Product datasheet

Anti-Glutathione Peroxidase 4 antibody [EPNCIR144] ab125066

概述

产品名称
Anti-Glutathione Peroxidase 4抗体[EPNCIR144]

描述
兔单克隆抗体[EPNCIR144] to Glutathione Peroxidase 4

宿主
Rabbit

经测试应用
适用于：Flow Cyt (Intra), WB, IHC-P, ICC

种属反应性
与反应：Mouse, Rat, Human

免疫原
Synthetic peptide within Mouse Glutathione Peroxidase 4. The exact sequence is proprietary.

阳性对照
WB: Mouse testis, rat testis, human testis, human fetal liver, and human seminoma tissue lysates, HeLa, LnCaP, Jurkat and HepG2 cell lysates. ICC/IF: HEK293 cells. IHC-P: Human kidney and stomach tissues. Flow Cyt (intra): HeLa cells.

常规说明
This antibody was developed as part of a collaboration between Epitomics, the National Cancer Institute's Center for Cancer Research and the lab of Dolph Hatfield. View antibodies from NCI Center for Cancer Research Collaboration.

Abcam recommended secondaries - Goat Anti-Rabbit HRP (ab205718) and Goat Anti-Rabbit Alexa Fluor® 488 (ab150077).

See other anti-rabbit secondary antibodies that can be used with this antibody.

This product is a recombinant monoclonal antibody, which offers several advantages including:
- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free production

For more information see here.

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

We are constantly working hard to ensure we provide our customers with best in class antibodies. As a result of this work we are pleased to now offer this antibody in purified format. We are in the process of updating our datasheets. The purified format is designated 'PUR' on our product labels. If you have any questions regarding this update, please contact our Scientific Support team.
**性能**

**形式**  
Liquid

**存放说明**  
Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C.  
Stable for 12 months at -20°C.

**存储溶液**  
pH: 7.20  
Preservative: 0.01% Sodium azide  
Constituents: 40% Glycerol, 0.05% BSA, 59% PBS

**纯度**  
Protein A purified

**克隆**  
单克隆

**克隆编号**  
EPNCIR144

**同种型**  
IgG

**应用**

**The Abpromise guarantee**  
Abpromise™承诺保证使用ab125066于以下的经测试应用

“应用说明”部分下显示的仅为推荐的起始稀释度; 实际最佳的稀释度/浓度应由使用者检定。

| 应用         | Ab评论 | 说明                                      |
|--------------|--------|-------------------------------------------|
| Flow Cyt (Intra) |        | 1/400.                                    |
| WB           | ★★★★★ (5) | 1/1000 - 1/10000. Detects a band of approximately 17 kDa  
(predicted molecular weight: 22 kDa). |
| IHC-P        |        | 1/50 - 1/250. Perform heat mediated antigen retrieval before commencing with IHC staining protocol.  
See IHC antigen retrieval protocols. |
| ICC          |        | Use at an assay dependent concentration. |

**靶标**

**功能**  
Protects cells against membrane lipid peroxidation and cell death. Required for normal sperm development and male fertility. Could play a major role in protecting mammals from the toxicity of ingested lipid hydroperoxides. Essential for embryonic development. Protects from radiation and oxidative damage.

**组织特异性**  
Present primarily in testis.

**序列相似性**  
Belongs to the glutathione peroxidase family.

**细胞定位**  
Mitochondrion. Cytoplasm.

**图片**

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**Western blot - Anti-Glutathione Peroxidase 4 antibody [EPNCIR144] (ab125066)**

**All lanes**: Anti-Glutathione Peroxidase 4 antibody [EPNCIR144] (ab125066) at 1/1000 dilution

**Lane 1**: Wild-type HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate

**Lane 2**: GPX4 knockout HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate

**Lane 3**: Jurkat (Human T cell leukemia cell line from peripheral blood) whole cell lysate

Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

**Predicted band size**: 22 kDa

**Observed band size**: 20 kDa

**Lanes 1 - 3**: Merged signal (red and green). Green - ab125066 observed at 20 kDa. Red - loading control ab8245 (Mouse anti-GAPDH antibody [6C5]) observed at 37 kDa.

ab125066 was shown to react with Glutathione Peroxidase 4 in wild-type HeLa cells in Western blot with loss of signal observed in GPX4 knockout cell line ab262509 (knockout cell lysate ab263935). Wild-type HeLa and GPX4 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3 % milk in TBS-T (0.1 % Tween®) before incubation with ab125066 and ab8245 (Mouse anti-GAPDH antibody [6C5]) overnight at 4 °C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.
Unpurified ab125066, at a 1/100 dilution, staining Glutathione Peroxidase 4 in paraffin-embedded human kidney tissue by immunohistochemistry.

Perform heat mediated antigen retrieval before commencing with IHC staining protocol.

Immunofluorescence staining of HEK293 cells with purified ab125066 at a working dilution of 1/200, counter-stained with DAPI. The secondary antibody was Alexa Fluor® 488 goat anti-rabbit (ab150077), used at a dilution of 1/1000. ab7291, a mouse anti-tubulin antibody (1/1000), was used to stain tubulin along with ab150120 (Alexa Fluor® 594 goat anti-mouse, 1/1000), shown in the top right hand panel. The cells were fixed in 4% PFA and permeabilized using 0.1% Triton X 100. The negative controls are shown in bottom middle and right hand panels - for negative control 1, purified ab125066 was used at a dilution of 1/500 followed by an Alexa Fluor® 594 goat anti-mouse antibody (ab150120) at a dilution of 1/500. For negative control 2, ab7291 (mouse anti-tubulin) was used at a dilution of 1/500 followed by an Alexa Fluor® 488 goat anti-rabbit antibody (ab150077) at a dilution of 1/400.
Intracellular Flow Cytometry analysis of HeLa (human cervix adenocarcinoma) cells labeling Glutathione Peroxidase 4 (red) with ab125066 at a 1/400 dilution. Cells were fixed with 4% paraformaldehyde and permeabilized with 90% methanol. A goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) was used as the secondary antibody at a 1/2000 dilution. Black - Rabbit monoclonal IgG (ab172730). Blue (unlabeled control) - Cells without incubation with the primary and secondary antibodies.

All lanes: Anti-Glutathione Peroxidase 4 antibody [EPNCIR144] (ab125066) at 1/20000 dilution (purified)

Lane 1: Mouse testis lysate
Lane 2: Rat testis lysate

Lysates/proteins at 20 µg per lane.

Secondary
All lanes: HRP goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 22 kDa
Observed band size: 17 kDa

Blocking buffer: 5% NFDM/TBST.
Dilution buffer: 5% NFDM/TBST.
**Western blot - Anti-Glutathione Peroxidase 4 antibody [EPNCIR144] (ab125066)**

| Lane  | Description                   |
|-------|-------------------------------|
| 1     | Human fetal liver tissue lysate |
| 2     | Jurkat cell lysate             |

**Secondary**

- **All lanes**: HRP goat anti-rabbit IgG (H+L) at 1/1000 dilution

**Predicted band size**: 22 kDa

**Observed band size**: 17 kDa

**Blocking buffer**: 5% NFDM/TBST.

**Dilution buffer**: 5% NFDM/TBST.

Immunohistochemical staining of paraffin embedded human stomach with purified ab125066 at a working dilution of 1/50. The secondary antibody used is HRP goat anti-rabbit IgG H&L (ab97051) at 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was performed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.

Unpurified ab125066 staining Glutathione Peroxidase 4 in the HeLa cell line from Human cervical cancer by ICC/IF (Immunocytochemistry/Immunofluorescence). Cells were fixed with methanol. Samples were incubated with primary antibody (1/500 in PBS) for 1 hour at 22°C. ab150081 an Alexa Fluor® 488-conjugated Goat anti-rabbit IgG polyclonal (1/200) was used as the secondary antibody. Nuclear staining was carried out with DAPI.
Western blot - Anti-Glutathione Peroxidase 4 antibody [EPNCIR144] (ab125066)
at 1/5000 dilution (purified) + HepG2 cell lysate at 20 µg

Secondary
HRP goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 22 kDa
Observed band size: 17 kDa

Blocking buffer: 5% NFDM/TBST.
Dilution buffer: 5% NFDM/TBST.

All lanes: Anti-Glutathione Peroxidase 4 antibody [EPNCIR144] (ab125066) at 1/1000 dilution (unpurified)

Lane 1: Human testis tissue lysate
Lane 2: Human seminoma tissue lysate
Lane 3: LnCaP cell lysate
Lane 4: Human fetal liver tissue lysate
Lane 5: Jurkat cell lysate
Lane 6: HepG2 cell lysate

Lysates/proteins at 10 µg per lane.

