-F	H, M, R
#9198 Phospho-CREB (Ser133) (87G3) Rabbit mAb	<b>AF</b> W, IHC-P, IHC-F, IF-F, IF-IC, F, ChIP	H, M, R
#4820 CREB (D76D11) Rabbit mAb	W, IP, IF-F, IF-IC, F, ChIP	H, M, R, Hm, Mk, Dm
#9197 CREB (48H2) Rabbit mAb	W, IP, IHC-P, IHC-F, IF-F, IF-IC, F, ChIP	H, M, R, Mk, Dm
#9393 CRMP-2 Antibody	W, IF-IC	H, M, R
#2306 DARPP-32 (19A3) Rabbit mAb	W, IP, IHC-P, IF-F	M, R, (H)
#3453 Phospho-Doublecortin (Ser334) Antibody	W, IP, IF-F	H, M, R
#4604 Doublecortin Antibody	W, IP, IF-F, F	H, M, R, Mk, Dm
<b>XP</b> #5684 EAAT1 (D44E2) XP® Rabbit mAb	W, IP, IF-F	H, M, R
#3838 EAAT2 Antibody	W, IF-F	M, R, (H)
#4153 EGR1 (15F7) Rabbit mAb	W, IP, IHC-P, IF-IC, ChIP	H, M, R, (B)
#4154 EGR1 (44D5) Rabbit mAb	W, IP, IF-IC, F, ChIP	H, M, R, (B)
<b>XP</b> #5843 GAD2 (D5G2) XP® Rabbit mAb	W, IP, IF-F	H, M, R
#3988 GAD2 Antibody	W, IF-F	M, R, (H)
<b>New</b> #8945 GAP43 (D9C8) Rabbit mAb	W, IP, IF-F	H, M, R
#3670 GFAP (GA5) Mouse mAb	<b>AF</b> W, IHC-P, IF-F	H, M, R
#3369 GSTP1 (3F2) Mouse mAb	W, IHC-P, IF-IC	H, Mk
<b>XP</b> #5656 Huntingtin (D7F7) XP® Rabbit mAb	W, IP, IF-F	H, M, R
#4541 Phospho-MAP2 (Ser136) Antibody	W, IF-F	H, R, Mk, (M)
#4542 MAP2 Antibody	W, IF-F, IF-IC	H, M, R, Mk
<b>XP</b> #5663 Musashi-1 (D46A8) XP® Rabbit mAb	W, IF-F	H, M, R
#2154 Musashi Antibody	W, IF-F	H, M, R, (Z)
#3402 Myosin Va Antibody	W, IP, IF-F	H, M, R, (Mk, C)
<b>New</b> #8237 NCS1 (D12D2) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Hm, Mk
<b>XP</b> #4760 Nestin (Rat-401) Mouse mAb	IHC-P, IF-F	R
#2836 Neurofilament-H (RmD0 20) Mouse mAb	W, IP, IHC-P, IF-F	H, M, R
#2837 Neurofilament-L (C28E10) Rabbit mAb	<b>AF</b> W, IHC-P, IF-F	H, M, R
#2835 Neurofilament-L (DA2) Mouse mAb	W, IHC-P, IF-F	H, M, R
#2838 Neurofilament-M (RMO 14.9) Mouse mAb	W, IP, IHC-P, IF-IC	H, M, R
<b>XP</b> #3366 Neuropilin-2 (D39A5) XP® Rabbit mAb	W, IP, IHC-P, IF-F	M, R
#3394 NHERF1 (A310) Antibody	W, IF-IC	H
<b>New</b> #8351 NKCC1 (D13A9) Rabbit mAb	W, IP, IF-IC	H, (B, Pg)
#3381 Phospho-NMDAR1 (Ser890) Antibody	W, IF-F	H, M, R
#4231 nNOS (C7D7) Rabbit mAb	W, IP, IHC-P, IF-F	H, M, R
#3451 Phospho- $\mu$ -Opioid Receptor (Ser375) Antibody	W, IP, IF-F	M, (H)



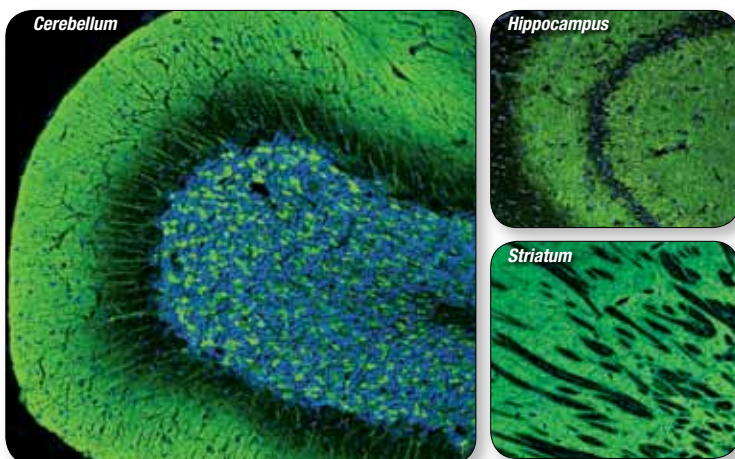
## Phospho-CREB (Ser133) (87G3) Rabbit mAb (Alexa Fluor® 488 Conjugate)

**#9187:** Confocal IF analysis of P14 rat cerebellum, untreated (left) or phosphatase-treated (right), using #9187 (green) and GFAP (GA5) Mouse mAb #3670 (red). Blue pseudocolor = DRAQ5® (fluorescent DNA dye).

# $\alpha$ -Synuclein

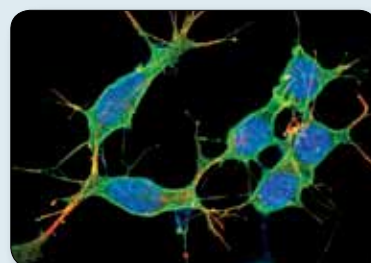
$\alpha$ -synuclein is a 140 amino acid protein expressed abundantly in the brain and recognized as a neuron marker. Research literature has shown  $\alpha$ -synuclein to be the main component of pathogenic Lewy bodies and Lewy neurites.<sup>1</sup> Researchers have also demonstrated that mutations of the  $\alpha$ -synuclein gene have been linked to Parkinson disease.<sup>1</sup>

<sup>1</sup> Goldberg, M.S. and Lansbury Jr., P.T. (2000) *Nat. Cell Biol.* 2, 115-119.



**$\alpha$ -Synuclein (D37A6) XP<sup>®</sup> Rabbit mAb #4179:** Confocal IF analysis of rat cerebellum, hippocampus, and striatum using #4179 (green). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

	Applications	Reactivity
<b>#2680 p35/25 (C64B10) Rabbit mAb</b>	W, IP, IHC-P, IF-F	H, M, R
<b>New XP #8238 p75NTR (D4B3) XP<sup>®</sup> Rabbit mAb</b>	W, IP, IF-IC	H, M, R
<b>XP #3450 PSD95 (D27E11) XP<sup>®</sup> Rabbit mAb</b>	W, IF-F	H, M, R
<b>#2507 PSD95 Antibody</b>	W, IP, IF-F	H, M, R
<b>#5657 RAI1 Antibody</b>	W, IF-IC	H
<b>New XP #5659 Non-phospho-STEP (Ser221) (D74H3) XP<sup>®</sup> Rabbit mAb</b>	W, IP, IF-F	H, M, R
<b>#4396 STEP (23E5) Mouse mAb</b>	W, IP, IF-F	M, R
<b>#4265 STOP (175) Mouse mAb</b>	W, IF-F	H, M, R
<b>XP #5297 Synapsin-1 (D12G5) XP<sup>®</sup> Rabbit mAb</b>	W, IP, IHC-P, IF-F	H, M, R
<b>XP #5461 Synaptophysin (D35E4) XP<sup>®</sup> Rabbit mAb</b>	W, IP, IF-F	H, M, R
<b>XP #4179 <math>\alpha</math>-Synuclein (D37A6) XP<sup>®</sup> Rabbit mAb</b>	W, IP, IHC-P, IF-F	M, R
<b>#2628 <math>\alpha</math>-Synuclein Antibody (IF Preferred)</b>	W, IF-F	H, M, R
<b>#2647 <math>\alpha</math>-Synuclein (Syn204) Mouse mAb</b>	W, IHC-P, IF-P	H
<b>#2644 <math>\alpha/\beta</math>-Synuclein (Syn205) Mouse mAb</b>	W, IP, IHC-P, IF-F	H, M, R
<b>#3347 SYT1 Antibody</b>	W, IF-IC, F	H, M, R, Mk
<b>#4019 Tau (Tau46) Mouse mAb</b>	W, IHC-P, IF-F, IF-P	H, M, R, (B)
<b>#3448 TDP43 (G400) Antibody</b>	W, IP, IF-IC	H, M, R
<b>#3449 TDP43 (A260) Antibody</b>	W, IF-IC	H, M, R
<b>#4609 Trk (pan) (C17F1) Rabbit mAb</b>	W, IP, IF-IC, F	H, M, R
<b>#3376 TrkC (C44H5) Rabbit mAb</b>	W, IP, IF-IC	H, M, R
<b>XP #5568 <math>\beta</math>3-Tubulin (D71G9) XP<sup>®</sup> Rabbit mAb</b>	W, IP, IF-F	H, M, R
<b>#4466 <math>\beta</math>3-Tubulin (TU-20) Mouse mAb</b>	W, IHC-P, IF-F	H, M, R
<b>#2791 Phospho-Tyrosine Hydroxylase (Ser40) Antibody</b>	W, IF-IC	R, (H, M)
<b>#2792 Tyrosine Hydroxylase Antibody</b>	W, IF-IC	H, M, R



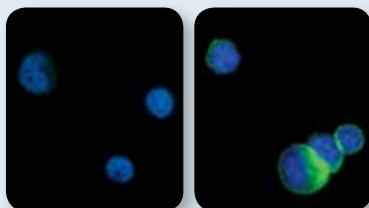
**p75NTR (D4B3) XP<sup>®</sup> Rabbit mAb #8238:** Confocal IF analysis of SK-N-MC cells using #8238 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

## Product References:

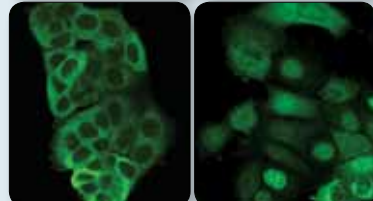
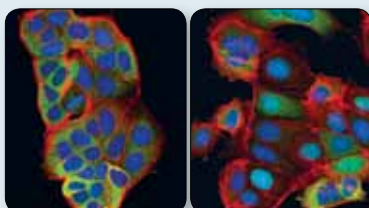
- #2835 Neurofilament-L (DA2) Mouse mAb:** Evans, J. et al. (2001) Characterization of mitotic neurons derived from adult rat hypothalamus and brain stem. *J. Neurophysiol.* 87, 1076-1085. / Haddad, L.A. et al. (2002) The TSC1 tumor suppressor hamartin interacts with neurofilament-L and possibly functions as a novel integrator of the neuronal cytoskeleton. *J. Biol. Chem.* 277, 44180-44186. / Shaw, G. et al. (2002) Preferential transformation of human neuronal cells by human adenoviruses and the origin of HEK 293 cells. *FASEB J.* 16, 869-871.
- #4265 STOP (175) Mouse mAb:** Baratier, J. et al. (2006) Cloning, expression, and properties of the microtubule-stabilizing protein STOP. *J. Biol. Chem.* 281, 19561-19569. / Bosc, C. et al. (1996) Phosphorylation of microtubule-associated protein STOP by calmodulin kinase II. *Proc. Natl. Acad. Sci. USA* 93, 2125-2130.
- #4019 Tau (Tau46) Mouse mAb:** Bramblett, G. T. et al. (1993) New phosphorylation sites identified in hyperphosphorylated tau (paired helical filament-tau) from Alzheimer's disease brain using nanoelectrospray mass spectrometry. *Neuron* 10, 1089-1099. / Saiz-Sanchez, D. et al. Somatostatin, tau, and beta-amyloid within the anterior olfactory nucleus in Alzheimer disease. (2010) *Exp. Neurol.* 223, 347-350.

**XP<sup>®</sup> Monoclonal Antibodies,**  
one antibody, multiple applications

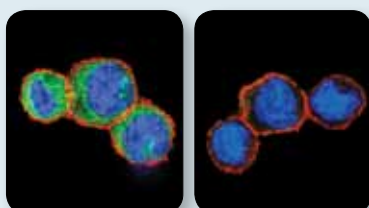
# Immunology and Inflammation



**Phospho-HS1 (Tyr397) (D12C1) XP® Rabbit mAb #8714:** Confocal IF analysis of Ramos cells, untreated (left) or treated with IgM (12 µg/mL, 10 min; right) using #8714 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**NFAT1 (D43B1) XP® Rabbit mAb #5861:** Confocal IF analysis of MCF7 cells, untreated (left) or treated with Ionomycin #9995 (1 µM, 1 hr; right), using #5861 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**Phospho-TBK1/NAK (Ser172) (D52C2) XP® Rabbit mAb #5483:** Confocal IF analysis of THP-1 cells differentiated with TPA #4174 (80 nM, overnight) followed by treatment with LPS (1 µg/ml, 1 hr; left) or LPS with λ phosphatase treatment (right) using #5483 (green). Actin filaments were labeled with DY-554 Phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

## Product References:

**#4964 IRF-4 Antibody:** Staudt, V. et al. (2010) Interferon-regulatory factor 4 is essential for the developmental program of T helper 9 cells. *Immunity* 33, 192-202.

**#3033 Phospho-NF-κB p65 (Ser536) (93H1) Rabbit mAb:** Yadav, U.C. et al. (2009) Prevention of endotoxin-induced uveitis in rats by bentofiamine, a lipophilic analogue of vitamin B1. *Invest. Ophthalmol. Vis. Sci.* 50, 2276-2282. / Xie, S. et al. (2010) IL-17 activates the canonical NF-κappaB signaling pathway in autoimmune B cells of BXD2 mice to upregulate the expression of regulators of G-protein signaling 16. *J. Immunol.* 184, 2289-2296.

**#4764 NF-κB p65 (C22B4) Rabbit mAb:** Stairs, D.B. et al. (2011) Deletion of p120-catenin results in a tumor micro-environment with inflammation and cancer that establishes it as a tumor suppressor gene. *Cancer Cell* 19, 470-483.