Secondary
All lanes: Goat anti-Rabbit HRP at 1/2000 dilution

Developed using the ECL technique.

Predicted band size: 22 kDa
Anti-Glutathione Peroxidase 4 antibody
[EPNOIR144] (ab125066)

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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MMP-3 (1B4): sc-21732

BACKGROUND

The matrix metalloproteinases (MMP) are a family of peptidase enzymes responsible for the degradation of extracellular matrix components, including collagen, gelatin, fibronectin, laminin and proteoglycan. Transcription of MMP genes is differentially activated by phorbol ester, lipopolysaccharide (LPS) or staphylococcal enterotoxin B (SEB). MMP catalysis requires both calcium and zinc. MMP-3, MMP-10 and MMP-11 (also designated stromelysin-1, 2 and 3, respectively) activate procollagenase. MMP-3 activation of procollagenase can occur via two pathways. Direct activation by MMP-3 is slow and activation by MMP-3 in conjunction with tissue or plasma proteinases is rapid. MMP-10 is expressed in small intestine, and at lower levels in lung and heart. MMP-11 is specifically expressed in stromal cells of breast carcinomas and contributes to epithelial cell malignancies.

CHROMOSOMAL LOCATION

Genetic locus: MMP3 (human) mapping to 11q22.2; Mmp3 (mouse) mapping to 9 A1.

SOURCE

MMP-3 (1B4) is a mouse monoclonal antibody raised against amino acids 317-327 of MMP-3 of human origin.

PRODUCT

Each vial contains 200 µg IgG1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MMP-3 (1B4) is available conjugated to agarose (sc-21732 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-21732 HRP), 200 µg/ml, for WB, IHOP and ELISA; to either phycoerythrin (sc-21732 PE), fluorescein (sc-21732 FITC), Alexa Fluor® 488 (sc-21732 AF488), Alexa Fluor® 546 (sc-21732 AF546), Alexa Fluor® 594 (sc-21732 AF594) or Alexa Fluor® 647 (sc-21732 AF647), 200 µg/ml, for WB (RGB), IF, IHOP and FCM; and to either Alexa Fluor® 680 (sc-21732 AF680) or Alexa Fluor® 790 (sc-21732 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

MMP-3 (1B4) is recommended for detection of MMP-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for MMP-3 siRNA (h): sc-29399, MMP-3 siRNA (m): sc-37265, MMP-3 shRNA Plasmid (h): sc-29399-SH, MMP-3 shRNA Plasmid (m): sc-37265-SH, MMP-3 shRNA (h) Lentiviral Particles: sc-29399-V and MMP-3 shRNA (m) Lentiviral Particles: sc-37265-V.

Molecular Weight of MMP-3: 57 kDa.

Positive Controls: HT-1080 whole cell lysate: sc-364183, HUV-EC-C whole cell lysate: sc-364180 or WI-38 whole cell lysate: sc-364260.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA

MMP-3 (1B4): sc-21732. Western blot analysis of MMP-3 expression in HT-1080 (A), ECV304 (B), HUV-EC-C (C), WI-38 (D), BJ (E) and CCD-1071SK (F) whole cell lysates.

MMP-3 (1B4): sc-21732. Immunofluorescence staining of methanol-fixed Y-79 cells showing membrane staining (A) immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate tissue showing cytoplasmic staining of glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

1. Borsani, E., et al. 2005. Histochemical and immunohistochemical evaluation of gingival collagen and metalloproteinases in peri-implantitis. Acta Histochem. 107: 231-240.
2. Moore, R.M., et al. 2010. α-lipoic acid inhibits thrombin-induced fetal membrane weakening in vitro. Placenta 31: 886-892.
3. Callahan, L.A., et al. 2013. Primary human chondrocyte extracellular matrix formation and phenotype maintenance using RGD-derivatized PEGDM hydrogels possessing a continuous Young’s modulus gradient. Acta Biomater. 9: 6095-6104.
4. Di Nisio, C., et al. 2015. A dual role for β1 Integrin in an in vitro Streptococcus mitis human gingival fibroblasts co-culture model in response to TEGDMA. Int. Endod. J. 48: 839-849.
5. Ichinose, J., et al. 2016. Immunohistochemical pattern analysis of squamous cell carcinoma: lung primary and metastatic tumors of head and neck. Lung Cancer 100: 96-101.
6. Neuhaus, J., et al. 2017. Protease expression levels in prostate cancer tissue can explain prostate cancer-associated seminal biomarkers—an explorative concept study. Int. J. Mol. Sci. 18: 976.
7. Jiang, J., et al. 2018. Oncogenic activity of Insulin in the development of non-small cell lung carcinoma. Oncol. Lett. 15: 447-452.
8. Spychala, A. and Rüther, U. 2019. FTO affects hippocampal function by regulation of BDNF processing. PLoS ONE 14: e0211937.
9. Li, X., et al. 2020. Tougu Xiaotong capsules may inhibit p38 MAPK pathway-mediated inflammation: in vivo and in vitro verification. J. Ethnopharmacol. 249: 112390.

RESEARCH USE

For research use only, not for use in diagnostic procedures.
MMP-13 (C-3): sc-515284

**BACKGROUND**

The matrix metalloproteinases (MMPs) are a family of peptidase enzymes responsible for the degradation of extracellular matrix components, including Collagen, Gelatin, Fibronectin, Laminin and proteoglycan. Transcription of MMP genes is differentially activated by phorbol ester, lipopolysaccharide (LPS) or staphylococcal enterotoxin B (SEB). MMP catalysis requires both calcium and zinc. MMP-13 (also designated collagenase-3) is produced by breast carcinomas and degrades collagen types I, II and III. MMP-13 has wide substrate specificity, and its physiologic expression is limited to situations in which rapid and effective remodeling of collagenous ECM takes place, such as fetal bone development and adult bone remodeling.

**REFERENCES**

1. Birkedal-Hansen, H., et al. 1993. Matrix metalloproteinases: a review. Crit. Rev. Oral Biol. Med. 4: 197-250.
2. Reinemer, P., et al. 1994. Structural implications for the role of the N terminus in the "superactivation" of collagenases. A crystallographic study. FEBS Lett. 338: 227-233.

**CHROMOSOMAL LOCATION**

Genetic locus: MMP13 (human) mapping to 11q22.2.

**SOURCE**

MMP-13 (C-3) is a mouse monoclonal antibody raised against amino acids 242-471 mapping at the C-terminus of MMP-13 of human origin.

**PRODUCT**

Each vial contains 200 µg IgG ε kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. MMP-13 (C-3) is available conjugated to agarose (sc-515284 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515284 HRP), 200 µg/ml, for WB, (HCIP) and ELISA; to either phycocyanin (sc-515284 PE), fluorescein (sc-515284 FITC), Alexa Fluor® 488 (sc-515284 AF488), Alexa Fluor® 546 (sc-515284 AF546), Alexa Fluor® 594 (sc-515284 AF594) or Alexa Fluor® 647 (sc-515284 AF647), 200 µg/ml, for WB (RGB), IF, HCIP and FC; and to either Alexa Fluor® 680 (sc-515284 AF680) or Alexa Fluor® 790 (sc-515284 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FC. Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA.

**APPLICATIONS**

MMP-13 (C-3) is recommended for detection of MMP-13 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). Suitable for use as control antibody for MMP-13 siRNA (h): sc-41559, MMP-13 shRNA Plasmid (h): sc-41559-SH and MMP-13 shRNA (h) Lentiviral Particles: sc-41559-V.

Molecular Weight of MMP-13: 48 kDa.

**STORAGE**

Store at 4°C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

**DATA**

![Western blot analysis of human recombinant MMP-13.](image)

**SELECT PRODUCT CITATIONS**

1. Hu, P.F., et al. 2018. Paeoniflorin inhibits IL-1β-induced MMP secretion via the NFκB pathway in chondrocytes. Exp. Ther. Med. 16: 1513-1519.
2. Guo, L., et al. 2019. Ipriflavone attenuates the degeneration of cartilage by blocking the Indian hedgehog pathway. Arthritis Res. Ther. 21: 109.
3. Zhu, B., et al. 2019. Desumoylation of aggrecan and collagen II facilitates degradation via aggrecanases in IL-1β-mediated osteoarthritis. J. Pain Res. 12: 2145-2153.
4. Basukala, O., et al. 2019. The HPV-18 E7 CKII phospho acceptor site is required for maintaining the transformed phenotype of cervical tumour-derived cells. PloS Pathog. 15: e1007769.
5. Killian, M.L., et al. 2019. Novel model for the induction of postnatal murine hip deformity. J. Orthop. Res. 37: 151-160.
6. Terabe, K., et al. 2019. Chondroprotective effects of 4-methylumbelliferone and hyaluronan synthase-2 overexpression involve changes in chondrocyte energy metabolism. J. Biol. Chem. 294: 17799-17817.
7. Chien, S.Y., et al. 2020. Noxginn inhibits IL-1β and BMP-2 expression, and attenuates cartilage degeneration and subchondral bone destruction in experimental osteoarthritis. Cells 9: 927.
8. Gao, H., et al. 2020. Salidroside alleviates cartilage degeneration through NFκB pathway in osteoarthritis rats. Drug Des. Devel. Ther. 14: 1445-1454.
9. Zhao, Y., et al. 2020. Cortistatin protects against intervertebral disc degeneration through targeting mitochondrial ROS-dependent NLRP3 inflammasome activation. Theranostics 10: 7015-7033.
10. Santarella, F., et al. 2020. Scaffolds functionalized with matrix from induced pluripotent stem cell fibroblasts for diabetic wound healing. Adv. Healthc. Mater. 9: e2000307.
11. Baddam, P., et al. 2020. Histological and molecular characterization of the growing nasal septum in mice. J. Anat. E-published.

**RESEARCH USE**

For research use only, not for use in diagnostic procedures.
**BACKGROUND**

The large chondroitin sulfate proteoglycan, aggrecan, is the predominant proteoglycan present in cartilage. Aggrecan is a member of the chondroitin sulphate proteoglycan family, which also includes versican/PGM, neurocan and brevican. Aggrecan is a complex multidomain macromolecule that undergoes extensive processing and post-translational modification. In cartilage, aggrecan forms aggregates with hyaluronan and link protein, embedded in a collagen network. Aggrecan accounts for the compressive stiffness and resilience of the hyaline cartilage. Many forms of inflammatory arthritis are shown to be accompanied with aggrecan degradation and loss from the cartilage.

**CHROMOSOMAL LOCATION**

Genetic locus: ACAN (human) mapping to 15q26.1.

**SOURCE**

aggrecan (4F4) is a mouse monoclonal antibody raised against human articular cartilage aggrecan.

**PRODUCT**

Each vial contains 200 µg IgG1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

aggrecan (4F4) is available conjugated to agarose (sc-33695 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-33695 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycocerythrin (sc-33695 PE), fluorescein (sc-33695 FITC), Alexa Fluor® 488 (sc-33695 AF488), Alexa Fluor® 546 (sc-33695 AF546), Alexa Fluor® 594 (sc-33695 AF594) or Alexa Fluor® 647 (sc-33695 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-33695 AF680) or Alexa Fluor® 790 (sc-33695 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

**APPLICATIONS**

aggrecan (4F4) is recommended for detection of aggrecan of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation (1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for aggrecan siRNA (h): sc-41897, aggrecan shRNA Plasmid (h): sc-41897-SH and aggrecan shRNA (h) Lentiviral Particles: sc-41897-V.

Molecular Weight of aggrecan: 200 kDa.

**STORAGE**

Store at 4°C. **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

**RESEARCH USE**

For research use only, not for use in diagnostic procedures.

**DATA**

**SELECT PRODUCT CITATIONS**

1. Henriksson, H.B., et al. 2009. Transplantation of human mesenchymal stem cells into intervertebral discs in a xenogeneic porcine model. Spine 34: 141-148.

2. Wilkins, A., et al. 2009. Human bone marrow-derived mesenchymal stem cells secrete brain-derived neurotrophic factor which promotes neuronal survival in vitro. Stem Cell Res. 3: 63-70.

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4. Mallam, E., et al. 2010. Characterization of in vitro expanded bone marrow-derived mesenchymal stem cells from patients with multiple sclerosis. Mult. Scler. 16: 909-918.

5. Kemp, K., et al. 2010. Chemotherapy-induced mesenchymal stem cell damage in patients with hematological malignancy. Ann. Hematol. 89: 701-713.

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7. Kemp, K., et al. 2011. Fusion between human mesenchymal stem cells and rodent cerebellar Purkinje cells. Neuropathol. Appl. Neurobiol. 37: 166-178.

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**PROTOCOLS**

See our web site at www.scbt.com for detailed protocols and support products.
**BACKGROUND**

Acyl-CoA synthetases, also known as long-chain fatty-acid CoA synthases (FACL) or palmitoyl-CoA ligases, include ACSL1-6, which are all single-pass membrane proteins localizing to the mitochondrion, microsome or peroxisome. ACSL proteins are important for synthesis of cellular lipids and for β-oxidation degradation. Specifically, ACSL proteins catalyze the activation of long-chain fatty acids to acyl-CoAs, which can be metabolized to form CO₂, triacylglycerol (TAG), phospholipids (PL) and cholesteryl esters (CE). ACSL3 preferentially utilizes laurate, myristate, arachidonate and eicosapentaenoate among saturated and unsaturated long chain fatty acids. FACL3 is expressed as two isoforms in various tissues, including brain, heart, placenta, prostate, skeletal muscle, testis and thymus. FACL4 preferentially utilizes arachidonate and is abundant in steroidogenic tissues. FAC4 may modulate female fertility and uterine prostaglandin production.

**CHROMOSOMAL LOCATION**

Genetic locus: ACSL4 (human) mapping to Xq23; Acsl4 (mouse) mapping to X F2.

**SOURCE**

ACSL4 (F-4) is a mouse monoclonal antibody raised against amino acids 623-675 mapping near the C-terminus of ACSL4 of human origin.

**PRODUCT**

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with <0.1% sodium azide and 0.1% gelatin.

ACSL4 (F-4) is available conjugated to agarose (sc-365230 AC), 500 µg/0.25 ml agarose in 1 ml for IP; to HRP (sc-365230 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365230 PE), fluorescein (sc-365230 FITC), Alexa Fluor® 488 (sc-365230 AF488), Alexa Fluor® 546 (sc-365230 AF546), Alexa Fluor® 594 (sc-365230 AF594) or Alexa Fluor® 647 (sc-365230 AF647), 200 µg/ml, for WB, (RGB), IHC(P) and FC; and to either Alexa Fluor® 680 (sc-365230 AF680) or Alexa Fluor® 790 (sc-365230 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

**APPLICATIONS**

ACSL4 (F-4) is recommended for detection of short isoform and long isoform of ACSL4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). Suitable for use as control antibody for ACSL4 siRNA (h): sc-60619, ACSL4 siRNA (m): sc-60620, ACSL4 shRNA Plasmid (h): sc-60619-SH, ACSL4 shRNA Plasmid (m): sc-60620-SH, ACSL4 shRNA (h) Lentiviral Particles: sc-60619-V and ACSL4 shRNA (m) Lentiviral Particles: sc-60620-V.

Molecular Weight of ACSL4: 75 kDa.

Positive Controls: Caco-2 cell lysate: sc-2262, HEK293T whole cell lysate: sc-45137 or HeLa whole cell lysate: sc-2200.

**STORAGE**

Store at 4°C, **“DO NOT FREEZE”**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

**DATA**

1. Herrera-Martinez, M., et al. 2013. Actin, RhoA, and Rab11 participation during encystment in Entamoeba invadens. Biomed Res. Int. 2013: 919345.
2. Xu, W.D., et al. 2015. Up-regulation of fatty acid oxidation in the ligament as a contributing factor of ankylosing spondylitis: a comparative proteomic study. J. Proteomics 113: 57-72.
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**SELECT PRODUCT CITATIONS**

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Product datasheet

Anti-Collagen II antibody [EPR12268] ab188570

RabMAb

★★★★★ 2 Abreviews  35 References  3 图像

概述

产品名称 Anti-Collagen II抗体[EPR12268]
描述 兔单克隆抗体[EPR12268] to Collagen II
宿主 Rabbit
经测试应
用 适用于: WB
不适用于: ICC/IF

种属反应性 与反应: Rat, Human
免疫原 Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
常规说明 This product is a recombinant monoclonal antibody, which offers several advantages including:
- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free production
For more information see here.

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

We are constantly working hard to ensure we provide our customers with best in class antibodies. As a result of this work we are pleased to now offer this antibody in purified format. We are in the process of updating our datasheets. The purified format is designated 'PUR' on our product labels. If you have any questions regarding this update, please contact our Scientific Support team.