		Applications	Reactivity
	#4327 Phospho-AML1 (Ser249) Antibody	W, IP, IF-IC, F	H
<b>XP</b>	#4336 AML1 (D33G6) XP® Rabbit mAb	W, IHC-P, IF-IC, F	H, Mk
	#4334 AML1 Antibody	W, IF-IC, F	H, Mk
	#9115 Blimp-1/PRDI-BF1 (C14A4) Rabbit mAb	W, IP, IF-IC	H, M, (Mk)
	#3574 CD19 Antibody	W, IP, IF-IC, F	H, M
	#3528 CD31 (PECAM-1) (89C2) Mouse mAb	W, IP, IHC-P, IF-IC, F	H
	#5640 CD44 (8E2) Mouse mAb	W, IP, IF-IC, F	H, M, R
	#3570 CD44 (156-3C11) Mouse mAb	<b>AF</b> W, IP, IHC-P, IF-IC, F	H
	#5173 Phospho-CD79A (Tyr182) Antibody	W, IP, IF-IC, F	H, (M, R)
	#3351 CD79A Antibody	W, IF-IC	H
	#2593 Evi-1 (C50E12) Rabbit mAb	W, IP, IF-IC, F	H
<b>XP</b>	#4589 GATA-1 (D24E4) XP® Rabbit mAb	W, IP, IF-IC, F	H
<b>XP</b>	#3535 GATA-1 (D52H6) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R
<b>New XP</b>	#8714 Phospho-HS1 (Tyr397) (D12C1) XP® Rabbit mAb	W, IF-IC, F	H, (M, R)
<b>XP</b>	#3890 HS1 (D83A8) XP® Rabbit mAb (Human Specific)	W, IP, IHC-P, IF-IC, F	H
	#4814 IκBα (L35A5) Mouse mAb (Amino-terminal Antigen)	W, IP, IHC-P, IF-IC, F	H, M, R, Mk, B, Pg
	#5443 Ikaros Antibody	W, IP, IHC-P, IF-IC, F	H, M, R
<b>XP</b>	#3416 IKKε (D61F9) XP® Rabbit mAb	W, IP, IF-IC, F	M, R
<b>XP</b>	#4504 IRAK1 (D51G7) XP® Rabbit mAb	W, IP, IF-IC	H, M, Mk
	#4359 IRAK1 Antibody (Human Specific)	W, IF-IC	H, Mk
	#4367 IRAK2 Antibody	W, IF-IC	H, M, R, Mk
	#4369 IRAK-M Antibody	W, IF-IC	H, Mk
	#4964 IRF-4 Antibody	W, IP, IF-IC, F, ChIP	H
	#3257 IRF-5 Antibody	W, IP, IF-IC	H
<b>XP</b>	#3230 Jak2 (D2E12) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R, (Hm, Mk, C, X, B, Dg, Pg)
	#3753 JunB (C37F9) Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk
	#3746 JunB (G53) Antibody	W, IP, IF-IC	H
	#3755 JunB (P169) Antibody	W, IP, IF-IC	H, M, (R)
	#2088 LEDGF (C57G11) Rabbit mAb	W, IHC-P, IF-IC, F	H, M, R, (Mk)
	#3993 MAVS Antibody	W, IF-IC	H
	#4983 MAVS Antibody (Rodent Specific)	W, IP, IF-IC	M, R
<b>New XP</b>	#5861 NFAT1 (D43B1) XP® Rabbit mAb	W, IP, IF-IC, F	H, M
	#4389 NFAT1 Antibody	W, IP, IF-IC	H, M, (R)
	#3033 Phospho-NF-κB p65 (Ser536) (93H1) Rabbit mAb	W, IP, IF-IC, F	H, M, R, Hm, Mk, Pg, (Dg)
<b>New XP</b>	#8242 NF-κB p65 (D14E12) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, F, ChIP	H, M, R, Hm, Mk, Dg
	#4764 NF-κB p65 (C22B4) Rabbit mAb	W, IHC-P, IF-IC, F	H, M, R, Mk, B, (Dg)
<b>New</b>	#6956 NF-κB p65 (L8F6) Mouse mAb	W, IP, IHC-P, IF-IC, F, ChIP	H, M, R, Hm, Mk, Mi, B, Dg, Pg
	#3187 NQO1 (A180) Mouse mAb	W, IHC-P, IF-IC	H
<b>New XP</b>	#8970 PAX5 (D19F8) XP® Rabbit mAb	W, IP, IF-IC, F	H, M, (X)
	#4342 Pbx1 Antibody	W, IP, IF-IC	H, M, (R)
<b>XP</b>	#3550 PIAS1 (D33A7) XP® Rabbit mAb	W, IF-IC, F	H, M, R, Mk
<b>XP</b>	#4730 Pim-2 (D1D2) XP® Rabbit mAb	W, IP, IHC-P, IF-IC	H
	#2258 PU.1 (9G7) Rabbit mAb	W, IP, IHC-P, IF-IC, F, ChIP	H, M, (Mk, Pg)
	#2266 PU.1 Antibody	W, IP, IHC-P, IF-IC, F, ChIP	H, M, (Mk, Pg)
	#6960 RCAS1 Antibody	W, IP, IF-IC, F	H, M, R, Mk
	#4727 c-Rel Antibody	W, IP, IHC-P, IF-IC, F	H, Mk
<b>XP</b>	#5025 Phospho-RelB (Ser552) (D41B9) XP® Rabbit mAb	W, IP, IF-IC, F	H, M, (R, Mk, B, Dg)
	#4999 Phospho-RelB (Ser552) Antibody	W, IP, IF-IC, F	H, M, (R, Mk, B, Dg)
<b>XP</b>	#3493 RIP (D94C12) XP® Rabbit mAb	W, IP, IF-IC, F	H, M, R, Hm, Mk
<b>New</b>	#9167 Phospho-Stat1 (Tyr701) (58D6) Rabbit mAb <b>AF</b>	W, IP, IHC-P, IHC-F, IF-IC, F, ChIP	H, M
	#9177 Phospho-Stat1 (Ser727) Antibody	W, IF-IC, F, ChIP	H, M, R, (B)
<b>XP</b>	#9145 Phospho-Stat3 (Tyr705) (D3A7) XP® Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC, F, ChIP	H, M, R, Mk, (Hm, B, Pg)
	#9131 Phospho-Stat3 (Tyr705) Antibody	W, IP, IF-IC, ChIP	H, M, R, Mk, (C, B, Dg)
	#4113 Phospho-Stat3 (Tyr705) (M9C6) Mouse mAb	W, IP, IHC-P, IF-IC, F	H, M, R, Mk
	#9134 Phospho-Stat3 (Ser727) Antibody	W, IP, IF-IC, ChIP	H, M, R, (B)
	#9139 Stat3 (124H6) Mouse mAb	W, IP, IHC-P, IF-IC, F, ChIP	H, M, R, Mk
<b>XP</b>	#4322 Phospho-Stat5 (Tyr694) (D47E7) XP® Rabbit mAb	W, IP, IF-IC, F	H, M, (R, Mk, B)
	#9314 Phospho-Stat5 (Tyr694) (C71E5) Rabbit mAb	W, IHC-P, IF-IC, F	H, M, (R, Mk, B)

	Applications	Reactivity
#9361 Phospho-Stat6 (Tyr641) Antibody	W, IP, IF-IC, F	H, (B)
<b>XP</b> #5483 Phospho-TBK1/NAK (Ser172) (D52C2) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC, F	H, (M, R, Mk, X, B, Dg)
#5251 Phospho-TCTP (Ser46) Antibody	W, IHC-P, IF-IC, F	H, M, R, Mk
#4715 TRAF1 (45D3) Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, (Mk)
#4710 TRAF1 (1F3) Rat mAb	W, IP, IHC-P, IF-IC	H, M, R
#2701 Phospho-Zap-70 (Tyr319)/Syk (Tyr352) Antibody	W, IP, IF-IC, F	H, M
<b>XP</b> #3165 Zap-70 (D1C10E) XP <sup>®</sup> Rabbit mAb	W, IP, IF-F, F	H, M

#### Product References:

**#9145 Phospho-Stat3 (Tyr705) (D3A7) XP<sup>®</sup> Rabbit mAb:** Stairs, D.B. et al. (2011) Deletion of p120-catenin results in a tumor microenvironment with inflammation and cancer that establishes it as a tumor suppressor gene. *Cancer Cell* 19, 470-483.

**#9131 Phospho-Stat3 (Tyr705) Antibody:** Bartoli, M. et al. (2000) Vascular endothelial growth factor activates STAT proteins in aortic endothelial cells. *J. Biol. Chem.* 275, 33189-33192. / Guo, Z. et al. (2004) CDC91L1 (PIG-U) is a newly discovered oncogene in human bladder cancer. *Nat. Med.* 10, 374-381.

## Cytokines and Growth Factors

The world's highest quality antibody provider has now extended its expertise to Cytokine and Growth Factor production.

Cell Signaling Technology (CST) offers a growing selection of cytokines and growth factors. These reagents are produced and bioassayed in-house and are held to the same unparalleled quality standards as the CST<sup>™</sup> antibodies you know and trust.

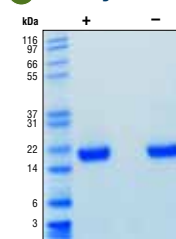
- ⚡ Produced and bioassayed in-house with the highest purity and bioactivity.
- ⚡ Comparison of multiple lots, stringent production specifications, and rigorous quality control ensure maximum lot-to-lot consistency.
- ⚡ Products are produced in the appropriate system to optimize natural folding and conformation.
- ⚡ Validation includes the use of CST antibodies to assess downstream signaling events.
- ⚡ Multi-milligram quantities always available.
- ⚡ Carrier or carrier-free formulation available.

#### Human Tumor Necrosis Factor- $\alpha$ (hTNF- $\alpha$ ) #8902:

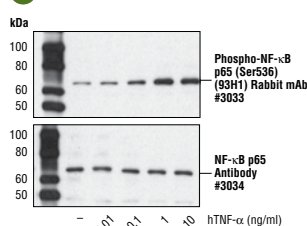
(A) 6  $\mu$ g reduced (+) and non-reduced (-) hTNF- $\alpha$ ; hTNF- $\alpha$  does not contain tags or additional amino acids. (B) Western blot analysis of HeLa cells treated with hTNF- $\alpha$  for 20 minutes. (C) The viability of L-929 cells treated with increasing amounts of hTNF- $\alpha$  in the presence of 2 ng/ml actinomycin D was determined. (D) HT-1080 cells were treated with increasing concentrations of hTNF- $\alpha$  to assess the effect on nuclear translocation of NF- $\kappa$ B, detected using NF- $\kappa$ B p65 (D14E12) XP<sup>®</sup> Rabbit mAb #8242. All data points were performed in triplicate to ensure validity and reproducibility of the assay. The signal was analyzed using an Acumen<sup>®</sup> eX<sup>2</sup>. Inset: Confocal IF analysis of HT-1080 cells, untreated (left) or treated with hTNF- $\alpha$  (20 ng/ml, 20 min; right), using NF- $\kappa$ B p65 (D14E12) XP<sup>®</sup> Rabbit mAb #8242 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

### Human Tumor Necrosis Factor- $\alpha$ (hTNF- $\alpha$ ) #8902 validation includes:

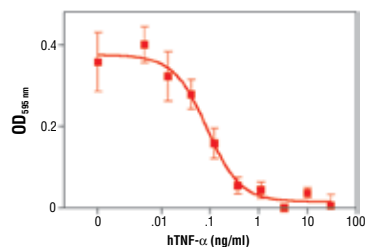
#### A Purity



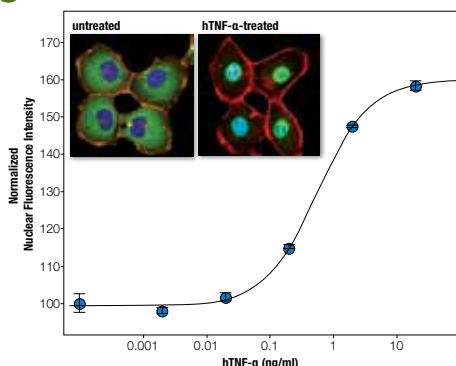
#### B Western Blot



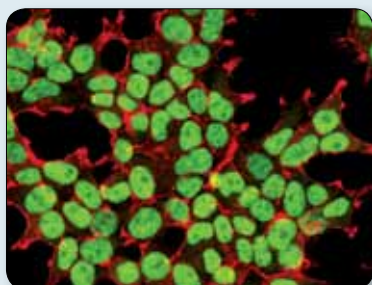
#### C Bioactivity



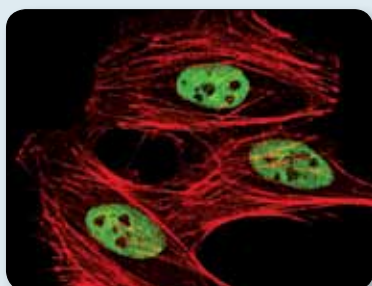
#### D Downstream Signaling



# Chromatin and Epigenetic Regulation



**CtBP1 (D2D6) Rabbit mAb #8684:** Confocal IF analysis of 293T cells using #8684 (green). Actin filaments were labeled with DY-554 phalloidin (red).



**DBC1 (3G4) Mouse mAb #5857:** Confocal IF analysis of HeLa cells using #5857 (green). Actin filaments were labeled with DY-554 phalloidin (red).

	Applications	Reactivity
#2990 ASF1A (C6E10) Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, Mk, (C, B)
#2902 ASF1B (C70E2) Rabbit mAb	W, IP, IF-IC	H, Mk
<b>XP</b> #5019 ASH2L (D93F6) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, (Dm)
<b>XP</b> #6964 Bmi1 (D20B7) XP® Rabbit mAb	W, IP, IF-IC, ChIP	H, Mk
#5856 Bmi1 (D42B3) Rabbit mAb	W, IP, IF-IC, ChIP	H, M, R, Mk
#3508 Brg1 (A52) Antibody	W, IF-IC	H, M, Mk, (R)
<b>New</b> #7389 CBP (D6C5) Rabbit mAb	W, IP, IF-IC, ChIP	H, M, R, Mk
#2187 Phospho-CENP-A (Ser7) Antibody	W, IP, IF-IC	H, (Mk)
#2048 CENP-A (C51A7) Rabbit mAb (Mouse Specific; IF Preferred)	W, IF-IC	M
#2186 CENP-A Antibody	W, IF-IC	H
<b>XP</b> #5480 CHAF1A (D77D5) XP® Rabbit mAb	W, IP, IF-IC	H, Mk
<b>New</b> #8684 CtBP1 (D2D6) Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, Mk
<b>XP</b> #3417 CTCF (D1A7) XP® Rabbit mAb	W, IP, IF-IC, ChIP	H, R, Mk, (B)
<b>XP</b> #3418 CTCF (D31H2) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, ChIP	H, M, R, Mk, (B)
#2899 CTCF Antibody	W, IP, IF-IC, ChIP	H, M, R, Mk
#4880 Phospho-DBC1 (Thr454) Antibody	W, IP, IF-IC	H
<b>New</b> #5693 DBC1 Antibody	W, IP, IF-IC	H, M, R, Mk
<b>New</b> #5857 DBC1 (3G4) Mouse mAb	W, IP, IF-IC	H, M, R, Mk
<b>XP</b> #5032 DNMT1 (D63A6) XP® Rabbit mAb	W, IF-IC	H, M, R, Mk, (Hm, B, Dg)
#2196 ESET (C1C12) Rabbit mAb	W, IP, IF-IC	H, Mk

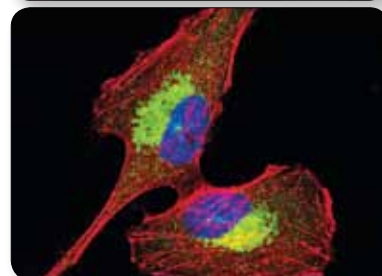
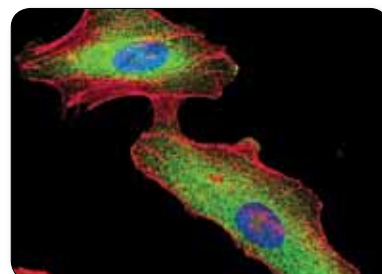
## HDAC6

HDAC6 is a class II histone deacetylase enzyme localized to the cytoplasm and associated with the microtubule network. It is involved in the regulation of many cellular processes, including cell migration, immune synapse formation, viral infection, and degradation of misfolded proteins. HDAC6 contains two tandem catalytic domains that facilitate the deacetylation of multiple protein substrates, including histones and non-histone proteins such as tubulin, cortactin, and HSP90.

Despite the ability to deacetylate histone proteins *in vitro*, there is no evidence for HDAC6-mediated deacetylation of histones *in vivo*. In addition to its role as a protein deacetylase, HDAC6 functions as a component of the aggresome, a proteinaceous inclusion body that forms in response to an accumulation of misfolded or partially denatured proteins. Formation of the aggresome is a protective response that sequesters cytotoxic protein aggregates for eventual autophagic clearance from the cell. HDAC6 contains a zinc finger ubiquitin-binding domain, allowing binding of both mono- and poly-ubiquitinated proteins and dynein motors, facilitating the transport of misfolded proteins to the aggresome.

HDAC6 is also required for subsequent recruitment of the autophagic machinery and clearance of aggresomes from the cell. Thus, researchers concluded that HDAC6 plays a key role in the protection against the deleterious effects of pathological protein aggregation that occurs in various diseases, such as neurodegenerative Huntington's disease.<sup>1</sup>

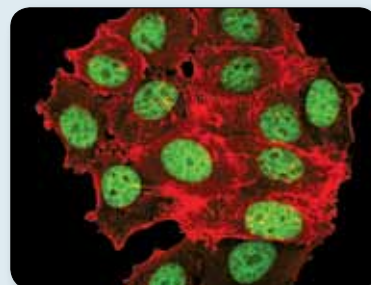
<sup>1</sup>Iwata, A. et al. (2005) *J. Biol. Chem.* 280, 40282-40292.



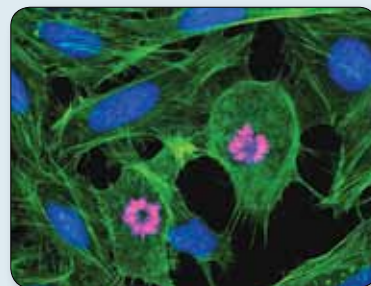
**HDAC6 (D2E5) Rabbit mAb #7558:** Confocal IF analysis of A549 cells, untreated (upper) or treated with MG132 (5 μM, 24 hr; lower), using #7558 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