性能

形式 Liquid
存放说明 Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
存储溶液 pH: 7.2
Preservative: 0.01% Sodium azide
Constituents: 59% PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
纯度 Protein A purified
**应用**

| 应用 | Ab评论 | 说明 |
|------|--------|------|
| WB   | 1/1000 - 1/10000. Predicted molecular weight: 141 kDa. | |

**应用说明**

Is unsuitable for ICC/IF.

**靶标**

**功能**

Type II collagen is specific for cartilaginous tissues. It is essential for the normal embryonic development of the skeleton, for linear growth and for the ability of cartilage to resist compressive forces.

**组织特异性**

Isoform 2 is highly expressed in juvenile chondrocyte and low in fetal chondrocyte.

**疾病相关**

Defects in COL2A1 are the cause of spondyloepiphysial dysplasia congenital type (SEDC) [MIM:183900]. This disorder is characterized by disproportionate short stature and pleiotropic involvement of the skeletal and ocular systems.

Defects in COL2A1 are the cause of spondyloepimetaphyseal dysplasia Strudwick type (SEMD-STR) [MIM:184250]. A bone disease characterized by disproportionate short stature from birth, with a very short trunk and shortened limbs, and skeletal abnormalities including lordosis, scoliosis, flattened vertebrae, pectus carinatum, coxa vara, clubfoot, and abnormal epiphyses or metaphyses. A distinctive radiographic feature is irregular sclerotic changes, described as dappled in the metaphyses of the long bones.

Defects in COL2A1 are the cause of achondrogenesis type 2 (ACG2) [MIM:200610]; also known as achondrogenesis-hypochondrogenesis type II. ACG2 is a disease characterized by the absence of ossification in the vertebral column, sacrum and pubic bones.

Defects in COL2A1 are the cause of Legg-Calve-Perthes disease (LCPD) [MIM:150600]; also known as Legg-Perthes disease or Perthes disease. LCPD is characterized by loss of circulation to the femoral head, resulting in avascular necrosis in a growing child. Clinical pictures of the disease vary, depending on the phase of disease progression through ischemia, revascularization, fracture and collapse, and repair and remodeling of the bone.

Defects in COL2A1 are the cause of Kniest dysplasia (KD) [MIM:156550]; also known as Kniest syndrome or metatropic dwarfism type II. KD is a moderately severe chondrodysplasia phenotype that results from mutations in the COL2A1 gene. Characteristics of the disorder include a short trunk and extremities, mid-face hypoplasia, cleft palate, myopia, retinal detachment, and hearing loss.

Defects in COL2A1 are a cause of primary avascular necrosis of femoral head (ANFH) [MIM:608805]; also known as ischemic necrosis of the femoral head or osteonecrosis of the femoral head. ANFH causes disability that often requires surgical intervention. Most cases are sporadic, but families in which there is an autosomal dominant inheritance of the disease have been identified. It has been estimated that 300,000 to 600,000 people in the United States have...
ANFH. Approximately 15,000 new cases of this common and disabling disorder are reported annually. The age at the onset is earlier than that for osteoarthritis. The diagnosis is typically made when patients are between the ages of 30 and 60 years. The clinical manifestations, such as pain on exertion, a limping gait, and a discrepancy in leg length, cause considerable disability. Moreover, nearly 10 percent of the 500,000 total hip arthroplasties performed each year in the United States involve patients with ANFH. As a result, this disease creates a substantial socioeconomic cost as well as a burden for patients and their families.

Defects in COL2A1 are the cause of osteoarthritis with mild chondrodysplasia (OACD) [MIM:604864]. Osteoarthritis is a common disease that produces joint pain and stiffness together with radiologic evidence of progressive degeneration of joint cartilage. Some forms of osteoarthritis are secondary to events such as trauma, infections, metabolic disorders, or congenital or heritable conditions that deform the epiphyses or related structures. In most patients, however, there is no readily identifiable cause of osteoarthritis. Inheritance in a Mendelian dominant manner has been demonstrated in some families with primary generalized osteoarthritis. Reports demonstrate coinheritance of primary generalized osteoarthritis with specific alleles of the gene COL2A1, the precursor of the major protein of cartilage.

Defects in COL2A1 are the cause of platyspondylic lethal skeletal dysplasia Torrance type (PLSD-T) [MIM:151210]. Platyspondylic lethal skeletal dysplasias (PLSDs) are a heterogeneous group of chondrodysplasias characterized by severe platyspondyly and limb shortening. PLSD-T is characterized by varying platyspondyly, short ribs with anterior cupping, hypoplasia of the lower ilia with broad ischial and pubic bones, and shortening of the tubular bones with splayed and cupped metaphyses. Histology of the growth plate typically shows focal hypercellularity with slightly enlarged chondrocytes in the resting cartilage and relatively well-preserved columnar formation and ossification at the chondro-osseous junction. PLSD-T is generally a perinatally lethal disease, but a few long-term survivors have been reported.

Defects in COL2A1 are the cause of multiple epiphyseal dysplasia with myopia and conductive deafness (EDMMD) [MIM:132450]. Multiple epiphyseal dysplasia is a generalized skeletal dysplasia associated with significant morbidity. Joint pain, joint deformity, waddling gait, and short stature are the main clinical signs and symptoms. EDMMD is an autosomal dominant disorder characterized by epiphyseal dysplasia associated with progressive myopia, retinal thinning, cataracts, retinal thinning, and conductive deafness.

Defects in COL2A1 are the cause of spondyloepiphyseal dysplasia (SPD) [MIM:271700]. SPD patients manifest short stature, midface hypoplasia, sensorineural hearing loss, spondyloepiphyseal dysplasia, platyspondyly and brachydactyly.

Defects in COL2A1 are the cause of Stickler syndrome type 1 (STL1) [MIM:108300]; also known as vitreous type 1, or membranous vitreous type. STL1 is an autosomal dominant form of Stickler syndrome, an inherited disorder that associates ocular signs with more or less complete forms of Pierre Robin sequence, bone disorders and sensorineural deafness. Ocular disorders may include juvenile cataract, myopia, strabismus, vitreoretinal or chorioretinal degeneration, retinal detachment, and chronic uveitis. Robin sequence includes an opening in the roof of the mouth (a cleft palate), a large tongue (macroGLOSSIA), and a small lower jaw (micrognathia). Bones are affected by slight platyspondylisis and large, often defective epiphyses. Juvenile joint laxity is followed by early signs of arthritis. The degree of hearing loss varies among affected individuals and may become more severe over time. Syndrome expressivity is variable.

Defects in COL2A1 are the cause of Stickler syndrome type 1 non-syndromic ocular (STL1O) [MIM:609508]. STL1O is an autosomal dominant form of Stickler syndrome characterized by the ocular signs typically seen in STL1 such as cataract, myopia, retinal detachment. STL1 systemic features of premature osteoarthritis, cleft palate, hearing impairment, and craniofacial abnormalities are either absent or very mild in STL1O patients.

Defects in COL2A1 are a cause of rhegmatogenous retinal detachment autosomal dominant (DRRD) [MIM:609508]. Rhegmatogenous retinal detachment most frequently results from a break or tear in the retina that allows fluid from the vitreous humor to enter the potential space beneath
the retina. It is often associated with pathologic myopia and in most cases leads to visual impairment or blindness if untreated.

序列相似性
Belongs to the fibrillar collagen family.
Contains 1 fibrillar collagen NC1 domain.
Contains 1 VWFC domain.

翻 译 后 修 饰
Proline residues at the third position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some or all of the chains. Proline residues at the second position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some of the chains.
The N-telopeptide is covalently linked to the helical COL2 region of alpha 1(IX), alpha 2(IX) and alpha 3(IX) chain. The C-telopeptide is covalently linked to another site in the helical region of alpha 3(IX) COL2.

细胞定位
Secreted > extracellular space > extracellular matrix.

Western blot - Anti-Collagen II antibody [EPR12268] (ab188570)

All lanes : Anti-Collagen II antibody [EPR12268] (ab188570) at 1/5000 dilution (purified)

Lane 1 : Rat cartilage lysate at 20 µg
Lane 2 : Human cartilage lysate at 15 µg

Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 141 kDa

Blocking and diluting buffer: 5% NFDM/TBST

Anti-Collagen II antibody [EPR12268] (ab188570) at 1/1000 dilution (purified) + Human Collagen II recombinant protein at 0.01 µg

Secondary
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

Predicted band size: 141 kDa
Additional bands at: 36 kDa (possible isoform)
Why choose a recombinant antibody?

- Research with confidence
  Consistent and reproducible results
- Long-term and scalable supply
  Recombinant technology
- Success from the first experiment
  Confirmed specificity
- Ethical standards compliant
  Animal-free production

Anti-Collagen II antibody [EPR12268] (ab188570)

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# ADAMTS5 Ab

**Cat.#:** DF13268  
**Concn.:** 1mg/ml  
**Source:** Rabbit  
**Mol.Wt.:** 72 kd  
**Clonality:** Polyclonal

**Size:** 100ul, 200ul

**Application:**  
WB 1:500-1:2000, IHC 1:50-1:200, ELISA(peptide) 1:20000-1:40000  
*The optimal dilutions should be determined by the end user.*

**Reactivity:**  
Human, Mouse, Rat

**Purification:**  
The antiserum was purified by peptide affinity chromatography using SulfoLink™ Coupling Resin (Thermo Fisher Scientific).

**Immunogen:**  
A synthesized peptide derived from human ADAMTS5, corresponding to a region within the internal amino acids.

**Uniprot:**  
Q9UNA0

**Storage:**  
Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at -20 °C. Stable for 12 months from date of receipt.

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**Western blot analysis on Mouse brain lysates using ADAMTS5 Ab**  
The lane on the left was treated with the antigen-specific peptide.

**DF13268 at 1/100 staining Human colon carcinoma tissue sections by IHC-P.**  
The tissue was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The tissue was then blocked and incubated with the Ab for 1.5 hours at 22°C. An HRP conjugated goat anti-rabbit Ab was used as the secondary Ab.

---

**IMPORTANT:** For western blot, incubate membrane with diluted primary Ab in 5% w/v milk, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.

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SLC3A2 Ab

Cat.#: DF7468  
Concn.: 1mg/ml  
Mol.Wt.: 67kDa

Size: 100ul, 200ul, 50ul  
Source: Rabbit  
Clonality: Polyclonal

Application:  
WB 1:500-1:2000, IHC 1:50-1:200, ELISA(peptide) 1:20000-1:40000  
*The optimal dilutions should be determined by the end user.

Reactivity:  
Human, Rat

Purification:  
The antiserum was purified by peptide affinity chromatography using SulfoLink™ Coupling Resin (Thermo Fisher Scientific).

Immunogen:  
A synthesized peptide derived from human SLC3A2, corresponding to a region within the internal amino acids.

Uniprot:  
P08195

Description:  
This gene is a member of the solute carrier family and encodes a cell surface, transmembrane protein. The protein exists as a heavy chain of a heterodimer, covalently bound through di-sulfide bonds to one of several possible light chains. The encoded transporter plays a role in regulation of intracellular calcium levels and transports L-type amino acids. Alternatively spliced transcript variants, encoding different isoforms, have been characterized.

Storage:  
Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at -20 °C. Stable for 12 months from date of receipt.

Western blot analysis of extracts from Rat muscle, using SLC3A2 Ab. The lane on the left was treated with blocking peptide.

DF7468 at 1/100 staining Rat brain tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the primary Ab at 4°C overnight. An HRP conjugated anti-Rabbit Ab was used as the secondary Ab.

**IMPORTANT:** For western blot, incubate membrane with diluted primary Ab in 5% w/v milk , 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking,
overnight.

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**xCT Ab**

Cat.#: DF12509  
Concn.: 1mg/ml  
Mol.Wt.: 40 kDa~45 kDa

Size: 100ul,200ul,50ul  
Source: Rabbit  
Clonality: Polyclonal

**Application:**  
WB 1:500-1:2000, IHC 1:50-1:200, IF/ICC 1:100-1:500  
*The optimal dilutions should be determined by the end user.

**Reactivity:**  
Human,Mouse,Rat,Monkey

**Purification:**  
The antiserum was purified by peptide affinity chromatography using SulfoLink™ Coupling Resin (Thermo Fisher Scientific).

**Immunogen:**  
A synthesized peptide derived from human xCT, corresponding to a region within the internal amino acids.

**Uniprot:**  
Q9UPY5

**Storage:**  
Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at -20 °C. Stable for 12 months from date of receipt.

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Western blot analysis of extracts from Rat kidney, using xCT Ab. The lane on the left was treated with blocking peptide.

DF12509 at 1/100 staining human mammary cancer tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the Ab for 1.5 hours at 22°C. An HRP conjugated goat anti-rabbit Ab was used as the secondary Ab.

DF12509 staining Hela by IF/ICC. The samples were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25°C. Samples were then incubated with primary Ab(DF12509 1:200) and mouse anti-beta tubulin Ab(T0023 1:200) for 1 hour at 37°C. An AlexaFluor594 conjugated goat anti-rabbit IgG(H+L) Ab(Red) and an AlexaFluor488 conjugated goat anti-mouse IgG(H+L) Ab(Green) were used as the secondary Ab. The nuclear counter stain is DAPI(blue).

**IMPORTANT:** For western blot, incubate membrane with diluted primary Ab in 5% w/v milk, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking,
overnight.

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FAK Antibody

For Research Use Only, Not For Use In Diagnostic Procedures

| Applications | WB, IP, IHC-P | Reactivity: | Sensitivity | MW (kDa) | Source | UniProt ID | Entrez Gene ID |
|--------------|--------------|-------------|-------------|----------|---------|------------|---------------|
|              |              | Human | Rabbit | 125 |             | Q55397     | 5747          |

Product Usage Information:

Application | Dilution
---|---
Western Blotting | 1:1000
Immunoprecipitation | 1:50
Immunohistochemistry (Paraffin) | 1:800

Storage:
Supplied in 10 mM sodium phosphate (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not abort the antibody.

Specificity / Sensitivity:
FAK Antibody detects endogenous levels of FAK protein. This antibody may cross-react with other activated receptor tyrosine kinases.
Species Reactivity:
Human, Mouse, Rat, Monkey, Bovine, Pig

Species predicted to react based on 100% sequence homology:
Chicken

Source / Purification:
Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding amino acid 715 of human FAK. Antibodies are purified by protein A and peptide affinity chromatography.

Background:
Focal adhesion kinase (FAK) is a widely expressed cytoplasmic protein tyrosine kinase involved in integrin-mediated signal transduction. It plays an important role in the control of several biological processes, including cell spreading, migration, and survival (1). Activation of FAK by integrin clustering leads to autophosphorylation at Tyr397, which is a binding site for the Src-family kinases FGR and PLCγ (2,3). Recruitment of Src-family kinases results in the phosphorylation of Tyr377, Tyr576, and Tyr925 in the catalytic domain, and Tyr921 and Tyr925 in the carboxy-terminal region of FAK (6,7).

1. Parsons, J.T. et al. (2000). Oncogene 19, 5506-13.
2. Schaefer, M.D. et al. (1994). Mol Cell Biol 14, 1660-8.
3. Cobb, H.S. et al. (1994). Mol Cell Biol 14, 147-55.
4. Chen, H.C. et al. (1996). J Biol Chem 271, 26952-9.

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Applications Key:
- WB: Western blot
- IP: Immunoprecipitation
- IHC: Immunohistochemistry
- ChIP: Chromatin immunoprecipitation
- IF: Immunofluorescence
- F: Flow Cytometry
- E: ELISA

Cross-Reactivity Key:
- Human, Mouse, Rat, Hamster, Pig, Mouse
- Chicken
- Drosophila, Xenopus, Zebrafish, Dog, Pig, Monkey
- M. musculus, O. melas, C. elegans

5. Zhang, X. et al. (1998). Proc Natl Acad Sci U S A 95, 9021-6.
6. Cobb, H.S. et al. (1995). Mol Cell Biol 15, 6046-63.
7. Schoeppel, D.D. et al. (1994). Nature 372, 786-791.

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

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Western blot analysis of extracts from control HEK293 cells (lane 1), or FAK knockout HEK293 cells (lane 2) using FAK Antibody #3285 (upper) or #4457 β-Actin (loading control) Rabbit mAb (lower). The absence of signal in FAK-knockout HEK293 cells confirms specificity of the antibody for FAK.

Immunohistochemical analysis of paraffin-embedded human breast carcinoma, using FAK Antibody.