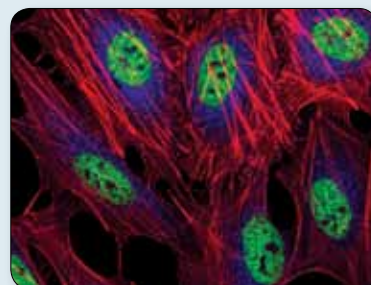
		Applications	Reactivity
<b>XP</b>	#5246 Ezh2 (D2C9) XP <sup>®</sup> Rabbit mAb	W, IP, IHC-P, IF-IC, ChIP	H, M, R, Mk
	#3147 Ezh2 (AC22) Mouse mAb	W, IF-IC	H, M, R, Mk
	#3306 G9a/EHMT2 (C6H3) Rabbit mAb	W, IF-IC	H, M, R, Mk, (B, Pg)
	#3305 GCN5L2 (C26A10) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, (B)
	#5356 HDAC1 (10E2) Mouse mAb	W, IP, IF-IC	H, M, R, Mk
	#2540 HDAC2 Antibody	W, IF-IC	H, M, R, Mk
	#5113 HDAC2 (3F3) Mouse mAb	W, IP, IF-IC	H, M, R, Mk
	#3815 Phospho-HDAC3 (Ser424) Antibody	W, IP, IHC-P, IF-IC	H, M, R, (Mk, C, X)
	#3949 HDAC3 (7G6C5) Mouse mAb	W, IP, IF-IC	H, M, R, Mk
<b>New</b>	#7558 HDAC6 (D2E5) Rabbit mAb	W, IP, IHC-P, IF-IC	H, Mk
	#9718 Phospho-Histone H2A.X (Ser139) (20E3) Rabbit mAb	<b>AF</b> W, IHC-P, IF-IC, F	H, M, R, Mk
	#2577 Phospho-Histone H2A.X (Ser139) Antibody	W, IHC-P, IF-IC, F	H, M, R
	#5438 Phospho-Histone H2A.X (Ser139/Tyr142) Antibody	W, IP, IF-IC, F	H, M, R, Mk
<b>New XP</b>	#7631 Histone H2A.X (D17A3) XP <sup>®</sup> Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk
	#2718 Histone H2A.Z Antibody	W, IP, IF-IC	H, M, R, Mk, Z, (C, X, B)
	#4827 MacroH2A1.2 Antibody	W, IF-IC	H, M, R, Mk, (C, B)
	#5410 Acetyl-Histone H2B (Lys12) Antibody	W, IP, IF-IC	H, M, R, Mk
	#5435 Acetyl-Histone H2B (Lys15) Antibody	W, IF-IC	H, M, R, Mk, (B, Pg)
	#9649 Acetyl-Histone H3 (Lys9) (C5B11) Rabbit mAb	<b>AF</b> W, IHC-P, IF-IC, F, ChIP	H, M, R, Mk, Z, (Sc)
	#4318 Acetyl-Histone H3 (Lys14) Antibody	W, IF-IC	H, M, R, Mk, (Dm, Ce)
<b>New XP</b>	#8173 Acetyl-Histone H3 (Lys27) (D5E4) XP <sup>®</sup> Rabbit mAb	W, IF-IC, ChIP	H, M, R, Mk, (Hm, X, Z)
	#4243 Acetyl-Histone H3 (Lys56) Antibody	W, IP, IF-IC	H, M, R, Mk
<b>XP</b>	#5326 Mono-Methyl-Histone H3 (Lys4) (D1A9) XP <sup>®</sup> Rabbit mAb	W, IF-IC, ChIP	H, M, R, Mk
	#9723 Mono-Methyl-Histone H3 (Lys4) Antibody	W, IP, IF-IC	H, M, R, Mk, (X, Z)
	#9725 Di-Methyl-Histone H3 (Lys4) (C64G9) Rabbit mAb	W, IP, IHC-P, IF-IC, ChIP	H, M, R, Mk
	#9726 Di-Methyl-Histone H3 (Lys4) Antibody	W, IP, IHC-P, IF-IC, ChIP	H, M, R, Mk, (X, Z)
	#9751 Tri-Methyl-Histone H3 (Lys4) (C42D8) Rabbit mAb	W, IHC-P, IF-IC, ChIP	H, M, R, Mk, Dm, Sc, (X, Z)
	#9727 Tri-Methyl-Histone H3 (Lys4) Antibody	W, IP, IHC-P, IF-IC, ChIP	H, M, R, Mk, (X, Z)
<b>XP</b>	#4658 Di-Methyl-Histone H3 (Lys9) (D85B4) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC, ChIP	H, M, R, Mk, (Dm, X, Z, B, Pg, Sc, Ce)
	#9753 Di-Methyl-Histone H3 (Lys9) Antibody	W, IP, IHC-P, IF-IC, ChIP	H, M, R, Mk, Dm, Sc
	#5327 Di/Tri-Methyl-Histone H3 (Lys9) (6F12) Mouse mAb	W, IP, IF-IC, ChIP	H, M, R, Mk
<b>XP</b>	#4473 Pan-Methyl-Histone H3 (Lys9) (D54) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC, ChIP	H, M, R, Mk, (C, Dm, X, Z, B, Pg, Sc, Ce)
	#4069 Pan-Methyl-Histone H3 (Lys9) Antibody	W, IP, IF-IC, ChIP	H, M, R, Mk, Z
<b>XP</b>	#9728 Di-Methyl-Histone H3 (Lys27) (D18C8) XP <sup>®</sup> Rabbit mAb	W, IF-IC, ChIP	H, M, R, Mk
	#9733 Tri-Methyl-Histone H3 (Lys27) (C36B11) Rabbit mAb	W, IP, IHC-P, IF-IC, ChIP	H, M, R, Mk, (X, Z)
	#2901 Di-Methyl-Histone H3 (Lys36) (C75H12) Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk
	#9763 Tri-Methyl-Histone H3 (Lys36) Antibody	W, IHC-P, IF-IC	H, M, R, Mk
<b>XP</b>	#3377 Phospho-Histone H3 (Ser10) (D2C8) XP <sup>®</sup> Rabbit mAb	<b>AF</b> W, IF-IC, F	H, M, R, Mk, Z
<b>XP</b>	#3642 Phospho-Histone H3 (Ser10) (D2C8) XP <sup>®</sup> Rabbit mAb (Biotinylated)	W, IF-F, IF-IC, F	H, M, R, Mk
	#9701 Phospho-Histone H3 (Ser10) Antibody	<b>AF</b> W, IP, IHC-P, IHC-F, IF-IC, F	H, M, R, Mk, C, Dm, Z, Sc, (X)
	#9706 Phospho-Histone H3 (Ser10) (6G3) Mouse mAb	W, IF-F, IF-IC, F	H, M, R



**Histone H2A.X (D17A3) XP<sup>®</sup> Rabbit mAb #7631:** Confocal IF analysis of MCF7 cells using #7631 (green). Actin filaments were labeled with DY-554 phalloidin (red).



**Phospho-Histone H3 (Ser10) (D2C8) XP<sup>®</sup> Rabbit mAb (Alexa Fluor<sup>®</sup> 594 Conjugate) #8481:** Confocal IF analysis of HeLa cells using #8481 (red). Actin filaments were labeled with Alexa Fluor<sup>®</sup> 488 phalloidin (green). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

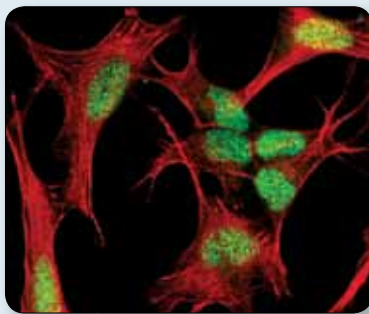


**Mono-Methyl-Histone H3 (Lys4) (D1A9) XP<sup>®</sup> Rabbit mAb #5326:** Confocal IF analysis of HeLa cells using #5326 (green) and MEK1/2 (L38C12) Mouse mAb #4694 (blue pseudocolor). Actin filaments were labeled with DY-554 phalloidin (red).

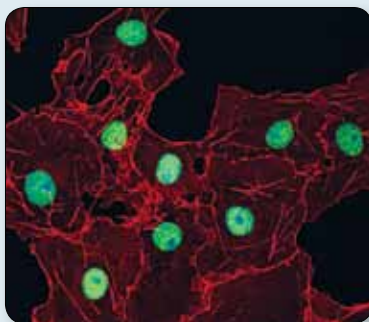
#### Product References:

- #2902 ASF1B (C70E2) Rabbit mAb:** Jasencakova, Z. et al. (2010) Replication stress interferes with histone recycling and predeposition marking of new histones. *Mol. Cell* 37, 736-743.
- #9719 Phospho-Histone H2A.X (Ser139) (20E3) Rabbit mAb (Alexa Fluor<sup>®</sup> 488 Conjugate):** Pei, X.Y. et al. (2011) Cytokinetically quiescent (G0/G1) human multiple myeloma cells are susceptible to simultaneous inhibition of Chk1 and MEK1/2. *Blood* 118, 5189-5200.
- #2577 Phospho-Histone H2A.X (Ser139) Antibody:** Tran, J.C. et al. (2011) Mapping intact protein isoforms in discovery mode using top-down proteomics. *Nature* 480, 254-258.

# Chromatin and Epigenetic Regulation Continued



**MeCP2 (D4F3) XP® Rabbit mAb #3456:** Confocal IF analysis of SH-SY5Y cells using #3456 (green). Actin filaments were labeled with DY-554 phalloidin (red).



**Menin (D45B1) XP® Rabbit mAb #6891:** Confocal IF analysis of COS-7 cells using #6891 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

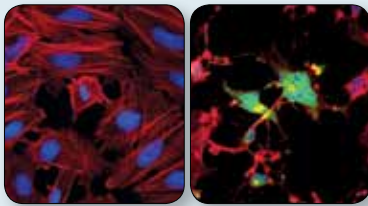
## Product References:

- #9701 Phospho-Histone H3 (Ser10) Antibody:** Li, J. et al. (2001) Transcriptional induction of MKP-1 in response to stress is associated with histone H3 phosphorylation-acetylation. *Mol. Cell. Biol.* 21, 8213-8224. / Li, T. et al. (2004) Failure to proliferate and mitotic arrest of CDK11(p110/p58)-null mutant mice at the blastocyst stage of embryonic cell development. *Mol. Cell. Biol.* 24, 3188-3197. / Cheung, C.H. et al. (2011) BPR1K653, a novel Aurora kinase inhibitor, exhibits potent anti-proliferative activity in MDR1 (P-gp170)-mediated multidrug-resistant cancer cells. *PLoS One* 6, e23485.
- #9706 Phospho-Histone H3 (Ser10) (6G3) Mouse mAb:** Kaitna, S. et al. (2002) The Aurora B Kinase AiR-2 regulates kinetochores during mitosis and is required for separation of homologous chromosomes during meiosis. *Curr. Biol.* 12, 798-812. / Crosio, C. et al. (2002) Mitotic phosphorylation of histone H3: spatio-temporal regulation by mammalian Aurora kinases. *Mol. Cell. Biol.* 22, 874-885.
- #9733 Tri-Methyl-Histone H3 (Lys27) (C36B11) Rabbit mAb:** Kim, K.Y. et al. (2011) Neuronal maturation defect in induced pluripotent stem cells from patients with Rett syndrome. *Proc. Natl. Acad. Sci. U.S.A.* 108, 14169-14174.
- #3625 NUT (C52B1) Rabbit mAb:** Yan, J. et al. (2011) Perturbation of BRD4 protein function by BRD4-NUT protein abrogates cellular differentiation in NUT midline carcinoma. *J. Biol. Chem.* 286, 27663-27675.

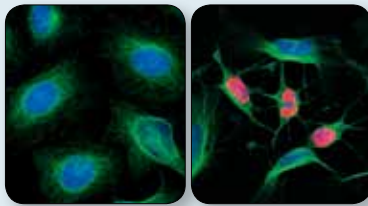
		Applications	Reactivity
	#9764 Phospho-Histone H3 (Thr11) Antibody	W, IP, IF-IC, F	H, M, R, (X)
	#9713 Phospho-Histone H3 (Ser28) Antibody	W, IP, IF-F, IF-IC, F	H, M, Hm, Dm, (R, C, X, Z, B)
<b>XP</b>	#4499 Histone H3 (D1H2) XP® Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk, (Hm, C, Dm, X, Z, B)
	#9672 Acetyl-Histone H4 (Lys5) Antibody	W, IP, IHC-P, IF-IC, ChIP	H, M, R, Mk, (C, Dm, X, Z, B, Pg, Ce)
	#3935 HMGB1 Antibody	W, IF-IC	H, M, R, Mk, (Hm, B, Pg)
<b>New</b>	#5692 HMGN1 Antibody	W, IF-IC	H, R, Mk, (B)
<b>New XP</b>	#9437 HMGN2 (D9B9) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, (B, Dg, Pg)
	#2623 HP1α (C7F11) Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk
	#2616 HP1α Antibody	W, IP, IHC-P, IF-IC, F	H, M, R, Mk, (B)
	#2600 Phospho-HP1γ (Ser83) Antibody	W, IP, IF-IC	H, M, R, Mk, (Dm, B)
	#2619 HP1γ Antibody	W, IP, IF-IC, F	H, M, R, Mk
	#3314 JMJD1B (C69G2) Rabbit mAb	W, IP, IF-IC	H, Mk
	#2621 JMJD1B/JHDM2B Antibody	W, IP, IF-IC	H, M, R, Mk
	#5377 JMJD1B (6A1-1F5) Mouse mAb	W, IP, IF-IC	H, M, R, Mk
	#5328 JMJD2A (C37E5) Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk
	#3393 JMJD2A (C70G6) Rabbit mAb	W, IP, IF-IC	H, M, R, (Mk)
	#2184 LSD1 (C69G12) Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC	H, M, R, Mk
	#2139 LSD1 Antibody	W, IP, IHC-P, IF-IC, F	H, M, R, Mk
<b>XP</b>	#3456 MeCP2 (D4F3) XP® Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk
<b>New XP</b>	#6891 Menin (D45B1) XP® Rabbit mAb	W, IF-IC	H, M, R, Mk, (B, Pg)
	#2823 MEP50 Antibody	W, IP, IF-IC	H
	#3625 NUT (C52B1) Rabbit mAb	W, IP, IHC-P, IF-F	H, R, (Mk)
<b>XP</b>	#3934 PHF20 (D96F6) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, (B)
	#2449 PRMT1 (A33) Antibody	W, IP, IF-IC	H, M, R, Mk, (B)
	#3379 PRMT4/CARM1 (C31G9) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
	#4321 RAD21 (D213) Antibody	W, IP, IF-IC	H, M, R, Mk, (C, B, Pg)
	#6882 RBAP46 (V415) Antibody	W, IP, IF-IC	H, M, R, Mk, (Pg)
<b>XP</b>	#5694 RING1B (D22F2) XP® Rabbit mAb	W, IP, IF-IC, ChIP	H, M, R, Mk
	#3650 SATB1 (L745) Antibody	W, IP, IF-IC	H, (Mk)
	#2813 SET7/SET9 Antibody	W, IF-IC	H, M, R, Mk
	#2996 SET8 (C18B7) Rabbit mAb	W, IF-IC	H, M, R, Mk, (B, Pg)
	#2493 SirT1 (D739) Antibody	W, IP, IF-IC	H, Mk
	#2028 SirT1 Antibody (Mouse Specific)	W, IP, IF-IC	M
<b>New</b>	#8469 SirT1 (1F3) Mouse mAb	W, IP, IF-IC	H, M, R, Mk
	#2590 SirT6 Antibody	W, IP, IF-IC	H
	#4029 Phospho-SMC1 (Ser360) Antibody	W, IF-IC	H, M, R, (Mk, C, X, B, Sc)
	#5696 SMC3 (D47B5) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, (C, X, Z, B)
<b>XP</b>	#5882 STAG2 (D25A4) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, (C, B, Pg)
<b>XP</b>	#3737 SUZ12 (D39F6) XP® Rabbit mAb	W, IP, IF-IC, ChIP	H, M, R, Mk
	#5868 TIF1β (4E1) Mouse mAb	W, IF-IC	H

Unparalleled Product Quality, Validation, and Technical Support

# Apoptosis



**Cleaved Caspase-3 (Asp175) (D3E9) Rabbit mAb #9579:** Confocal IF analysis of HeLa cells, untreated (left) or treated with Staurosporine #9953 (1  $\mu$ M, 4 hr; right), using #9579 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).



**Cleaved PARP (Asp214) (D64E10) XP<sup>®</sup> Rabbit mAb (Alexa Fluor<sup>®</sup> 555 Conjugate) #6894:** Confocal IF analysis of HeLa cells, untreated (left) or treated with Staurosporine #9953 (right) using #6894 (red) and  $\alpha$ -Tubulin (DM1A) Mouse mAb #3873 (green). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

## Product References:

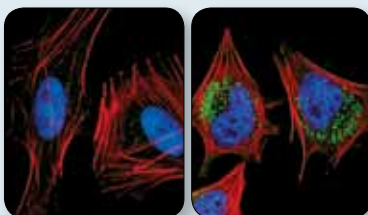
**#9669 Cleaved Caspase-3 (Asp175) Antibody (Alexa Fluor<sup>®</sup> 488 Conjugate):** Pei, X.Y. et al. (2011) Cytokinetically quiescent (G0/G1) human multiple myeloma cells are susceptible to simultaneous inhibition of Chk1 and MEK1/2. *Blood* 118, 5189-5200.

**#9507 Cleaved Caspase-9 (Asp353) Antibody (Rat Specific):** Sánchez-Gómez, M.V. et al. (2003) Caspase-dependent and caspase-independent oligodendrocyte death mediated by AMPA and kainate receptors. *J. Neurosci.* 23, 9519-9528.

**#9544 Cleaved PARP (Asp214) Antibody (Mouse Specific):** Garnier, P. et al. (2003) Ischemic preconditioning by caspase cleavage of poly(ADP-ribose) polymerase-1. *J. Neurosci.* 23, 7967-7973.