Immunohistochemical analysis of paraffin-embedded human lung carcinoma, using FAK Antibody in the absence of control peptide (left) or antigen-specific peptide (right).
#3285

FAK Antibody

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**Product Usage Information**

| Application         | Dilution |
|---------------------|----------|
| Western Blotting    | 1:1000   |
| Immunoprecipitation | 1:50     |
| Immunohistochemistry | 1:250    |
| Immunofluorescence  | 1:800    |
| Flow Cytometry      | 1:400    |

**Storage**

Supplied in: 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

**Specificity / Sensitivity**

p44/42 MAP Kinase (137F5) Rabbit mAb detects endogenous levels of total p44/42 MAP kinase (p38α/p38β) protein. The antibody does not cross-react with JNK5/6 or p38 MAP kinase.

**Species Reactivity**

Human, Mouse, Rat, Hamster, Monkey, Pig, Bovine, Sheep, Guinea Pig, Chicken, Dog, Pig, and Canine

**Species noted to react based on 100% sequence homology:**

Chicken

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the C-terminus of human p44 MAP kinase.

**Background**

Mitogen-activated protein kinases (MAPKs) are a widely conserved family of serine/threonine protein kinases involved in many cellular programs, such as cell proliferation, differentiation, motility, and death. The p44/42 MAPK (Erk1/2) signaling pathway can be activated in response to a diverse range of extracellular stimuli including mitogens, growth factors, and cytokines (1-3), and research investigators consider it an important target in the diagnosis and treatment of cancer (4). Upon stimulation, a sequential three-part protein kinase cascade is initiated, consisting of a MAP kinase kinase kinase (MAPKKK or MKK3), a MAP kinase kinase (MAPKK or MKK1), and a MAP kinase (MAPK). p44/42 MAPKs have been identified, including members of the Raf family, as well as Mos and Sp100. MEK1 and MEK2 are the primary MAPK kinases in this pathway, (5,6). MKK1 and MKK2 activate p44 and p42 through phosphorylation on activation loop residues Thr202/Tyr204 and Thr185/Tyr187, respectively. Several downstream targets of p44/42 have been identified, including p38δ/ε (7) and the transcription factor Elk-1 (8). p44/42 are negatively regulated by a family of dual-specificity (Thr/Tyr) MAPK phosphatases, known as DUSPs or MKPs (10), along with MEK inhibitors, such as U0126 and PD98059.

**IMPORTANT!** For western blots, incubate membrane with diluted primary antibody in 1% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

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#4695
p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb

Western blot analysis of extracts from Hela, NH(3)T3 and C6 cells, using p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb.

Western blot analysis of extracts from Hela 293 cells, transfected with 100 nM SignalSilence® Control siRNA (Cat. No. 6201) or SignalSilence® p44/42 MAPK (Erk1/2) siRNA (Cat. No. 5157), using p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb #4695 and α-Tubulin (11H10) Rabbit mAb #2125. The p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb confirms silencing of p44/42 expression and α-Tubulin (11H10) Rabbit mAb is used to control for loading and specificity of p44/42 MAPK (Erk1/2) siRNA.

Immunohistochemical analysis of paraffin-embedded human colon carcinoma, using p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human breast carcinoma, using p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb in the presence of control peptide (left) or #240 p44/42 MAPK (Erk1/2) Blocking Peptide (p46/42 Sp党风) (right).

Immunohistochemical analysis of paraffin-embedded human breast carcinoma, showing cytoplasmic and nuclear localization, using p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human breast carcinoma, using p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb.

Confocal immunofluorescent analysis of NH(3)T3 cells, treated with either U0126 (MEK1/2 inhibitor) #9906 (M) or PD98059 (right), using p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb (green). Actin filaments have been labeled with DY-554 phalloidin (red).

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p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb

![Flow cytometric analysis of Jurkat cells using p44/42 MAPK (Erk1/2) (137F5) Rabbit mAb (solid line), compared to concentration-matched Rabbit (DA1E) mAb IgG XP® Isotype Control #3900 (dashed line). Anti-phospho-Erk1/2 (D15E) FluorPhenom Alexa Fluor® 488 Conjugate (#4412) was used as a secondary antibody.](image-url)
p44/42 MAPK (Erk1/2) (137F5) Rabbit
mAb

#4695

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Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb

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| Applications: | WB, IP, IHC-P, IF-JC, F |
|-----------------------------------------------|--------------------------|
| Reactivity: | H M R Hm Mm Mi |
| Sensitivity: | Endogenous |
| MW (kDa): | 44, 42 |
| Source/Igotype: | Rabbit IgG |
| UniProt ID: | P27381, P28482 |
| Entrez Gene ID: | 5595, 5594 |

**Product Usage Information**

**Application**
- Western Blotting: Dilution 1:2000
- Immunoprecipitation: 1:50
- Immunohistochemistry (Paraffin): 1:200 - 1:800
- Immunofluorescence (Immunocytochemistry): 1:200 - 1:400
- Flow Cytometry: 1:800 - 1:1600

**Storage**
Supplied as 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 1% BSA, 0.02% sodium azide. Store at -20°C. Do not freeze the antibody.

**Specificity / Sensitivity**
Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb detects endogenous levels of p44 and p42 MAPK (Erk1 and Erk2) when dually phosphorylated at Thr202 and Tyr204 of Erk1 (Thr185 and Tyr187 of Erk2), and singly phosphorylated at Thr202. This antibody does not cross-react with the corresponding phosphorylated residues of either JNK/SAPK or p38 MAP kinases.

**Species Reactivity**
- Human, Mouse, Rat, Hamster, Monkey, Mink, Dog, Man, Canine, Zebrafish, Bovine, Dog, Pig, S. cerevisiae

**Species predicted to react based on 100% sequence homology:**
- Chicken, C. elegans

**Source / Purification**
Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr202/Tyr204 of human p44 MAP kinase.

**Background**
Mitogen-activated protein kinases (MAPKs) are a widely conserved family of serine/threonine protein kinases involved in many cellular programs, such as cell proliferation, differentiation, motility, and death. The p44/42 MAPK (Erk1/2) signaling pathway can be activated in response to a diverse range of extracellular stimuli, including mitogens, growth factors, and cytokines (1-3), and research investigations consider it an important target in the diagnosis and treatment of cancer (4). Upon stimulation, a sequential three-kinase protein kinase cascade is initiated, consisting of a MAP kinase kinase kinase (MAPKKK or MAP3K), a MAP kinase kinase (MAPKK or MAP2K), and a MAP kinase (MAPK). Multiple p44/42 MAPKs have been identified, including members of the Raf family, as well as Mos and T helpers. MEK1 and MEK2 are the primary MAPKs in this pathway (5,6). MEK1 and MEK2 activate p44 and p42 through phosphorylation of activation loop residues Thr202/Tyr204 and Thr185/Tyr187, respectively. Several downstream targets of p44/42 have been identified, including Elk1 (7) and the transcription factor Ets-1 (8,9). p44/42 are negatively regulated by a family of dual-specificity (Thr/Tyr) MAPK phosphatases, known as DUSPs or MAPP (10), along with MEK inhibitors, such as U0126 and PD98059.

**APPLICATIONS KEY**
- WB: Western blot
- IP: Immunoprecipitation
- IHC: Immunohistochemistry
- ChIP: Chromatin Immunoprecipitation
- FLIP: Flow Cytometry
- E-P: ELISA

**CROSS-REACTIVITY KEY**
- H: Human
- M: Mouse
- R: Rat
- Hm: Hamster
- Mi: Mink
- C: Chicken
- Dm: Dog
- Monkeys (Mental, Zebrafish, S. cerevisiae)
- Ce: C. elegans
- H: Horse
- A: All species expected

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 3% w/v BSA, 1X TBS, 0.1% Tween 20 at 4°C with gentle shaking, overnight.

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#4370
Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb

Western blot analysis of extracts from COS cells, untreated or treated with either U0126 (20 mM for 10 min) or TPA #4174 (10 μM for 10 min), using Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb #4370 and p44/42 MAPK (Erk1/2) (2A7) Mouse mAb #9107.

Western blot analysis of extracts from 3T3, NIH/3T3 and COS cells, treated with a phosphatase or TPA #4174 as indicated, using Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb (upper), or p44/42 MAPK (Erk1/2) (1:273) Rabbit mAb #4695 (lower).

Immunohistochemical analysis of paraffin-embedded human breast carcinoma using Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human lung carcinoma, untreated (left) or A phosphotase-treated (right), using Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb on SignalStain® Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) IHC Detection Kit #1209 (paraffin-embedded NIH/3T3 cells, treated with U0126 #9903 (left) or TPA #4174 (right).

Immunohistochemical analysis using Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb on SignalStain® Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) IHC Detection Kit #1209 (paraffin-embedded NIH/3T3 cells, treated with U0126 #9903 (left) or TPA #4174 (right).

Confocal immunofluorescent analysis of Drosophila egg chambers, untreated (top) or a phosphatase-treated (bottom), using Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb #4370 (green) and SS Ribosomal Protein (54D2) Mouse mAb #2317 (red). Blue pseudocolor = DRAQ5® #4694 (fluorescent DNA dye).
#4370
Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb

Confocal immunofluorescent analysis of HT1080 cells, stained overnight then treated with U0126 #89853 (10 μM, 2 h; red) or PD98059 (10 μM, 30 min; green) using Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb #4370 (green) and β-Actin (D6A8) Mouse mAb #8457 (red). Blue pseudocolor = DAPI® #4054 fluorescent DNA dye.

Flow cytometric analysis of Jurkat cells, treated with U0126 (10 μM, 2 h; green), or treated with TPA #417K (200 nM, 30 min; blue) using Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb (solid line) or concentration-matched Rabbit (D4-1F) mAb IgG XP® Isotype Control #9300 (dashed line). Anti-CD3e (2H7) Alexa Fluor® 488 Conjugate #4347 was used as a secondary antibody.

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#4370
Phospho-p44/42 MAPK (Erk1/2) (Thr202/Tyr204) (D13.14.4E) XP® Rabbit mAb

**Limitation**

This antibody may be used for immunohistochemistry, Western blotting and intracellular staining. Please refer to our Immunohistochemistry and Immunofluorescence and Western Blot Protocols. This conjugate is not recommended for flow cytometry. For research use only. This product is intended for human and animal research. Use in human in vitro diagnostic procedures or in human or animal therapies is not authorized nor implied.

**Staining Specificity**

Rabbit polyclonal antibodies were generated against a synthetic peptide. The specificity of this antibody was demonstrated by amino acid sequence comparison. This antibody is not cross-reactive with non-phosphorylated Erk1/2 (p44/42) MAPK. This antibody is suitable for the detection of phospho-p44/42 MAPK by using Western blotting and immunohistochemistry.

**Limitations**

This antibody is not recommended for flow cytometry. This antibody is not intended for use in any other test procedures where sensitivity has been shown to be critical, such as ELISA, radioimmunoassay, cell sorting, etc. This antibody is not intended for therapeutic use in humans.

It is the responsibility of the end user to determine the suitability of this antibody for any particular purpose. No claim of any warranty or fitness for any particular purpose is expressly or impliedly made. It is the responsibility of the end user to determine the suitability of this antibody for any particular purpose. No claim of any warranty or fitness for any particular purpose is expressly or impliedly made. It is the responsibility of the end user to determine the suitability of this antibody for any particular purpose. No claim of any warranty or fitness for any particular purpose is expressly or impliedly made.
NF-κB p65 (L8F6) Mouse mAb

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| Applications | Reactivity | Sensitivity | MW (kDa) | Source/Isotype | UniProt ID | Entrez Gene ID |
|--------------|------------|-------------|----------|----------------|------------|----------------|
| WB, IP, IHC-P, F, CH- | H M R H H | Endogenous | 65 | Mouse IgG2b | QH4206 | 5970 |

Product Usage Information

For optimal CNP results, use 10 μg of antibody and 10 μg of chromatin (approximately 4 x 10^9 cells) per IP.

This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

Application

- Western Blotting
  - Dilution: 1:1000
- Immunoprecipitation
  - Dilution: 1:100
- Immunohistochemistry (Paraffin)
  - Dilution: 1:200 - 1:800
- Immunofluorescence (Immunocytochemistry)
  - Dilution: 1:400 - 1:1000
- Flow Cytometry
  - Dilution: 1:200 - 1:800
- Chromatin IP
  - Dilution: 1:50

Storage

Supplied at 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity / Sensitivity

NF-κB p65 (L8F6) Mouse mAb recognizes endogenous levels of total NF-κB p65 protein.

Species Reactivity

Human, Mouse, Rat, Hamster, Monkey, Mink, Bovine, Dog, Pig

Source / Purification

Monoclonal antibody is produced by immortalizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human NF-κB protein.

Background

Transcription factors of the nuclear factor κB (NF-κB) family play a pivotal role in inflammatory and immune responses (1,2). There are five family members in mammals: RelA (p65), RelB, NF-κB1 (p105/p50), and NF-κB2 (p100/p52). Both p105 and p100 are proteolytically processed by the proteasome to produce p50 and p52, respectively. Rel proteins bind p50 and p52 to form dimers capable of binding DNA and regulating transcription. In unstimulated cells, NF-κB is sequestered in the cytoplasm by IkB inhibitory proteins (3,4). NF-κB-activating agents can induce the phosphorylation of IkB proteins, targeting them for rapid degradation through the ubiquitin-proteasome pathway and releasing NF-κB to enter the nucleus where it regulates gene expression (4-6). IKK and IKKα (IKK1) regulate the phosphorylation and processing of NF-κB1 (p105) to produce p52, which translocates to the nucleus (5-11).

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5. Whitsel, S.J. et al. (1991) EMBO J. 10, 1413-23.
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11. Xiao, G. et al. (2001) Mol Cell 7, 401-9.

APPLICATIONS KEY: WB = Western blot; IP = Immunoprecipitation; IHC = Immunohistochemistry; CH- = Chromatin immunoprecipitation; F = Flow Cytometry; E-P = ELISA-Competitive

CROSS-REACTIVITY KEY: H = human; M = mouse; R = rat; Hm = hamster; Mm = monkey; Ve = vervet; Mm = mouse; Ch = chicken; Dm = Drosophila; X = Xenopus; Z = zebrafish; B = bovine; Dg = dog; P = pig; Sc = Saccharomyces Cereviseae; Ce = Caenorhabditis elegans; H = horse; AB = all species expected

SPECIES REACTIVITY: WESTERN BLOT

- 10% SDS-PAGE (reducing) with 1 mg/ml BSA, 0.1% Tween 20 at 4°C with gentle shaking, overnight.

IMPORTANT!: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween 20 at 4°C with gentle shaking, overnight.
#6956
NF-κB p65 (L8F6) Mouse mAb

Western blot analysis of extracts from control HeLa cells (lane 1) or NF-κB p65 knockout HeLa cells (lane 2), using NF-κB p65 (L8F6) Mouse mAb #6956 (upper) or β-actin (13055) Rabbit mAb #8170 (lower). The absence of signal in the NF-κB p65 knockout HeLa cells confirms the specificity of the antibody for NF-κB p65.

Western blot analysis of extracts from HeLa cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #80008 (5) or SignalSilence® NF-κB p65 siRNA I #36661 (5), using NF-κB p65 (L8F6) Mouse mAb (upper) or α-Tubulin (11480) Rabbit mAb #2125 (lower). The NF-κB p65 (L8F6) Mouse mAb confirms silencing of NF-κB p65 expression, while the α-Tubulin (11480) Rabbit mAb is used as a loading control.

Immunohistochemical analysis of human chronic cholecystitis tissue using NF-κB p65 (L8F6) Mouse mAb.

Immunohistochemical analysis of paraffin-embedded OVCA432 cell pellets treated with Human Tumor Necrosis Factor-α (hTNF-α) #8902 (5) or treated with SignalSilence® NF-κB p65 siRNA I #36661 (5), using NF-κB p65 (L8F6) Mouse mAb.

Immunohistochemical analysis of paraffin-embedded HeLa cell pellets, untreated (left) or treated with Human Tumor Necrosis Factor-α (hTNF-α) #8902 (right), using NF-κB p65 (L8F6) Mouse mAb.
Confluent immunofluorescent analysis of HeLa cells, untreated (left) or treated with Human Tumor Necrosis Factor-α (hTNF-α) #9022 (20 ng/mL), 20 min; r.t., using NF-κB p65 (L8F6) Mouse mAb (solid line) or concentration-matched Mouse (G3A1) mAb IgG1 isotype Control #6416 (dashed line). Anti-mouse IgG (H+L) Fab’ (FITC) Fragment (Alexa Fluor® 488 Conjugate) #4406 was used as a secondary antibody.

Flow cytometric analysis of MO7 cells using NF-κB p65 (L8F6) Mouse mAb (solid line) compared to a concentration-matched Mouse (G3A1) mAb IgG1 isotype Control #6416 (dashed line). Anti-mouse IgG (H+L) Fab’ (FITC) Fragment (Alexa Fluor® 488 Conjugate) #4406 was used as a secondary antibody.