	Applications	Reactivity
#4934 Acinus Antibody	W, IF-IC	H, M, R, Mk
<b>XP</b> #5318 AIF (D39D2) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, (B, Dg)
#4642 AIF Antibody	W, IP, IHC-P, IF-IC	H, M, R
#2300 Aven Antibody	W, IF-IC, F	H, M, R, Mk
#2827 Phospho-Bcl-2 (Ser70) (5H2) Rabbit mAb	W, IF-IC, F	H
#2764 Bcl-xL (54H6) Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC, F	H, M, R, Mk
#2933 Bim (C34C5) Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R, (Mk, B, Dg)
#2819 Bim Antibody	W, IP, IF-IC, F	H, M, R, (Mk)
<b>New</b> #9579 Cleaved Caspase-3 (Asp175) (D3E9) Rabbit mAb	IHC-P, IF-IC, F	H, (M, R, Mk, B, Pg)
#9664 Cleaved Caspase-3 (Asp175) (5A1E) Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC, F	H, M, R, Mk, (Dg)
#9661 Cleaved Caspase-3 (Asp175) Antibody	<b>AF</b> W, IHC-P, IHC-F, IF-IC, F	H, M, R, Mk, (B, Dg, Pg)
<b>New</b> #8592 Cleaved Caspase-8 (Asp387) (D5B2) XP <sup>®</sup> Rabbit mAb (Mouse Specific)	W, IP, IF-IC, F	M
<b>XP</b> #9496 Cleaved Caspase-8 (Asp391) (18C8) Rabbit mAb	W, IHC-P, IF-IC, F	H
#9509 Cleaved Caspase-9 (Asp353) Antibody (Mouse Specific)	W, IF-IC	M
#9507 Cleaved Caspase-9 (Asp353) Antibody (Rat Specific)	W, IF-IC	R
#4533 Daxx (25C12) Rabbit mAb	W, IF-IC	H, M, R, (Mk, B, Dg)
<b>New</b> #8023 Fas (4C3) Mouse mAb	W, IP, IF-IC, F	H
#2035 Cleaved Lamin A (Small Subunit) Antibody	W, IHC-P, IF-IC	H, M, R
#2036 Cleaved Lamin A (Small Subunit) (30H5) Mouse mAb	W, IF-IC	H, M, R
#2026 Phospho-Lamin A/C (Ser22) Antibody	W, IF-IC	H, M, R
#4777 Lamin A/C (4C11) Mouse mAb	W, IP, IHC-P, IF-F, IF-IC, F	H, M, R, Mk
#5369 LAP2 $\alpha$ (3A3) Mouse mAb	W, IF-IC	H, Mk
<b>XP</b> #5471 Livin (D61D1) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H
#4739 Max (S20) Antibody	W, IF-IC	H, M, R, (Mk, B)
<b>XP</b> #5605 c-Myc (D84C12) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC, F	H, M, R, (Mk, Dg, Pg)
<b>XP</b> #3960 Nur77 (D63C5) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC, F	H, (Mk)
#2328 PAR-4 Antibody	W, IP, IF-IC, F	H, M, R, Mk
<b>XP</b> #5625 Cleaved PARP (Asp214) (D64E10) XP <sup>®</sup> Rabbit mAb	<b>AF</b> W, IP, IHC-P, IF-IC, F	H, Mk
#9541 Cleaved PARP (Asp214) Antibody (Human Specific)	W, IHC-P, IF-IC, F	H
#9544 Cleaved PARP (Asp214) Antibody (Mouse Specific)	W, IF-IC	M
#9532 PARP (46D11) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
<b>XP</b> #9535 PDCD4 (D29C6) XP <sup>®</sup> Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R
#3693 Perforin Antibody (Mouse Specific)	W, IF-IC, F	M
#2954 Smac/Diablo Mouse mAb	W, IP, IHC-P, IF-IC	H, Mk
#2808 Survivin (71G4B7) Rabbit mAb	<b>AF</b> W, IP, IHC-P, IHC-F, IF-IC, F	H, M, R
#3219 TRAIL (C92B9) Rabbit mAb	W, IP, IHC-P, IF-IC, F	H

# Autophagy



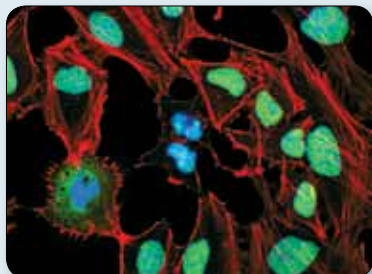
**LC3B (D11) XP<sup>®</sup> Rabbit mAb #3868:** Confocal IF analysis of HeLa cells, untreated (left) or chloroquine-treated (right), using #3868 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

	Applications	Reactivity
#2010 Atg12 Antibody (Human Specific)	W, IP, IF-IC	H
#2011 Atg12 Antibody (Mouse Specific)	W, IP, IF-IC	M
<b>New</b> #8089 Atg16L1 (D6D5) Rabbit mAb	W, IP, IF-IC	H, M, R, (Mk)
<b>XP</b> #4599 LC3A (D50G6) XP <sup>®</sup> Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R, (Mk, Dg)
#4108 LC3A/B Antibody	W, IF-IC, F	H, M, R, (Mk, C, X, Z, Dg)
<b>XP</b> #3868 LC3B (D11) XP <sup>®</sup> Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R, (Mk, B, Pg)
#2775 LC3B Antibody	W, IF-IC, F	H, M, R, (Mk, B, Pg)
<b>New</b> #7695 SQSTM1/p62 (D10E10) Rabbit mAb (IF Preferred)	IP, IF-IC	H

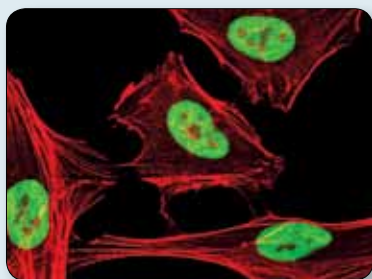
## Product References:

**#2775 LC3B Antibody:** Deuretzbacher, A. et al. (2009) Beta1 integrin-dependent engulfment of Yersinia enterocolitica by macrophages is coupled to the activation of autophagy and suppressed by type III protein secretion. *J. Immunol.* 183, 5847-5860. / Wen, H. et al. (2011) Fatty acid-induced NLRP3-ASC inflammasome activation interferes with insulin signaling. *Nat. Immunol.* 12, 408-415.

# Translational Control



**DDX5 (D15E10) XP® Rabbit mAb #9877:** Confocal IF analysis of HeLa cells using #9877 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**hnRNP A0 (D8A3) XP® Rabbit mAb #5545:** Confocal IF analysis of HeLa cells using #5545 (green). Actin filaments were labeled with DY-554 phalloidin (red).

## Product References:

**#2332 eEF2 Antibody:** Kimball, S. R. et al. (2003) Mammalian stress granules represent sites of accumulation of stalled translation initiation complexes. *Am. J. Physiol. Cell Physiol.* 284, 273-284.

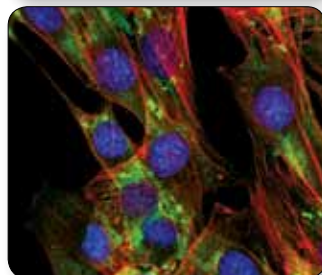
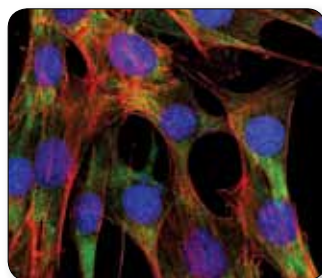
	Applications	Reactivity
#2855 Phospho-4E-BP1 (Thr37/46) (236B4) Rabbit mAb	W, IHC-P, IF-IC, F	H, M, R, Mk, Dm
#9644 4E-BP1 (53H11) Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R, Mk
#2119 BRF1/2 Antibody	W, IF-IC, F	H, M, R, Mk, (C, B)
#2679 Calnexin (C5C9) Rabbit mAb	W, IHC-P, IF-IC	H, Mk
#2433 Calnexin Antibody	W, IHC-P, IF-IC	H
#3256 CLK3 Antibody	W, IF-IC	H, M, R, Mk
<b>New XP</b> #9877 DDX5 (D15E10) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, (B)
#9407 DDX6/RCK Antibody	W, IF-IC, F	H, M, R, Mk
#2548 EDC4/Ge-1 Antibody	W, IP, IF-IC	H, M, Mk
#2551 eEF1A Antibody	W, IF-IC	H, M, R, Mk
#2332 eEF2 Antibody	W, IF-IC	H, M, R, Mk, Dm, (Hm, C)
#3692 eEF2k Antibody	W, IP, IF-IC	H, R, Mk
<b>XP</b> #3411 eIF3A (D51F4) XP® Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk
#2538 eIF3A Antibody	W, IP, IF-IC	H, M, R, Mk
<b>XP</b> #3413 eIF3H (D9C1) XP® Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk
#2490 eIF4A1 Antibody	W, IF-IC	H, M, R, Mk
#5399 Phospho-eIF4B (Ser406) Antibody	W, IP, IF-IC	H, M, (R)
#2441 Phospho-eIF4G (Ser1108) Antibody	W, IP, IF-IC	H, M, R, Hm, Mk, B
#2469 eIF4G (C45A4) Rabbit mAb	W, IHC-P, IF-IC, F	H, M, R, Mk
#2498 eIF4G Antibody	W, IHC-P, IF-IC, F	H, M, R, Mk
#2858 eIF4GI Antibody	W, IHC-P, IF-IC	H, M, R
<b>XP</b> #5169 eIF4G/p97 (D88B6) XP® Rabbit mAb	W, IP, IF-IC, F	H, M, R, Mk
<b>XP</b> #3469 eIF4H (D85F2) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
#2444 eIF4H Antibody	W, IF-IC	H, M, R, Mk
<b>XP</b> #3833 eIF6 (D16E9) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
#3263 eIF6 Antibody	W, IP, IHC-P, IF-IC	H, M, R
<b>XP</b> #5033 ERp72 (D70D12) XP® Rabbit mAb	W, IF-IC, F	H, M, R, Mk
<b>New</b> #7104 FMRP (D14F4) Rabbit mAb	W, IF-IC	H, M, R, Mk
#4317 FMRP Antibody	W, IP, IF-IC	H, M, R, Mk
<b>New</b> #7098 FXR2 (D85D6) Rabbit mAb	W, IF-IC	H, M, R, Mk
<b>XP</b> #3593 Grp75 (D13H4) XP® Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, Mk
#2816 Grp75 Antibody	W, IF-IC	H, M, R, Mk

## Fragile X

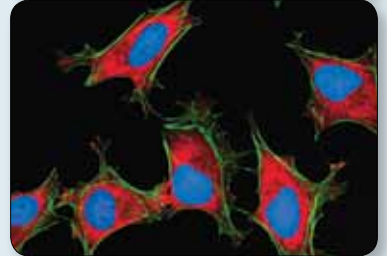
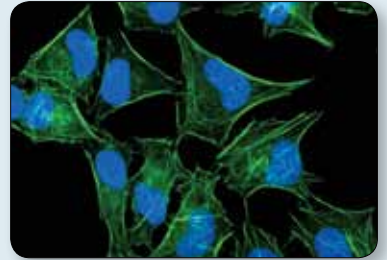
Fragile X syndrome, which research literature has shown to be a frequent cause of inherited mental retardation, often results from expansion of the CGG trinucleotide repeat in the gene that encodes the Fragile X mental retardation protein (FMRP).<sup>1</sup> FMRP (also known as FMR1) and its two autosomal homologs (FXR1 and FXR2) all bind RNA and play a role in the pathogenesis of Fragile X syndrome. In addition, these related proteins can associate with one another and form homodimers. FMRP can act as a translation regulator and is a component of RNAi effector complexes (RISC), suggesting a role in gene silencing. In *Drosophila*, dFMRP associates with Argonaute 2 (Ago2) and Dicer and coimmunoprecipitates with miRNA and siRNA. These results suggest that Fragile X syndrome is related to abnormal translation caused by a defect in RNAi-related pathways. In addition, FMRP, FXR1, and FXR2 are components of stress granules (SG) and have been implicated in the translational regulation of mRNAs.

<sup>1</sup> Verkerk, A.J. et al. (1991) *Cell* 65, 905-914.

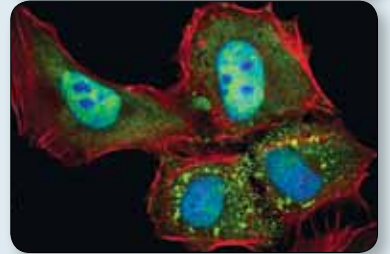
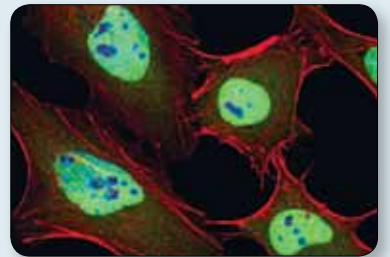
**FMRP Antibody #4317:** Confocal IF analysis of C2C12 cells, untreated (upper) or MG-132-treated (10 µg/mL, 3 hr; lower), using #4317 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



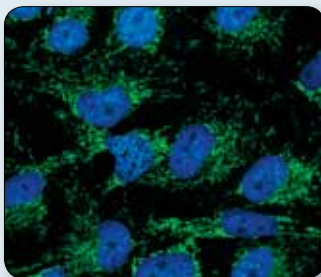
		Applications	Reactivity
<b>New XP</b>	#5545 hnRNP A0 (D8A3) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC, F	H, M, R, Mk
	#4046 hnRNP A0 Antibody	W, IP, IF-IC	H, M, R, Mk
<b>New</b>	#8443 hnRNP A1 (D21H11) Rabbit mAb	W, IP, IF-IC, F	H, M, R, Mk
	#4296 hnRNP A1 (K350) Antibody	W, IP, IF-IC	H, M, R, Mk
	#5380 hnRNP A1 (R196) Antibody	W, IP, IF-IC	H, M, R, Mk
	#4675 hnRNP K (R332) Antibody	W, IP, IF-IC, F	H, M, R, Mk
<b>XP</b>	#3434 Hydroxy-HIF-1 $\alpha$ (Pro564) (D43B5) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, (M, R, Mk, C, X, Z, Pg)
	#3414 HIF-1 $\beta$ /ARNT (C15A11) Rabbit mAb	W, IP, IF-IC	H, Mk
	#3718 HIF-1 $\beta$ /ARNT Antibody	W, IF-IC	H, M, R, Mk
	#5681 IWS1 Antibody	W, IP, IF-IC	H, M, R
<b>New</b>	#8047 KEAP1 (D6B12) Rabbit mAb	W, IF-IC	H, M, R, (Mk, B, Pg)
<b>New XP</b>	#8975 LAMTOR1/C11orf59 (D11H6) XP <sup>®</sup> Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk
<b>XP</b>	#2066 MRPL11 (D68F2) XP <sup>®</sup> Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk
<b>XP</b>	#5536 Phospho-mTOR (Ser2448) (D9C2) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, Mk, (R)
	#2983 mTOR (7C10) Rabbit mAb	W, IHC-P, IF-IC, F	H, M, R, Mk
	#3505 Asymmetric-Methyl-PABP1 (Arg455/Arg460) (C60A10) Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk, (C)
	#3501 PDI (C81H6) Rabbit mAb	<b>AF</b> W, IHC-P, IF-IC	H, M, R, Mk
	#2446 PDI Antibody	W, IHC-P, IF-IC	H, M, R, Mk
	#3072 PKR Antibody	W, IP, IF-IC	H
	#9480 RagC (D8H5) Rabbit mAb	W, IP, IF-IC, F	H, M, R, Mk
	#3360 RagC Antibody	W, IP, IF-IC	H, M, R, Mk
	#6960 RCAS1 Antibody	W, IP, IF-IC, F	H, M, R, Mk
	#2415 Ribosomal Protein L7a (E109) Antibody	W, IF-IC	H, M, R, Mk
<b>XP</b>	#9538 Ribosomal Protein S3 (D50G7) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
	#2579 Ribosomal Protein S3 Antibody	W, IF-IC	H, M, R, Mk
<b>XP</b>	#4858 Phospho-S6 Ribosomal Protein (Ser235/236) (D57.2.2E) XP <sup>®</sup> Rabbit mAb	<b>AF</b> W, IHC-P, IHC-F, IF-IC, F	H, M, R, Mk, Sc, (C)
	#4856 Phospho-S6 Ribosomal Protein (Ser235/236) (2F9) Rabbit mAb	<b>AF</b> W, IF-IC, F	H, M, R
	#4857 Phospho-S6 Ribosomal Protein (Ser235/236) (91B2) Rabbit mAb	W, IHC-P, IHC-F, IF-IC	H, M, R
	#2211 Phospho-S6 Ribosomal Protein (Ser235/236) Antibody	W, IP, IHC-P, IHC-F, IF-IC, F	H, M, R, Mk, Sc, (C, X)
<b>XP</b>	#5364 Phospho-S6 Ribosomal Protein (Ser240/244) (D68F8) XP <sup>®</sup> Rabbit mAb	<b>AF</b> W, IP, IHC-P, IF-IC, F	H, M, R, Mk
	#2217 S6 Ribosomal Protein (5G10) Rabbit mAb	W, IHC-P, IF-F, IF-IC	H, M, R, Mk
	#2317 S6 Ribosomal Protein (54D2) Mouse mAb	<b>AF</b> W, IP, IHC-P, IF-IC, F	H, M, R, Mk, Dm
<b>XP</b>	#5439 SKAR $\alpha/\beta$ (D65E8) XP <sup>®</sup> Rabbit mAb	W, IF-IC	H, M, R, Mk
<b>New XP</b>	#8509 TIAR (D32D3) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC, F	H, M, R, Mk
<b>New</b>	#8611 TIAR (D26E4) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
	#5137 TIAR Antibody	W, IP, IF-IC	H, M, R, Mk



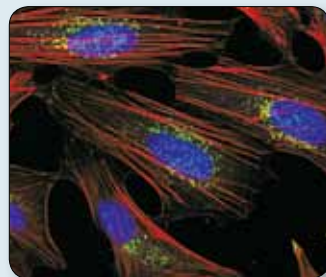
**Phospho-S6 Ribosomal Protein (Ser235/236) (D57.2.2E) XP<sup>®</sup> Rabbit mAb (Alexa Fluor<sup>®</sup> 594 Conjugate) #9865:** Confocal IF analysis of HeLa cells, treated with LY294002 #9901, Rapamycin #9904, and U0126 #9903 (upper), or with insulin (lower) using #9865 (red). Actin filaments were labeled with Alexa Fluor<sup>®</sup> 488 phalloidin (green). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).



**TIAR (D32D3) XP<sup>®</sup> Rabbit mAb #8509:** Confocal IF analysis of HeLa cells, untreated (upper) or UV-treated (lower), using #8509 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).



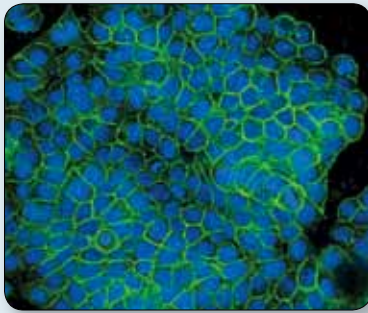
**KEAP1 (D6B12) Rabbit mAb #8047:** Confocal IF analysis of OVCAR8 cells using #8047 (green). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).



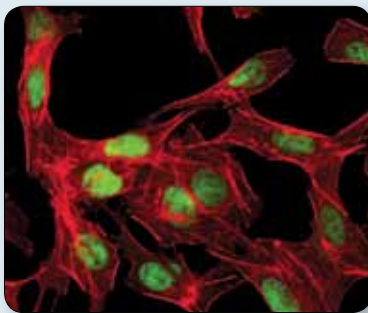
**LAMTOR1/C11orf59 (D11H6) XP<sup>®</sup> Rabbit mAb #8975:** Confocal IF analysis of HeLa cells using #8975 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

Unparalleled Product  
Quality, Validation, and  
Technical Support

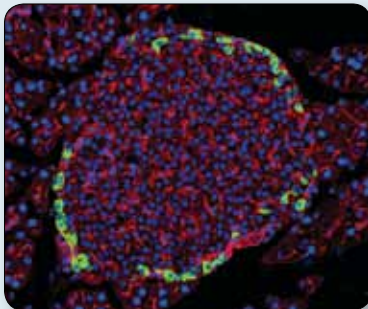
# Cellular Metabolism



**ASCT2 (D7C12) Rabbit mAb #8057:** Confocal IF analysis of HT-29 cells using #8057 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**FoxA2/HNF3β (D56D6) XP® Rabbit mAb #8186:** Confocal IF analysis of Hep G2 cells using #8186 (green). Actin filaments were labeled with DY-554 phalloidin (red).



**Glucagon (D16G10) XP® Rabbit mAb #8233:** Confocal IF analysis of mouse pancreas using #8233 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

## Product References:

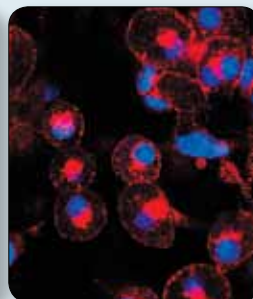
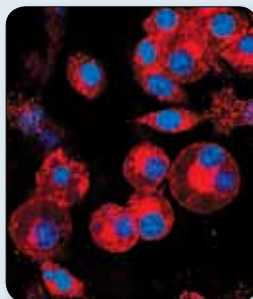
**#2295 C/EBPα Antibody:** Loo, L.H. et al. (2009) Heterogeneity in the physiological states and pharmacological responses of differentiating 3T3-L1 preadipocytes. *J. Cell Biol.* 187, 375-384.

**#4844 COX IV Antibody:** Endo, H. et al. (2006) Mitochondrial translocation of p53 underlies the selective death of hippocampal CA1 neurons after global cerebral ischaemia. *Biochem. Soc. Trans.* 34, 1283-1286.

**#4137 Phospho-HSL (Ser565) Antibody:** Loo, L.H. et al. (2009) Heterogeneity in the physiological states and pharmacological responses of differentiating 3T3-L1 preadipocytes. *J. Cell Biol.* 187, 375-384.

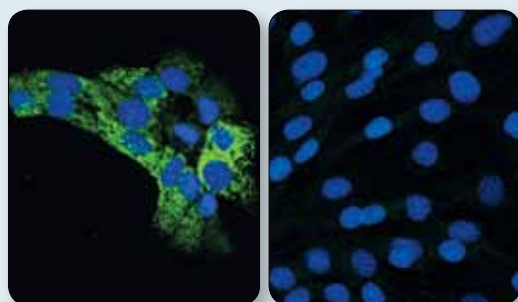
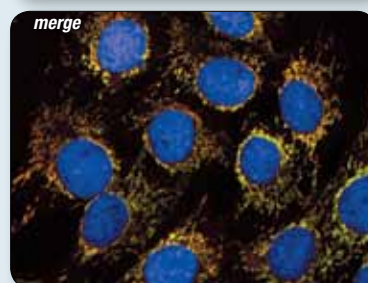
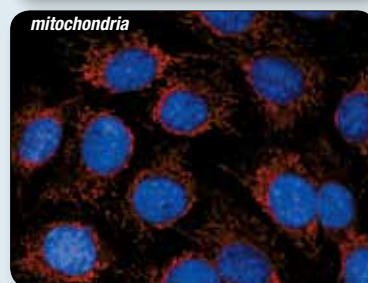
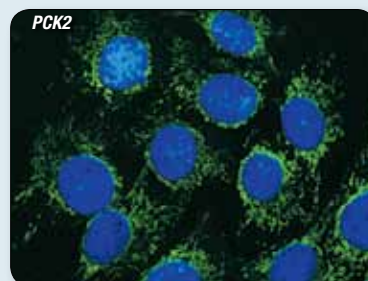
**#4107 HSL Antibody:** Loo, L.H. et al. (2009) Heterogeneity in the physiological states and pharmacological responses of differentiating 3T3-L1 preadipocytes. *J. Cell Biol.* 187, 375-384.

	Applications	Reactivity
#3676 Acetyl-CoA Carboxylase (C83B10) Rabbit mAb	W, IHC-P, IF-IC, F	H, M, R, Hm
#3662 Acetyl-CoA Carboxylase Antibody	W, IP, IHC-P, IF-IC, F	H, M, R, Mk, B, (C, Dm)
#4190 Acetyl-CoA Carboxylase 1 Antibody	W, IP, IF-IC	H, M, R
<b>New</b> #6922 ACO2 Antibody	W, IF-IC	H, M, R, Mk
#3207 AMACR (2A10) Mouse mAb	W, IP, IF-IC	H, M
#4150 AMPKβ1/2 (57C12) Rabbit mAb	W, IHC-P, IF-IC, F	H, M, R, Hm, Mk
<b>New</b> #8057 ASCT2 (D7C12) Rabbit mAb	W, IP, IF-IC, F	H, M, Mk
#5345 ASCT2 (V501) Antibody	W, IP, IF-IC, F	H, M, R
#2439 ATGL (30A4) Rabbit mAb	W, IP, IHC-P, IF-IC	M
#2138 ATGL Antibody	W, IP, IHC-P, IF-IC	M, (R)
#2295 C/EBPα Antibody	W, IF-IC	H, M, R
#2895 CHOP (L63F7) Mouse mAb	W, IP, IF-IC	H, M, R
#4850 COX IV (3E11) Rabbit mAb	<b>AF</b> W, IP, IHC-P, IHC-F, IF-IC, F	H, R, Mk, Z, B, Pg
#4844 COX IV Antibody	W, IP, IHC-P, IF-IC, F	H, M, R, Mk, B
<b>XP</b> #3544 FABP4 (D25B3) XP® Rabbit mAb	W, IP, IF-IC	M, (H)
#3180 Fatty Acid Synthase (C20G5) Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC	H, M, R, (B)
<b>New</b> #8186 FoxA2/HNF3β (D56D6) XP® Rabbit mAb	W, IP, IF-IC	H, M, R
<b>XP</b>		
#3143 FoxA2/HNF3β Antibody	W, IP, IF-IC	H, (M, R)
<b>XP</b> #5174 GAPDH (D16H11) XP® Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk
#2118 GAPDH (14C10) Rabbit mAb	<b>AF</b> W, IHC-P, IF-IC, F	H, M, R, Mk
#5014 GAPDH (14C10) Rabbit mAb (Biotinylated)	W, IF-IC, F	H, M, R, Mk
<b>New</b> #8233 Glucagon (D16G10) XP® Rabbit mAb	IHC-P, IHC-F, IF-F	H, M, R
<b>XP</b>		
#2760 Glucagon Antibody	IHC-P, IHC-F, IF-F	H, M, R
#2024 Hexokinase I (C35C4) Rabbit mAb	<b>AF</b> W, IP, IHC-P, IF-IC	H, M
#2867 Hexokinase II (C64G5) Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk
#3113 HNF4α (C11F12) Rabbit mAb	W, IHC-P, IF-IC	H
#4139 Phospho-HSL (Ser563) Antibody	W, IF-IC	M, (H, R)
#4137 Phospho-HSL (Ser565) Antibody	W, IF-IC	M, (H, R)
#4126 Phospho-HSL (Ser660) Antibody	W, IF-IC	M, R
#4107 HSL Antibody	W, IP, IF-IC	M, (H)
#3014 Insulin (C27C9) Rabbit mAb	IHC-P, IF-F, IF-IC, F	H, M, R
#4590 Insulin Antibody	IHC-P, IF-F, IF-IC, F	H, M, R
<b>New</b> #6918 IRAP (D7C5) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
<b>XP</b>		
#3808 IRAP Antibody	W, IP, IF-IC	H, M, (R)
<b>New</b> #9876 IRAP (3E1) Mouse mAb	W, IF-IC	M, (R)
#3582 LDHA (C4B5) Rabbit mAb	W, IHC-P, IF-IC	H, Mk
#5195 Lipin 1 Antibody	W, IP, IF-IC	H, M
#4446 MRP2 (R260) Antibody	W, IP, IF-IC	H



**IRAP (D7C5) XP® Rabbit mAb #6918:** Confocal IF analysis of differentiated 3T3-L1 cells, treated with LY294002 (50 μM, 2 hr; left) or insulin (100 nM, 30 min; right) using #6918 (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

	Applications	Reactivity
<b>New</b> #6924 PCK2 Antibody	W, IP, IF-IC	H, M, R, Mk
<b>XP</b> #5679 Pdx1 (D59H3) XP® Rabbit mAb	W, IP, IF-IC	R, (H)
#2437 Pdx1 Antibody	W, IP, IF-F, IF-IC	M, R, (H)
#4593 C-Peptide Antibody	IHC-P, IHC-F, IF-F, IF-IC	H, M, R
<b>XP</b> #9349 Perilipin (D1D8) XP® Rabbit mAb	W, IP, IHC-P, IF-F, IF-IC	H, M
#3470 Perilipin (D418) Antibody	W, IHC-P, IF-IC	M, (H)
#3467 Perilipin (K117) Antibody	W, IF-IC	M, (H, Pg)
#3190 PKM1/2 (C103A3) Rabbit mAb	W, IF-IC	H, M, R, Mk
<b>XP</b> #4053 PKM2 (D78A4) XP® Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk
#2784 Pyruvate Dehydrogenase Antibody	W, IF-IC	H, M, R, Mk
#2794 SCD1 (C12H5) Rabbit mAb	W, IP, IHC-P, IF-IC	M
#2438 SCD1 (M38) Antibody	W, IF-IC	M, (H)
#2283 SCD1 (R347) Antibody	W, IF-IC	M, (H)
#5839 SDHA Antibody	W, IF-IC	H, M, R, Mk
<b>New</b> #8449 StAR (D10H12) XP® Rabbit mAb	W, IP, IF-IC	H, M, R
<b>XP</b>		
<b>New</b> #8071 Succinyl-CoA Synthetase (D8A11) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk



**StAR (D10H12) XP® Rabbit mAb #8449:** Confocal IF analysis of MLTC-1 (left) and C2C12 (right) cells using #8449 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

**PCK2 Antibody #6924:** Confocal IF analysis of C2C12 cells using #6924 (green) showing colocalization with mitochondria that were labeled with MitoTracker® Red CMXRos (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

## Perilipin

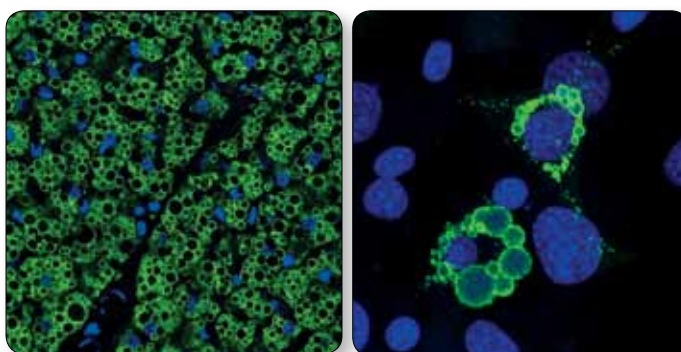
Triacylglycerol is stored in lipid droplets as a primary energy reserve. Perilipin is localized at the periphery of lipid droplets and serves as a protective coating against lipases. Research evidence suggests that PKA regulates lipolysis by phosphorylating perilipin.<sup>1-4</sup> Phosphorylation of perilipin results in the conformational change that exposes lipid droplets to endogenous lipases, such as hormone-sensitive lipases. Hence, perilipin plays a pivotal role in lipid storage.

<sup>1</sup> Greenberg, A.S. et al. (1991) *J. Biol. Chem.* 266, 11341-11346.

<sup>2</sup> Brasaemle, D.L. (2007) *J. Lipid Res.* 48, 2547-2559.

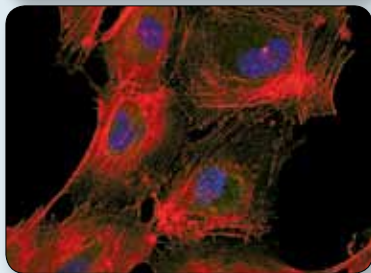
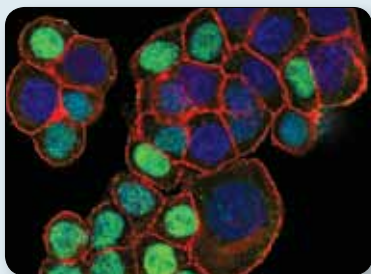
<sup>3</sup> Egan, J.J. et al. (1990) *J. Biol. Chem.* 265, 18769-18775.

<sup>4</sup> Brasaemle, D.L. et al. (2009) *Mol. Cell Biochem.* 326, 15-21.

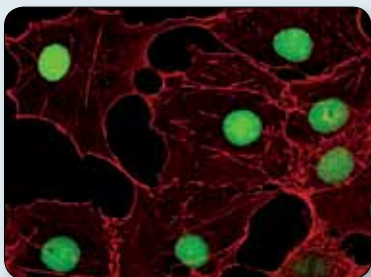


**Perilipin (D1D8) XP® Rabbit mAb #9349:** Confocal IF analysis of frozen mouse brown adipose tissue (left) and 3T3-L1 adipocytes (right) using #9349 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

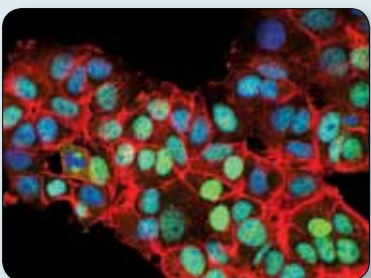
# Cell Cycle, Checkpoint Control, and DNA Damage



**CDT1 (D10F11) Rabbit mAb #8064:** Confocal IF analysis of HT-29 (upper) and HUVE (lower) cells using #8064 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**MCM7 (D10A11) XP® Rabbit mAb #3735:** Confocal IF analysis of COS-7 cells using #3735 (green). Actin filaments were labeled with DY-554 phalloidin (red).



**NuMA (D49H4) Rabbit mAb #8967:** Confocal IF analysis of MCF7 cells using #8967 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

	Applications	Reactivity
#2675 Phospho-53BP1 (Ser1778) Antibody	W, IF-IC, F	H, Mk
#4937 53BP1 Antibody	W, IHC-P, IF-IC	H, Mk
#4128 Ape1 Antibody	W, IF-F, IF-IC	H, M, R, (Mk)
#2737 ATRIP Antibody	W, IP, IF-IC	H
#3079 Phospho-Aurora A (Thr288) (C39D8) Rabbit mAb	W, IF-IC	H
<b>XP</b> #2914 Phospho-Aurora A (Thr288)/Aurora B (Thr232)/Aurora C (Thr198) (D13A11) XP® Rabbit mAb	W, IF-IC, F	H, M, R
#4718 Aurora A/AIK (1G4) Rabbit mAb	W, IP, IF-IC	H, Mk
#5292 BrdU (Bu20a) Mouse mAb	IHC-P, IF-IC, F	All
#4539 Phospho-cdc2 (Tyr15) (10A11) Rabbit mAb	W, IP, IF-IC, F	H, M, R, Mk
#9527 Phospho-cdc25C (Thr48) Antibody	W, IF-IC	H
#2316 CDK9 (C12F7) Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC, F	H, M, R, Hm, Mk, B, Dg
<b>New</b> #8064 CDT1 (D10F11) Rabbit mAb	W, IP, IF-IC	H, Mk
#2348 Phospho-Chk1 (Ser345) (133D3) Rabbit mAb	W, IF-IC, F	H, M, R, Mk
#2661 Phospho-Chk2 (Thr68) Antibody	W, IP, IF-IC, F	H, Mk
#3440 Chk2 (1C12) Mouse mAb	W, IHC-P, IF-IC	H, Mk
#4138 Cyclin B1 Antibody	W, IF-IC	H, M, R, Hm, Mk
<b>XP</b> #3300 Phospho-Cyclin D1 (Thr286) (D29B3) XP® Rabbit mAb	W, IP, IF-IC, F	H, (Mk)
#5166 EAPP (1E4) Mouse mAb	W, IF-IC	H, M, R, Mk
<b>XP</b> #5436 FoxM1 (D12D5) XP® Rabbit mAb	W, IF-IC	H
#4944 HR6A/HR6B Antibody	W, IF-IC, F	H, M, R, Mk, (C, Dm, X, Z)
#2786 INCENP (A841) Antibody	W, IF-IC, F	H
#2807 INCENP (P240) Antibody	W, IF-IC, F	H
#2180 Ku80 (C48E7) Rabbit mAb	W, IP, IHC-P, IHC-F, IF-IC	H, Mk
#2753 Ku80 Antibody	W, IP, IHC-P, IF-IC, F	H, Mk, (M, R)
#9159 Phospho-LATS1 (Thr1079) Antibody	W, IF-IC	H, M, Mk, (R, C, Z, B)
<b>XP</b> #3619 MCM2 (D7G11) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, ChIP	H, M, R, Mk
#4007 MCM2 Antibody	W, IP, IHC-P, IF-IC	H, M, R, Hm, Mk
#4012 MCM3 Antibody	W, IP, IHC-P, IF-IC	H, M, R, Hm, Mk
<b>XP</b> #3735 MCM7 (D10A11) XP® Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, R, Hm, Mk, Dg
#3515 MLH1 (4C9C7) Mouse mAb	W, IP, IF-IC, F	H, Mk
#2850 MSH2 (3A2) Mouse mAb	W, IP, IF-IC	H
<b>XP</b> #5424 MSH6 (D60G2) XP® Rabbit mAb	W, IF-IC	H, Mk
#3996 MSH6 (L990) Antibody	W, IF-IC	H, Mk
#3517 Phospho-NPM (Thr95) Antibody	W, IP, IF-IC, F	H, (M, R, Mk)
#3541 Phospho-NPM (Thr199) Antibody	W, IP, IHC-P, IF-IC	H, M, R
<b>New</b> #8967 NuMA (D49H4) Rabbit mAb	W, IF-IC	H, Mk
#3888 NuMA Antibody	W, IF-IC	H, Mk

## Product References:

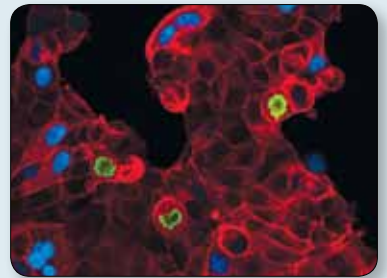
**#2661 Phospho-Chk2 (Thr68) Antibody:** Lukas, C. et al. (2003) Distinct spatiotemporal dynamics of mammalian checkpoint regulators induced by DNA damage. *Nat. Cell Biol.* 5, 255-260. / Castedo, M. et al. (2004) The cell cycle checkpoint kinase Chk2 is a negative regulator of mitotic catastrophe. *Oncogene* 23, 4353-4361.

**#2947 p21 Waf1/Cip1 (12D1) Rabbit mAb:** Chew, Y.C. et al. (2011) Protein kinase C (PKC) delta suppresses keratinocyte proliferation by increasing p21(Cip1) level by a KLF4 transcription factor-dependent mechanism. *J. Biol. Chem.* 286, 28772-28782.

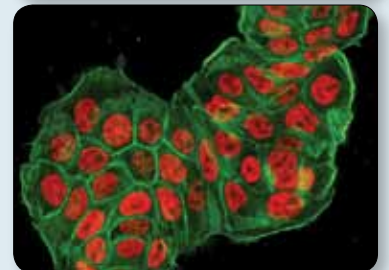
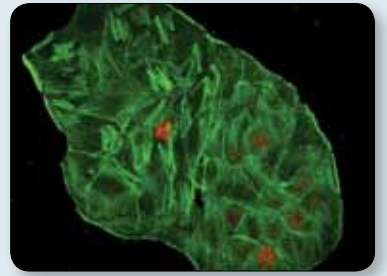
**#9284 Phospho-p53 (Ser15) Antibody:** Kruman, I.I. et al. (2000) Homocysteine elicits a DNA damage response in neurons that promotes apoptosis and hypersensitivity to excitotoxicity. *J. Neurosci.* 20, 6920-6926. / O'Driscoll, M. et al. (2003) A splicing mutation affecting expression of ataxia-telangiectasia and Rad3-related protein (ATR) results in Seckel syndrome. *Nat. Genet.* 33, 497-501. / Castedo, M. et al. (2004) The cell cycle checkpoint kinase Chk2 is a negative regulator of mitotic catastrophe. *Oncogene* 23, 4353-4361. / Castedo, M. et al. (2001) Human immunodeficiency virus 1 envelope glycoprotein complex-induced apoptosis involves mammalian target of rapamycin/FKBP12-rapamycin-associated protein-mediated p53 phosphorylation. *J. Exp. Med.* 194, 1097-1110.



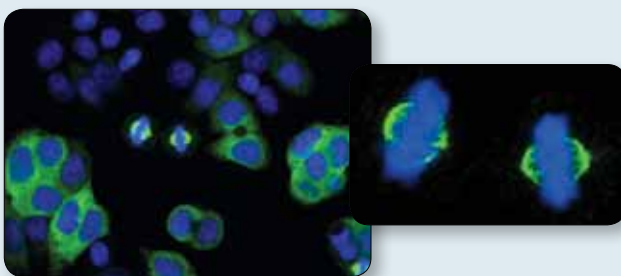
	Applications	Reactivity
#4736 ORC2 (3G6) Rat mAb	W, IP, IF-IC	H, Mk
#2947 p21 Waf1/Cip1 (12D1) Rabbit mAb	<b>AF</b> W, IP, IHC-P, IF-IC, F	H, Mk
<b>XP</b> #3686 p27 Kip1 (D69C12) XP® Rabbit mAb	W, IP, IF-IC	H, R, Mk
#3698 p27 Kip1 (SX53G8.5) Mouse mAb	W, IF-IC	H, M, R, Mk
#9284 Phospho-p53 (Ser15) Antibody	W, IP, IF-IC, ChIP	H, M, R, Mk
#9286 Phospho-p53 (Ser15) (16G8) Mouse mAb	<b>AF</b> W, IF-IC, F	H
#9289 Phospho-p53 (Ser37) Antibody	W, IF-IC, F	H, Mk
#2521 Phospho-p53 (Ser46) Antibody	W, IP, IF-IC, F	H, Mk
#2676 Phospho-p53 (Thr81) Antibody	W, IHC-P, IF-IC	H, Mk
#2527 p53 (7F5) Rabbit mAb	<b>AF</b> W, IHC-P, IF-IC, F, ChIP	H, Mk
#2524 p53 (1C12) Mouse mAb	<b>AF</b> W, IP, IF-IC, ChIP	H, M, R, Mk
#2558 Phospho-p57 Kip2 (Thr310) Antibody	W, IF-IC	H
#2557 p57 Kip2 Antibody	W, IP, IF-IC	H
#4892 p63- $\alpha$ Antibody	W, IF-IC	H, (C)
#4941 Phospho-PBK/TOPK (Thr9) Antibody	W, IF-IC, F	H, M
#2586 PCNA (PC10) Mouse mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk, B, Pg
<b>New</b> #5524 PITSLRE/CDK11 (D88B3) Rabbit mAb	W, IP, IF-IC	H, M, Mk, (R)
#3258 PLK4 Antibody	W, IF-IC	H, M, R, Mk
#3425 Rad52 Antibody	W, IF-IC	H, M, R, Mk, (Hm)
#9309 Rb (4H1) Mouse mAb	W, IP, IHC-P, IF-IC, F, ChIP	H, Mk, B, Pg
#4839 RecQL1 (Q1N3) Mouse mAb	W, IF-IC	H
#2208 RPA32 (4E4) Rat mAb	W, IP, IF-IC	H, M, R, Hm, Mk
#2267 RPA70 Antibody	W, IP, IF-IC, F	H, R, Mk
#2198 RPA70 (4D9) Rat mAb	W, IP, IF-IC	H, Mk
#9592 SMG-1 (V72) Antibody	W, IP, IF-IC	H, Mk
<b>New XP</b> #8842 Phospho-TACC3 (Ser558) (D8H10) XP® Rabbit mAb	W, IF-IC	H
<b>New XP</b> #8069 TACC3 (D9E4) XP® Rabbit mAb	W, IP, IF-IC	H
#4124 TIF1 $\beta$ (C42G12) Rabbit mAb	W, IHC-P, IF-IC, F	H, M, R, Mk
#4123 TIF1 $\beta$ Antibody	W, IP, IF-IC	H, M, R, Mk
#4125 TLK1 Antibody	W, IF-IC	H, M, R
#3255 TTK Antibody	W, IP, IF-IC	H, (Mk)
#2648 VCP Antibody	W, IF-IC, F	H, M, R, Mk, (X, Z, B, Pg, Sc)
#2735 XRCC1 Antibody	W, IP, IF-IC	H



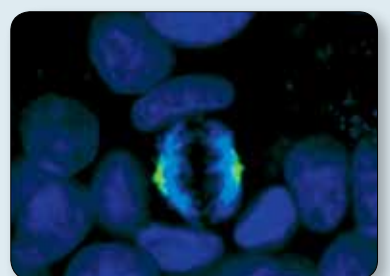
**p21 Waf1/Cip1 (12D1) Rabbit mAb (Alexa Fluor® 647 Conjugate) #8587:** Confocal IF analysis of MCF7 cells using #8587 (blue pseudocolor) and Phospho-Histone H3 (Ser10) (D2C8) XP® Rabbit mAb (Alexa Fluor® 488 Conjugate) #3465 (green). Actin filaments were labeled with DY-554 phalloidin (red).



**Phospho-p53 (Ser15) (16G8) Mouse mAb (Alexa Fluor® 555 Conjugate) #9481:** Confocal IF analysis of HT-29 cells, untreated (upper) or UV-treated (lower), using #9481 (red). Actin filaments were labeled with Alexa Fluor® 488 phalloidin (green).

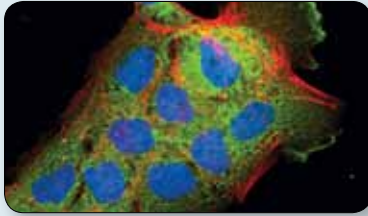


**TACC3 (D9E4) XP® Rabbit mAb #8069:** Confocal IF analysis of HT-29 cells using #8069 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

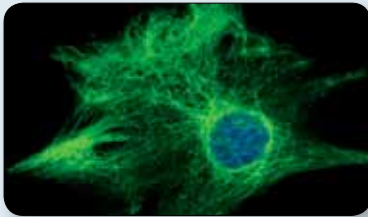


**Phospho-TACC3 (Ser558) (D8H10) XP® Rabbit mAb #8842:** Confocal IF analysis of HT-29 cells using #8842 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

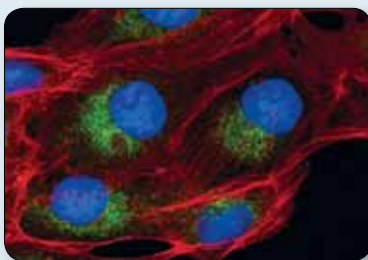
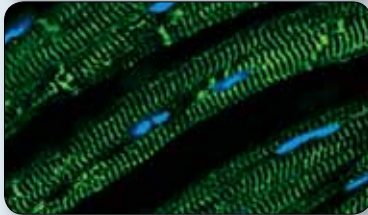
# Cytoskeletal Regulation and Adhesion



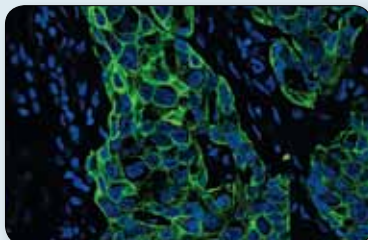
**CD2AP (A599) Antibody #5478:** Confocal IF analysis of A-431 cells using #5478 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**Desmin (D93F5) XP® Rabbit mAb #5332:** Confocal IF analysis of C2C12 cells (upper) and mouse heart tissue (lower) using #5332 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**DRP1 (D6C7) Rabbit mAb #8570:** Confocal IF analysis of ACHN cells using #8570 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



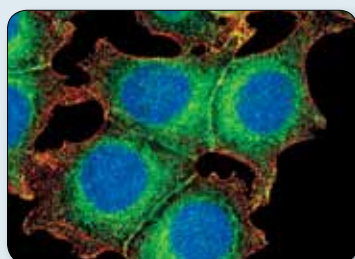
**Pan-Keratin (C11) Mouse mAb (Alexa Fluor® 488 Conjugate) #4523:** Confocal IF analysis of paraffin-embedded human breast carcinoma using #4523 (green). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

		Applications	Reactivity
<b>New</b>	#8456 Pan-Actin (D18C11) Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk
	#4970 β-Actin (13E5) Rabbit mAb	<b>AF</b> W, IHC-P, IHC-F, IF-IC, F	H, M, R, Mk, B, Pg, (C, Dg)
	#3700 β-Actin (8H10D10) Mouse mAb	W, IHC-P, IF-IC, F	H, M, R, Hm, Mk
	#3134 α-Actinin Antibody	W, IF-IC	H, M, R, Hm, Mk
<b>XP</b>	#5601 βIG-H3 (D31B8) XP® Rabbit mAb	W, IP, IF-IC	H
	#2719 βIG-H3 Antibody	W, IP, IF-IC	H, (Mk)
	#3195 E-Cadherin (24E10) Rabbit mAb	<b>AF</b> W, IHC-P, IHC-F, IF-IC, F	H, M, (Dg, Pg)
	#4442 OB-Cadherin (P707) Antibody	W, IP, IF-IC	H, M, R, (Mk)
	#2189 P-Cadherin (C13F9) Rabbit mAb	W, IF-IC	H, (Mk)
	#2130 P-Cadherin Antibody	W, IP, IF-IC, F	H
<b>XP</b>	#2500 VE-Cadherin (D87F2) XP® Rabbit mAb	W, IP, IF-IC, F	H, Dm, B, Pg, (Mk)
	#2158 VE-Cadherin Antibody	W, IF-IC	H, Dm, B
	#2980 Caldesmon-1 Antibody	W, IF-IC	H, M, R, Mk
	#3236 α-E-Catenin Antibody	W, IF-IC	H, M, R
	#2163 α-N-Catenin (C12G4) Rabbit mAb	W, IP, IF-IC	H, M, R
	#2131 α-N-Catenin Antibody	W, IP, IF-IC, F	H, M, R
	#2309 γ-Catenin Antibody	W, IP, IHC-P, IF-IC	H, M, R, Hm, Mk
	#2911 Phospho-Catenin δ-1 (Tyr228) Antibody	W, IF-IC	H
<b>XP</b>	#3267 Caveolin-1 (D46G3) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, R, Hm, Mk, B, Dg
	#3238 Caveolin-1 Antibody	W, IP, IHC-P, IHC-F, IF-IC, F	H, M, R, Hm, Z, B, Pg
<b>New</b>	#5478 CD2AP (A599) Antibody	W, IP, IF-IC	H, (Mk)
	#2383 CEA/CD66e (CB30) Mouse mAb	W, IHC-P, IF-IC, F	H
<b>XP</b>	#4796 Clathrin Heavy Chain (D3C6) XP® Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
	#2410 Clathrin Heavy Chain (P1663) Antibody	W, IF-IC	H, M, R, Mk, B
	#3313 Phospho-Cofilin (Ser3) (77G2) Rabbit mAb	W, IF-IC	H, M, R, Mk, B
<b>XP</b>	#5175 Cofilin (D3F9) XP® Rabbit mAb	W, IF-IC	H, M, R, Mk, Dg
	#3512 Connexin 43 Antibody	W, IHC-P, IHC-F, IF-F, IF-IC	H, M, R, Mk, Z, (Dg, Pg)
	#4573 Cool2/αPix (C23D2) Rabbit mAb	W, IF-IC	H, M, R, (Dg)
	#3503 Cortactin (H222) Antibody	W, IP, IF-IC	H, Mk, B
<b>XP</b>	#5332 Desmin (D93F5) XP® Rabbit mAb	W, IF-F, IF-IC	H, M, R, (Mk)
	#4024 Desmin Antibody	W, IF-F	M, R, (H, Mk)
<b>New</b>	#8570 DRP1 (D6C7) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
	#3288 EEA1 (C45B10) Rabbit mAb	W, IP, IF-IC	H, M, R
	#2411 EEA1 Antibody	W, IP, IF-IC	H, M, R, Mk
	#2428 EML4 Antibody	W, IP, IF-IC	H
	#2929 EpCAM (VU1D9) Mouse mAb	<b>AF</b> W, IHC-P, IF-IC, F	H
	#3149 Phospho-Ezrin (Thr567)/Radixin (Thr564)/Moesin (Thr558) (41A3) Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk, Dm, B, (X, Dg)
	#3145 Ezrin Antibody	W, IP, IHC-P, IF-IC, F	H, M, R, Mk, B
	#2639 Fibrillarlin (C13C3) Rabbit mAb	W, IF-IC	H, M, R, Mk
	#3436 Flotillin-2 (C42A3) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
	#4708 Integrin β5 Antibody	W, IP, IF-IC	H
	#4545 Pan-Keratin (C11) Mouse mAb	<b>AF</b> W, IHC-P, IF-IC, IF-P, F	H, R, Mk
	#4898 Keratin 7 (R458) Antibody	W, IF-IC	H

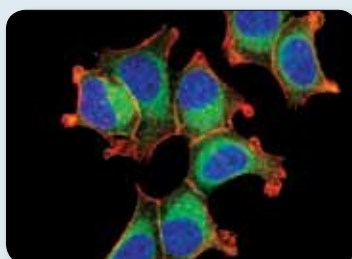
## Product References:

- #3195 E-Cadherin (24E10) Rabbit mAb: Stairs, D.B. et al. (2011) Deletion of p120-catenin results in a tumor microenvironment with inflammation and cancer that establishes it as a tumor suppressor gene. *Cancer Cell* 19, 470-483.
- #3267 Caveolin-1 (D46G3) XP® Rabbit mAb: Béliveau, F. et al. (2011) Essential role of endocytosis of the type II transmembrane serine protease TMPRSS6 in regulating its functionality. *J. Biol. Chem.* 286, 29035-29043.
- #3512 Connexin 43 Antibody: Zhang, Q. et al. (2006) Descending vasa recta endothelium is an electrical syncytium. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 291, R1688-1699.
- #4796 Clathrin Heavy Chain (D3C6) XP® Rabbit mAb: Béliveau, F. et al. (2011) Essential role of endocytosis of the type II transmembrane serine protease TMPRSS6 in regulating its functionality. *J. Biol. Chem.* 286, 29035-29043.
- #2411 EEA1 Antibody: Fort, A.G. et al. (2011) In vitro motility of liver connexin vesicles along microtubules utilizes kinesin motors. *J. Biol. Chem.* 286, 22875-22885.
- #3145 Ezrin Antibody: Canals, D. et al. (2010) Differential effects of ceramide and sphingosine 1-phosphate on ERM phosphorylation: probing sphingolipid signaling at the outer plasma membrane. *J. Biol. Chem.* 285, 32476-32485.
- #3149 Phospho-Ezrin (Thr567)/Radixin (Thr564)/Moesin (Thr558) (41A3) Rabbit mAb: Lavielle, M. et al. (2011) Structural plasticity of perisynaptic astrocyte processes involves ezrin and metabotropic glutamate receptors. *Proc. Natl. Acad. Sci. U.S.A.* 108, 12915-12919.

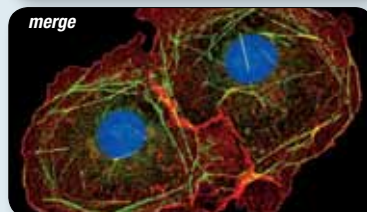
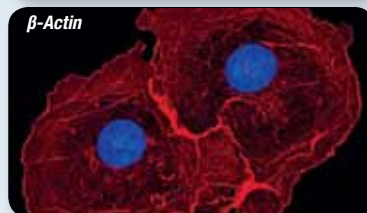
		Applications	Reactivity
<b>XP</b>	#4543 Keratin 17 (D73C7) XP <sup>®</sup> Rabbit mAb	W, IF-IC, F	H, M, R, Mk, (Dg)
	#4548 Keratin 18 (DC10) Mouse mAb	W, IHC-P, IF-IC, F	H
	#3389 LPP (8B3A11) Mouse mAb	W, IP, IHC-P, IF-IC	H, M, Hm, Mk
	#3150 Moesin (Q480) Antibody	W, IF-IC, F	H, M, R, B
	#4538 MUC1 (VU4H5) Mouse mAb	W, IP, IHC-P, IF-IC, F	H
	#3403 Myosin IIa Antibody	W, IF-IC	H, M, R
	#3404 Myosin IIb Antibody	W, IF-IC	H, M, Mk, (R)
<b>New</b>	#8189 Myosin IIc (D4A7) Rabbit mAb	W, IF-IC	H, M, R, Mk
	#3402 Myosin Va Antibody	W, IP, IF-F	H, M, R, (Mk, C)
	#3674 Phospho-Myosin Light Chain 2 (Thr18/Ser19) Antibody	W, IF-IC	H, M, (R, C, X, Z, B, Pg)
	#3671 Phospho-Myosin Light Chain 2 (Ser19) Antibody	W, IF-IC	H, M, R, Dm, (C, X, Z, B, Pg)
	#3675 Phospho-Myosin Light Chain 2 (Ser19) Mouse mAb	W, IF-IC	H, M, R, B, Pg
<b>XP</b>	#3924 NSF (D31C7) XP <sup>®</sup> Rabbit mAb	W, IP, IF-F	H, M, R, Mk
	#2145 NSF Antibody	W, IP, IF-F	H, M, R, Hm, Mk
	#3053 NTF2 (5A3) Mouse mAb	W, IF-IC	H, M, R, Mk
	#2598 NUP98 (C39A3) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
<b>New</b>	#8190 $\alpha$ -Parvin (D7F9) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, Dg
<b>XP</b>	#4026 $\alpha$ -Parvin Antibody	W, IF-IC	H, M, R, Hm, Mk, Dg
	#2541 Phospho-Paxillin (Tyr118) Antibody	W, IF-IC	H, M, R, Mk
	#5213 PCM-1 (G2000) Antibody	W, IP, IF-IC, F	H, M, (Mk)
	#5259 PCM-1 (Q15) Antibody	W, IP, IF-IC, F	H, (Mk)
	#2863 Plectin-1 Antibody	W, IF-IC	H, Mk
	#3237 Profilin-1 Antibody	W, IF-IC, F	H, M, R, B
	#3547 Rab5 (C8B1) Rabbit mAb	W, IF-IC	H, M, R, Mk
	#2143 Rab5 Antibody	W, IF-IC	H, M, R, Hm, Mk
<b>XP</b>	#9367 Rab7 (D95F2) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
<b>New</b>	#6975 Rab8 (D22D8) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
<b>XP</b>	#5118 Rab9 (D52G8) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
<b>New</b>	#8127 Rab10 (D36C4) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
<b>XP</b>	#5589 Rab11 (D4F5) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, (Hm)
	#4314 Rab25 Antibody	W, IP, IF-IC	H
	#5134 RCC1 (D15H6) Rabbit mAb	W, IF-IC	H, M, R, Mk
	#3589 RCC1 Antibody	W, IF-IC	H, M, R, Mk
	#5104 RCC2 (D14F3) Rabbit mAb	W, IF-IC	H, M, R, Mk
	#3667 RCC2 Antibody	W, IF-IC	H, M, R, Mk
	#2564 RhoGDI Antibody	W, IF-IC, F	H, M, R, B
<b>XP</b>	#3669 p115 RhoGEF (D25D2) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
	#4191 Phospho-Stathmin (Ser38) (D19H10) Rabbit mAb	W, IP, IHC-P, IF-IC	H, Mk
	#2869 Syntaxin 6 (C34E2) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
<b>XP</b>	#5335 Acetyl- $\alpha$ -Tubulin (Lys40) (D20G3) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, Z



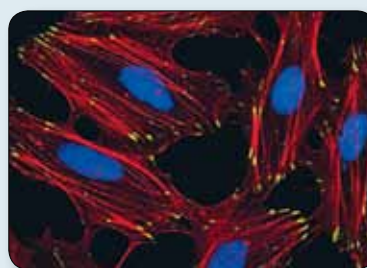
**Rab8 (D22D8) XP<sup>®</sup> Rabbit mAb #6975:** Confocal IF analysis of MCF7 cells using #6975 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).



**Rab10 (D36C4) XP<sup>®</sup> Rabbit mAb #8127:** Confocal IF analysis of MCF7 cells using #8127 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).



**Myosin IIc (D4A7) Rabbit mAb #8189:** Confocal IF analysis of COS-7 cells using #8189 (green) and  $\beta$ -Actin (8H10D10) Mouse mAb #3700 (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

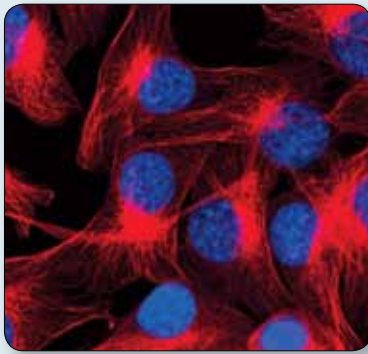


**$\alpha$ -Parvin (D7F9) XP<sup>®</sup> Rabbit mAb #8190:** Confocal IF analysis of HeLa cells using #8190 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

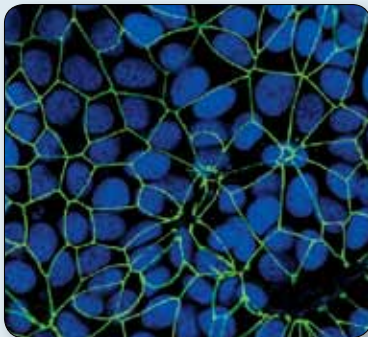
#### Product References:

- #3674 Phospho-Myosin Light Chain 2 (Thr18/Ser19) Antibody:** Birukova, A. A. et al. (2004) Microtubule disassembly induces cytoskeletal remodeling and lung vascular barrier dysfunction: role of Rho-dependent mechanisms. *J. Cellular Phys.* 201, 55-50. / Bhadriraju, K. et al. (2007) Quantifying myosin light chain phosphorylation in single adherent cells with automated fluorescence microscopy. *BMC Cell Biol.* 8, 43. / Ponsaerts, R. et al. (2008) The myosin II ATPase inhibitor blebbistatin prevents thrombin-induced inhibition of intercellular calcium wave propagation in corneal endothelial cells. *Invest. Ophthalmol. Vis. Sci.* 49, 4816-4827.
- #3671 Phospho-Myosin Light Chain 2 (Ser19) Antibody:** John, G. R. et al. (2004) Interleukin-1beta induces a reactive astroglial phenotype via deactivation of the Rho GTPase-Rock axis. *J. Neurosci.* 24, 2837-2845. / Kamijo, K. et al. (2006) Dissecting the role of Rho-mediated signaling in contractile ring formation. *Mol. Biol. Cell* 17, 43-55.
- #3675 Phospho-Myosin Light Chain 2 (Ser19) Mouse mAb:** Sakurada, K. et al. (1998) Dynamics of myosin light chain phosphorylation at Ser19 and Thr18/Ser19 in smooth muscle cells in culture. *Am. J. Physiol.* 274, 1563-1572. / Totsukawa, F. et al. (2000) Distinct roles of ROCK (Rho-kinase) and MLCK in spatial regulation of MLC phosphorylation for assembly of stress fibers and focal adhesions in 3T3 fibroblasts. *J. Cell Biol.* 150, 797-806.

# Cytoskeletal Regulation and Adhesion Continued



**$\beta$ -Tubulin (9F3) Rabbit mAb (Alexa Fluor<sup>®</sup> 594 Conjugate) #7634:** Confocal IF analysis of C2C12 cells using #7634 (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

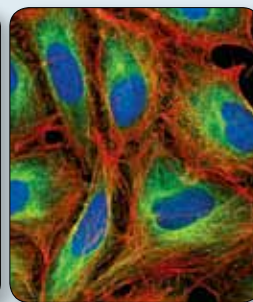
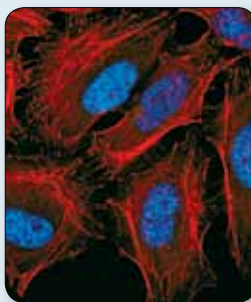


**ZO-3 (D57G7) XP<sup>®</sup> Rabbit mAb #3704:** Confocal IF analysis of MCF7 cells using #3704 (green). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

	Applications	Reactivity
#2125 $\alpha$ -Tubulin (11H10) Rabbit mAb	AF W, IHC-P, IF-IC, F	H, M, R, Mk, Dm, B, (Dg)
#2144 $\alpha$ -Tubulin Antibody	W, IHC-P, IF-IC, F	H, M, R, Mk, Dm, B, (X)
#3873 $\alpha$ -Tubulin (DM1A) Mouse mAb	W, IP, IHC-P, IF-IC	H, M, R, Mk
#2148 $\alpha/\beta$ -Tubulin Antibody	W, IHC-P, IF-IC, F	H, M, R, Mk, Z, B
#2128 $\beta$ -Tubulin (9F3) Rabbit mAb	AF W, IHC-P, IF-IC, F	H, M, R, Mk, Z, B, (C)
#2146 $\beta$ -Tubulin Antibody	W, IHC-P, IF-IC, F	H, M, R, Mk, Z, B, (X)
#3132 VASP (9A2) Rabbit mAb	W, IP, IF-IC	H, M, R, Hm, Mk, B
#2369 Villin-1 (R814) Antibody	W, IF-IC	H, M, (R)
#3877 Phospho-Vimentin (Ser56) Antibody	W, IF-IC	H, M, R, Mk
XP #5741 Vimentin (D21H3) XP <sup>®</sup> Rabbit mAb	AF W, IHC-P, IF-IC, F	H, M, R, Mk
#3932 Vimentin (R28) Antibody	W, IF-IC	H, M, R, Mk
XP #3659 WAVE-2 (D2C8) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
#2847 ZO-2 Antibody	W, IF-IC	H, M, R, Mk, B, Dg
XP #3704 ZO-3 (D57G7) XP <sup>®</sup> Rabbit mAb	W, IF-IC	H

## Product References:

#2128  $\beta$ -Tubulin (9F3) Rabbit mAb: Guo, A. et al. (2008) Signaling networks assembled by oncogenic EGFR and c-Met. *Proc. Natl. Acad. Sci. U.S.A* 105, 692-697.



**Acetyl- $\alpha$ -Tubulin (Lys40) (D20G3) XP<sup>®</sup> Rabbit mAb #5335:** Confocal IF analysis of HeLa cells, untreated (left) or treated with Trichostatin A (TSA) #9950 (right), using #5335 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

# Epitope Tag Antibodies

	Applications	Reactivity
#2368 DYKDDDDK Tag Antibody (Binds to same epitope as Sigma's Anti-FLAG <sup>®</sup> M2 Antibody)	AF W, IP, IHC-P, IF-IC	All
#2372 $\beta$ -Gal (14B7) Mouse mAb	W, IP, IF-IC, F	All
XP #2956 GFP (D5.1) XP <sup>®</sup> Rabbit mAb	W, IHC-P, IF-IC, F	All
#2448 Glu-Glu Tag Antibody	W, IP, IF-IC	All
#2625 GST (91G1) Rabbit mAb	W, IP, IF-IC	All
#2624 GST (26H1) Mouse mAb	AF W, IP, IF-IC	All
#3724 HA-Tag (C29F4) Rabbit mAb	W, IP, IHC-P, IF-IC, F	All
#2367 HA-Tag (6E2) Mouse mAb	AF W, IHC-P, IF-IC, F	All
#2365 His-Tag Antibody	W, IP, IF-IC	All
#2396 MBP (8G1) Mouse mAb	W, IP, IF-IC	All
#2278 Myc-Tag (71D10) Rabbit mAb	W, IP, IF-IC, F	All
#2272 Myc-Tag Antibody	W, IF-IC, F	All
#2276 Myc-Tag (9B11) Mouse mAb	AF W, IP, IHC-P, IF-IC, F	All

## Product References:

#2368 DYKDDDDK Tag Antibody (Binds to same epitope as Sigma's Anti-FLAG<sup>®</sup> M2 Antibody): Forrester, M.T. et al. (2011) Bacterial flavohemoglobin: a molecular tool to probe mammalian nitric oxide biology. *Biotechniques* 50, 41-45.

#3724 HA-Tag (C29F4) Rabbit mAb: Corcoran, K. et al. (2011) Ubiquitin-mediated regulation of CD86 protein expression by the ubiquitin ligase membrane-associated RING-CH-1 (MARCH1). *J. Biol. Chem.* 286, 37168-37180.

#2367 HA-Tag (6E2) Mouse mAb: Klein, R.M. et al. (2008) B-RAF regulation of Rnd3 participates in actin cytoskeletal and focal adhesion organization. *Mol. Biol. Cell* 19, 498-508. / Corcoran, K. et al. (2011) Ubiquitin-mediated regulation of CD86 protein expression by the ubiquitin ligase membrane-associated RING-CH-1 (MARCH1). *J. Biol. Chem.* 286, 37168-37180.

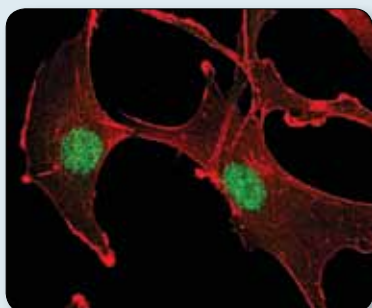
#2272 Myc-Tag Antibody: Zhang, H. et al. (2002) Enzymes of the SUMO modification pathway localize to filaments of the nuclear pore complex. *Mol. Cell Biol.* 22, 6498-6508. / Shimizu, K. et al. (2002) The fifth essential DNA polymerase phi in *Saccharomyces cerevisiae* is localized to the nucleolus and plays an important role in synthesis of rRNA. *Proc. Natl. Acad. Sci. USA* 99, 9133-9138.

# Protein Folding and Stability

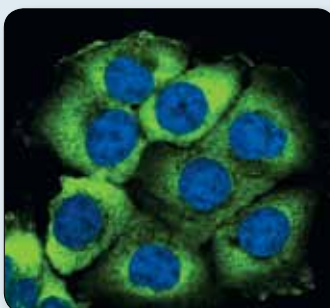
	Applications	Reactivity
#2556 Calpain 1 Large Subunit (Mu-type) Antibody	W, IF-F	H, M, R
#2539 Calpain 2 Large Subunit (M-type) Antibody	W, IP, IF-F, F	H, M, R
<b>XP</b> #4793 CDC37 (D11A3) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
#6895 COPS5 Antibody	W, IP, IF-IC	H, M, R, Mk, (X, Z, B, Dg, Pg)
<b>XP</b> #4833 HAUSP (D17C6) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
<b>New XP</b> #5670 HOP (D10E2) XP <sup>®</sup> Rabbit mAb	W, IF-IC, F	H, Mk, B
#4356 HSF1 Antibody	W, IP, IHC-P, IF-IC, F, ChIP	H, M, R, Mk
#2401 Phospho-HSP27 (Ser82) Antibody	W, IHC-P, IHC-F, IF-IC	H, M, R, Mk
#2406 Phospho-HSP27 (Ser82) Antibody II	W, IHC-P, IHC-F, IF-IC, F	H, M, R, Mk
#2442 HSP27 Antibody (Rodent Preferred)	W, IF-IC, F	M, R
#2402 HSP27 (G31) Mouse mAb	W, IHC-P, IF-IC	H, Mk
#4868 HSP40 Antibody	W, IP, IF-IC, F	H, M, R, Mk
#4870 HSP60 (D307) Antibody	W, IF-IC, F	H, M, R, Mk, Dm
#4869 HSP60 (D85) Antibody	W, IF-IC, F	H, M, R, Mk, Dm
#4876 HSP70 (D69) Antibody	W, IHC-P, IHC-F, IF-IC, F	H, M, R, Mk
#4873 HSP70 (6B3) Rat mAb	W, IP, IHC-P, IF-IC, F	H, Mk
#4877 HSP90 (C45G5) Rabbit mAb	W, IHC-P, IF-IC, F	H, M, R, Mk, (B)
#2740 NEDD4 Antibody	W, IF-IC, F	H, M, R, Mk
#4013 NEDD4L Antibody	W, IP, IF-IC	H, M, R, Mk
#2409 PA28 $\beta$ Antibody	W, IP, IF-IC	H, M, R, Mk
#2412 PA28 $\gamma$ Antibody	W, IP, IHC-P, IF-IC	H, M, R, Mk
#2455 PSMA2 Antibody	W, IF-IC	H, M, R, Mk
#2457 PSMA5 (K231) Antibody	W, IF-IC	H, M, R, Mk
<b>XP</b> #5591 SENP3 (D20A10) XP <sup>®</sup> Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
#2156 Skp1 Antibody	W, IF-IC, F	H, M, R
#4313 Skp2 (L70) Antibody	W, IF-IC	H, M, R, Mk
#4358 Skp2 Antibody	W, IF-IC	H, Mk
#4930 SUMO-1 Antibody	W, IP, IHC-P, IF-IC	H, M, R, Mk
#4971 SUMO-2/3 (18H8) Rabbit mAb	W, IF-IC	H, R, (M)
<b>XP</b> #4786 Ubc9 (D26F2) XP <sup>®</sup> Rabbit mAb	W, IF-IC	H, M, R, Mk
#4890 UBE1a Antibody	W, IP, IHC-P, IF-IC, F	H, M, R
#4891 UBE1a/b Antibody	W, IF-IC	H, M, R
#3936 Ubiquitin (P4D1) Mouse mAb	W, IHC-P, IF-IC	All
<b>New</b> #8501 USP10 (D7A5) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk
#5553 USP10 Antibody	W, IP, IF-IC	H, M, R, Mk

## Product References:

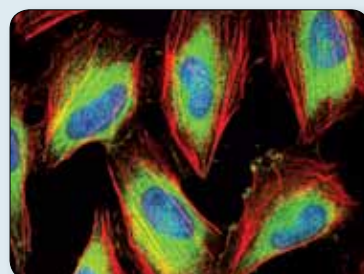
#2401 Phospho-HSP27 (Ser82) Antibody: Hofmann, M. et al. (2004) Mechanical pressure-induced phosphorylation of p38 mitogen-activated protein kinase in epithelial cells via Src and protein kinase C. *Biochemical and Biophysical Research Communications* 316, 673-679.



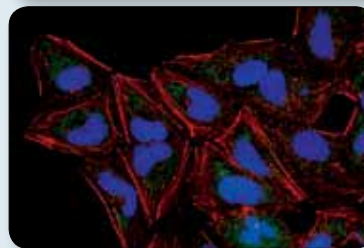
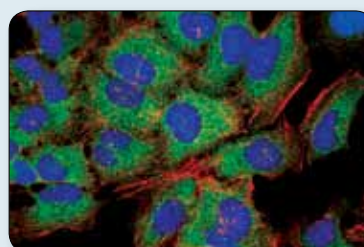
**Ubc9 (D26F2) XP<sup>®</sup> Rabbit mAb #4786:** Confocal IF analysis of A172 cells using #4786 (green). Actin filaments were labeled with DY-554 phalloidin (red).



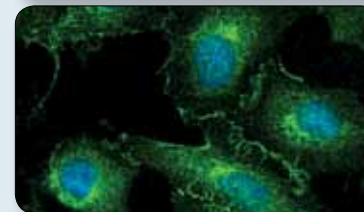
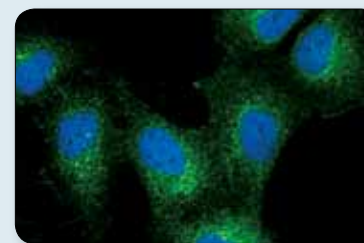
**USP10 (D7A5) Rabbit mAb #8501:** Confocal IF analysis of HCT 116 cells using #8501 (green). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).



**HOP (D10E2) XP<sup>®</sup> Rabbit mAb #5670:** Confocal IF analysis of HeLa cells using #5670 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

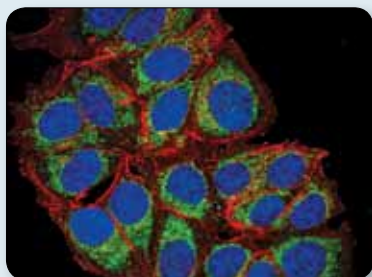


**Phospho-HSP27 (Ser82) Antibody #2401:** Confocal IF analysis of HeLa cells, anisomycin-treated (upper) or untreated (lower), using #2401 (green). Actin filaments were labeled with Alexa Fluor<sup>®</sup> 555 phalloidin (red). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

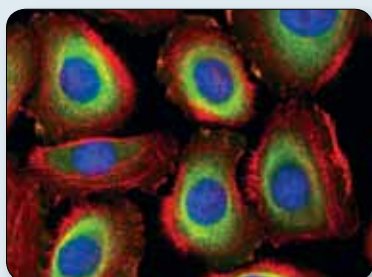


**CDC37 (D11A3) XP<sup>®</sup> Rabbit mAb #4793:** Confocal IF analysis of HeLa cells, serum-starved (upper) or treated with hEGF #8916 (100 ng/mL, 5 min; lower), using #4793 (green). Blue pseudocolor = DRAQ5<sup>®</sup> #4084 (fluorescent DNA dye).

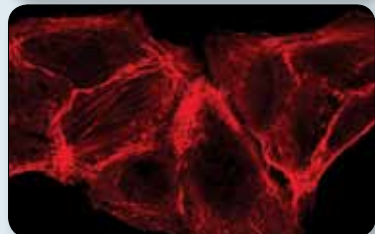
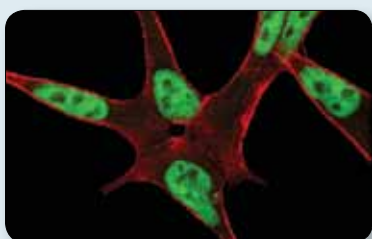
# Motif and Other Antibodies



**AKAP1 (D9C5) XP® Rabbit mAb #5203:** Confocal IF analysis of MCF7 cells using #5203 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**S100A10 (4E7E10) Mouse mAb #5529:** Confocal IF analysis of HEK001 cells using #5529 (green). Actin filaments were labeled with DY-554 phalloidin (red). Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



**Androgen Receptor (D6F11) XP® Rabbit mAb #5153:** Confocal IF analysis of LNCaP (upper) and DU 145 (lower) cells using #5153 (green). Actin filaments were labeled with DY-554 phalloidin (red).

## Motif Antibodies

	Applications	Reactivity
#9441 Acetylated-Lysine Antibody	W, IP, IHC-P, IF-IC, ChIP, E-P	All
#9411 Phospho-Tyrosine Mouse mAb (P-Tyr-100) <b>AF</b>	W, IP, IHC-P, IF-F, IF-IC, IF-P, F, E-P	All

## Calcium, cAMP, and Lipid Signaling

<b>New XP</b> #5203 AKAP1 (D9C5) XP® Rabbit mAb	W, IP, IF-IC	H, M, R
#2614 Pan-Calcineurin A Antibody	W, IP, IF-IC, F	H, M, R, Mk, Dm, (C, X, B, Pg)
<b>XP</b> #5607 MARCKS (D88D11) XP® Rabbit mAb	W, IHC-P, IF-IC, F	H, Mk
#4782 PKA C-α Antibody	W, IP, IF-IC, F	H, M, R
#3927 PKA RI-α/β Antibody	W, IF-IC	H, M, R
#2056 PKCα Antibody	W, IP, IF-IC, F	H, M, R, Mk, (Dg)
<b>New</b> #8188 PKD2 (D1A7) Rabbit mAb	W, IF-IC	H, Mk, Pg
<b>New</b> #8713 Phospho-PLCγ1 (Ser1248) (D25A9) Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, M, Mk, (R)
<b>New</b> #5529 S100A10 (4E7E10) Mouse mAb	W, IHC-P, IF-IC, F	H, M, R, Mk, (C)
<b>New</b> #5668 STIM1 (D88E10) Rabbit mAb	W, IP, IF-IC	H, M, R, Mk, B
#4917 STIM2 Antibody	W, IF-IC	H, M, R, Mk
<b>XP</b> #3557 TGM2 (D11A6) XP® Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk

## Phosphatases

#9527 Phospho-cdc25C (Thr48) Antibody	W, IF-IC	H
#2041 PP2A A Subunit (81G5) Rabbit mAb	W, IHC-P, IF-IC	H, M, R, Mk
#2039 PP2A A Subunit Antibody	W, IF-IC, F	H, M, R, Mk, Dm
#4953 PP2A B Subunit Antibody	W, IP, IHC-P, IF-IC, F	H, M, R, Mk, (C)
#2038 PP2A C Subunit Antibody	W, IP, IHC-P, IF-IC, F	H, M, R, Mk, Dm, (C, Pg)
<b>XP</b> #3549 PP2C-α (D18C10) XP® Rabbit mAb	W, IP, IHC-P, IF-IC, F	H, Mk
#2727 SHIP1 (C40G9) Rabbit mAb	W, IP, IF-IC, F	H
#2726 SHIP1 (P290) Antibody	W, IP, IF-IC, F	H
#2839 SHIP2 (C76A7) Rabbit mAb	W, IP, IF-IC, F	H

## Adaptor Proteins

#2747 c-Cbl Antibody	W, IP, IF-IC	H, M, R, Mk, (B)
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## Nuclear Receptors

<b>XP</b> #5153 Androgen Receptor (D6F11) XP® Rabbit mAb	W, IHC-P, IF-IC, F	H
#4161 Phospho-Glucocorticoid Receptor (Ser211) Antibody	W, IP, IF-IC	H, (M)
<b>XP</b> #3960 Nur77 (D63C5) XP® Rabbit mAb	W, IP, IF-IC, F	H, (Mk)
#2435 PPARγ (C26H12) Rabbit mAb	W, IHC-P, IF-IC	H, M, (R)
#2443 PPARγ (81B8) Rabbit mAb	W, IP, IF-IC	H, M, (R)
#3157 Progesterone Receptor B (C1A2) Rabbit mAb	W, IHC-P, IF-IC, F	H
<b>New XP</b> #8965 RARγ1 (D3A4) XP® Rabbit mAb	W, IP, IHC-P, IF-IC	H, M, (R, Hm, B, Dg)
#2979 Phospho-SRC-3 (Thr24) Antibody	W, IF-IC	H
#2115 SRC-3 (11B1) Mouse mAb	W, IF-IC, F	H

### Product References:

#5668 STIM1 (D88E10) Rabbit mAb: Mungai, P.T. et al. (2011) Hypoxia triggers AMPK activation through reactive oxygen species-mediated activation of calcium release-activated calcium channels. *Mol. Cell Biol.* 31, 3531-3545.

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# Immunofluorescence Protocol

For the recommended immunofluorescence protocols, please visit the individual product page on our website.

**\*IMPORTANT: Please refer to the APPLICATIONS section on the front page of the datasheet to determine if this product is validated and approved for use on cultured cell lines (IF-IC), paraffin-embedded samples (IF-P), or frozen tissue sections (IF-F).**

**IMPORTANT:** Please refer to the APPLICATIONS section on the front page of the datasheet to determine if this product is validated and approved for use on cultured cell lines (IF-IC), paraffin-embedded samples (IF-P), or frozen tissue sections (IF-F). Please see product datasheet for appropriate antibody dilution and unmasking solution.

## A. Solutions and Reagents

**NOTE:** Prepare solutions with Milli-Q® or equivalently purified water.

- **10X Phosphate Buffered Saline (PBS):** To prepare 1L add 80 g sodium chloride (NaCl), 2 g potassium chloride (KCl), 14.4 g sodium phosphate, dibasic (Na<sub>2</sub>HPO<sub>4</sub>) and 2.4 g potassium phosphate, monobasic (KH<sub>2</sub>PO<sub>4</sub>) to 1L dH<sub>2</sub>O. Adjust pH to 8.0.
- **Formaldehyde,** 16%, methanol free, Polysciences, Inc. (cat# 18814), use fresh, store opened vials at 4°C in dark, dilute in PBS for use.
- **Blocking Buffer:** (1X PBS / 5% normal goat serum (#5425) / 0.3% Triton X-100): To prepare 25 ml, add 2.5 ml 10X PBS, 1.25 ml normal serum from the same species as the secondary antibody (e.g., normal goat serum, normal donkey serum) and 21.25 ml dH<sub>2</sub>O and mix well. While stirring, add 75 µl Triton X-100.
- **Antibody Dilution Buffer** (1X PBS / 1% BSA / 0.3% Triton X-100): To prepare 40 ml, add 4 ml 10X PBS and 120 µl Triton X-100 to 0.4 g BSA. Bring to final volume of 40 ml with dH<sub>2</sub>O and mix well.
- **Fluorochrome-conjugated secondary antibody** (recommended secondary antibodies) **NOTE:** When using any primary or fluorochrome-conjugated secondary antibody for the first time, titrate the antibody to determine which dilution allows for the strongest specific signal with the least background for your sample.
- **Prolong® Gold Antifade Reagent** (Invitrogen, Eugene, OR, cat# P36930)

## Reagents specific to IF-P application:

- **Xylene**
- **Ethanol,** anhydrous denatured, histological grade, 100% and 95%.
- **Antigen Unmasking:**
  - **For Citrate:** 10 mM Sodium Citrate Buffer: To prepare 1L add 2.94 g sodium citrate trisodium salt dihydrate (C<sub>6</sub>H<sub>5</sub>Na<sub>3</sub>O<sub>7</sub>•2H<sub>2</sub>O) to 1L dH<sub>2</sub>O. Adjust pH to 6.0.
  - **For EDTA:** 1 mM EDTA: To prepare 1L add 0.372 g EDTA (C<sub>10</sub>H<sub>16</sub>N<sub>2</sub>O<sub>8</sub>•Na<sub>2</sub>•2H<sub>2</sub>O) to 1L dH<sub>2</sub>O. Adjust pH to 8.0.

## B. Specimen Preparation

### I. Cultured Cell Lines (IF-IC)

**NOTE:** Cells should be grown, treated, fixed and stained directly in multi-well plates, chamber slides or on coverslips.

1. Aspirate liquid, then cover cells to a depth of 2–3 mm with 4% formaldehyde in PBS.  
**NOTE:** Formaldehyde is toxic, use only in fume hood.
2. Allow cells to fix for 15 minutes at room temperature.
3. Aspirate fixative, rinse three times in PBS for 5 minutes each.
4. Proceed with Immunostaining (Section C).

### II. Paraffin Sections (IF-P)

**NOTE:** Do not allow slides to dry at any time during this process.

1. **Deparaffinization/Rehydration:**
  - a. Incubate sections in three washes of xylene for 5 minutes each.
  - b. Incubate sections in two washes of 100% ethanol for 10 minutes each.
  - c. Incubate sections in two washes of 95% ethanol for 10 minutes each.
  - d. Rinse sections twice in dH<sub>2</sub>O for 5 minutes each.
2. **Antigen Unmasking:** **NOTE:** Consult product datasheet for specific recommendation for the unmasking solution.
  - a. **For Citrate:** Bring slides to a boil in 10 mM sodium citrate buffer pH 6.0, then maintain at a sub-boiling temperature for 10 minutes. Cool slides on bench top for 30 minutes.
  - b. **For EDTA:** Bring slides to a boil in 1 mM EDTA pH 8.0 followed by 15 minutes at a sub-boiling temperature. No cooling is necessary.
3. Proceed with Immunostaining (Section C).

### III. Frozen/Cryostat Sections (IF-F)

1. For fixed frozen tissue proceed with Immunostaining (Section C).
2. For fresh, unfixed frozen tissue, please fix immediately, as follows:
  - a. Cover sections with 2–4% formaldehyde in PBS. **NOTE:** Formaldehyde is toxic, use only in fume hood.
  - b. Allow sections to fix for 15 minutes at room temperature.
  - c. Rinse slides three times in PBS for 5 minutes each.
  - d. Proceed with Immunostaining (Section C).

## C. Immunostaining

**NOTE:** All subsequent incubations should be carried out at room temperature unless otherwise noted in a humid light-tight box or covered dish/plate to prevent drying and fluorochrome fading.

1. Block specimen in Blocking Buffer for 60 minutes.
2. While blocking, prepare primary antibody by diluting as indicated on datasheet in Antibody Dilution Buffer.
3. Aspirate blocking solution, apply diluted primary antibody.
4. Incubate **overnight** at 4°C.
5. Rinse three times in PBS for 5 minutes each.  
**NOTE:** If using primary antibodies directly conjugated with Alexa Fluor® fluorochromes, then skip to step C8.
6. Incubate specimen in fluorochrome-conjugated secondary antibody\* diluted in Antibody Dilution Buffer for 1–2 hours at room temperature in dark.
7. Rinse in PBS as in step 5.
8. Coverslip slides with Prolong® Gold Antifade Reagent.
9. For best results, examine specimens immediately using appropriate excitation wavelength. For long-term storage, store slides flat at 4°C protected from light.

\* Recommended secondary antibodies are listed on page 18.

## Recommended Secondary Antibodies

#4408	Anti-mouse IgG (H+L), F(ab') <sub>2</sub> Fragment (Alexa Fluor® 488 Conjugate)
#4412	Anti-rabbit IgG (H+L), F(ab') <sub>2</sub> Fragment (Alexa Fluor® 488 Conjugate)
#4416	Anti-rat IgG (H+L) (Alexa Fluor® 488 Conjugate)
#4409	Anti-mouse IgG (H+L), F(ab') <sub>2</sub> Fragment (Alexa Fluor® 555 Conjugate)
#4413	Anti-rabbit IgG (H+L), F(ab') <sub>2</sub> Fragment (Alexa Fluor® 555 Conjugate)
#4417	Anti-rat IgG (H+L) (Alexa Fluor® 555 Conjugate)
#4410	Anti-mouse IgG (H+L), F(ab') <sub>2</sub> Fragment (Alexa Fluor® 647 Conjugate)
#4414	Anti-rabbit IgG (H+L), F(ab') <sub>2</sub> Fragment (Alexa Fluor® 647 Conjugate)
#4418	Anti-rat IgG (H+L) (Alexa Fluor® 647 Conjugate)
#5470	Anti-mouse IgG (H+L) (DyLight® 680 Conjugate)
#5366	Anti-rabbit IgG (H+L) (DyLight® 680 Conjugate)
#5257	Anti-mouse IgG (H+L) (DyLight® 800 Conjugate)
#5151	Anti-rabbit IgG (H+L) (DyLight® 800 Conjugate)

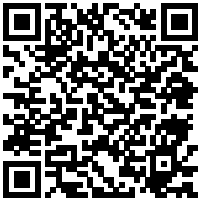


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