Chromatin immunoprecipitation (ChIP) with Anti NF-κB p65 (L8F6) antibody was performed using SimpleChIP Enzymatic Chromatin IP Kit (Magnetic Beads) #5003. The enriched DNA was quantified by real-time PCR using SimpleChIP Human NF-κB Promoter Primers #5652, Human IL-1α promoter primers, and SimpleChIP Human α Satellite Repeat Primers #4486. The amount of immunoprecipitated DNA in each sample is represented as signal relative to the total amount of input chromatin, which is equivalent to one.
Akt (pan) (11E7) Rabbit mAb

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| Applications: | WB, IP, IHC-P, IF-IC, F | Reactivity: | H M R Mk | Sensitivity: | Endogenous | MW (kDa): | 60 | Source/Igotype: | Rabbit IgG | UniProt ID | P31751; Q9Y243; P31749 | Enzyme Gene Id | 208, 10000, 207 |
|--------------|--------------------------|-------------|---------|-------------|-------------|-----------|-----|----------------|------------|------------|----------------|----------------|----------------|

**Product Usage Information:**

**Application**
- Western Blotting: 1:1000
- Immunoprecipitation: 1:100
- Immunohistochemistry (Paraffin): 1:200
- Immunofluorescence (Immunocytochemistry): 1:100
- Flow Cytometry: 1:100

**Storage**
- Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μg/mL BSA, 50% glycerol and less than 0.05% sodium azide. Store at -20°C. Do not refreeze the antibody.

**Specificity / Sensitivity**
- Akt (pan) (11E7) Rabbit mAb detects endogenous levels of total Akt protein. This antibody does not cross-react with other related proteins.

**Species Reactivity:**
- Human, Mouse, Rat, Monkey

**Source / Purification**
- Monoclonal antibody is produced by immunizing animals with a synthetic peptide at the carboxy-terminal sequence of mouse Akt.

**Background**
- Akt, also referred to as PKB or Rsk, plays a critical role in controlling survival and apoptosis (1-3). This protein kinase is activated by insulin and various growth and survival factors to function in a well-characterized pathway involving F3 kinase (2,3). Akt is activated by phosphorylation binding and activation kisp phosphatase at Thr308 by PDK1 (4) and by phosphatase within the carboxy terminus at Ser473. The previously elusive PDK2 responsible for phosphorylation of Akt at Ser473 has been identified as mammalian target of rapamycin (mTOR) in a rapamycin-resistant complex with mTOR and raptor and Ser 1 (6). Akt promotes cell survival by inhibiting apoptosis through phosphorylation and inactivation of several targets, including Bad (7), forkhead transcription factors (8), cofilin (9), and caspase-9. PKT/PIM phosphatase is a major negative regulator of the F3 kinase/Akt signaling pathway (10). LY294002 is a specific

**Species Reactivity**
- Determined by testing at least one approved application (e.g., western blot).

**APPLICATIONS KEY:**
- WB: Western blot
- IP: Immunoprecipitation
- IHC: Immunohistochemistry
- ChIP: Chromatin Immunoprecipitation
- IF: Immunofluorescence
- F: Flow Cytometry
- E-P: ELISA

**CROSS-REACTIVITY KEY:**
- Human
- Mouse
- Rat
- Hamster
- Rabbit
- Sheep
- Goat
- Chicken
- Dog
- Horse
- Pig
- SC: Syrian
c- C: Cebus
d- E: Equus
f- H: Homo
- B: Babes
- All species suspected

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 1% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
Akt (pan) (11E7) Rabbit mAb

Western blot analysis of recombinant Akt 1, Akt 2, and Akt 3 proteins, and extracts from HeLa, C2C12, OIs, and COS cells, using Akt (pan) (11E7) Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human breast carcinoma using Akt (pan) (11E7) Rabbit mAb in the presence of control peptide (left) or Akt (pan) (11E7) Blocking Peptide #1095 (right).

Immunohistochemical analysis of paraffin-embedded human lung carcinoma, using Akt (pan) (11E7) Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human melanoma, using Akt (11E7) Rabbit mAb.

Immunohistochemical analysis using Akt (pan) (11E7) Rabbit mAb on SignalSliders™ Phospho-Akt (Ser473) (BCC10) BC20 C8-11 paraffin-embedded U2OS cells, untreated (left) or LY294002-treated (right). Note the lack of phosphorylated Akt-associated stain at the membrane of the LY294002 treated cells.

Immunohistochemical analysis of paraffin-embedded HeLa cells untreated (left) or transfected with Akt 10G Kirsten SarCon™ shRNA Mix (New England BioLabs #22035) (right), using Akt (pan) (11E7) Rabbit mAb (top) or Cleaved Caspase-3 (Asp175) #9661 (bottom). Note the induction of cleaved caspase-3 in Akt-deficient cells.
Akt (pan) (11E7) Rabbit mAb

Confocal immunofluorescent analysis of HeLa cells, serum-starved (left) or insulin-treated (right), using Akt (pan) (11E7) Rabbit mAb (green), DAPI nuclear stain (blue), and pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).

Flow cytometric analysis of untreated Jurkat cells, using Akt (pan) (11E7) Rabbit mAb (blue) compared to a nonspecific negative control antibody (red).
Akt (pan) (1E7) Rabbit mAb

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Product Usage Information

**Application:**
- Western Blotting
- Immunoprecipitation
- Immunohistochemistry (Paraffin)
- Immunofluorescence (Immunochemistry)
- Flow Cytometry

**Dilution:**
- 1:2000
- 1:50
- 1:50 - 1:200
- 1:400 - 1:1800
- 1:100 - 1:1400

**Storage:**
Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not refreeze the antibody.

**Specificity/Sensitivity**
- Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb detects endogenous levels of Akt only when phosphorylated at Ser473.
- Species Reactivity:
  - Human, Mouse, Rat, Hamster, Monkey, Dog, Rabbit, Bovine
- Species predicted to react based on 100% sequence homology:
  - Chicken, Xenopus, Dog, Pig

**Source/Purification**
Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues around Ser473 of human Akt.

**Background**
Akt, also referred to as PKB or RAC, plays a critical role in controlling survival and apoptosis (-10). This protein kinase is activated by insulin and various growth and survival factors to function in a wortmannin-sensitive pathway involving PI3 kinase (2,3). Akt is activated by phosphatidylinositol 3-kinase and its substrates in the cytosol and plasma membrane. The previously elusive PKD1 responsible for phosphorylation of Akt at Ser473 has been identified as mammalian target of rapamycin (mTOR) in a rapamycin-sensitive complex with rictor and Sin1 (5-6). Akt promotes cell survival by inhibiting apoptosis through phosphorylation and inactivation of several targets, including Bad (7), forkhead transcription factors (8), c-myc (9), and caspase-9. PI3K axis is a major negative regulator of the FAS/CD95/FADD death signaling pathway (10). LY294002 is a specific PI3K inhibitor (11). Another essential Akt function is the regulation of glucose synthesis through phosphorylation and inactivation of GSK-3a and (b) (12,13). Akt may also play a role in insulin stimulation of glycogen synthesis (13). In addition to its role in survival and glycogen synthesis, Akt is involved in cell cycle regulation by preventing GSK-3-mediated phosphorylation and degradation of cyclin D1 (14) and by negatively regulating the cyclin dependent kinase inhibitors p21 (15) and p27 (16). Wnt/cyclin (17). Akt also plays a critical role in cell growth by direct phosphorylating mTOR in a rapamycin-sensitive complex containing raptor (17). More importantly, Akt phosphorylates and inactivates tubulin (76G2), an inhibitor of mTOR within the mTOR-raptor complex (18,19).

**Applications Key:**
- WB: Western Blot
- IP: Immunoprecipitation
- IHC: Immunohistochemistry
- ChIP: Chromatin Immunoprecipitation
- F: Fluorescent
- LS: Labeling
- IR: Immunoreactivity
- F: Flow Cytometry
- E: ELISA

**Cross-Reactivity:**
- H: Human
- M: Mouse
- R: Rat
- H: Hamster
- M: Monkey
- V: Vertebrate
- N: Non-Vertebrate
- C: Chicken
- D: Drosophila
- X: Xenopus
- Z: Zebrafish
- B: Bovine
- D: Dog
- P: Pig
- S: Sheep
- C: Canine
- O: Other
- A: All

**Species Reactivity:**
Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Important Notes:** For western blots, incubate membrane with diluted primary antibody in 1% w/v BSA, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb

Western blot analysis of extracts from PC-3 cells, untreated or LY294002-treated, and MDA-MB-231 cells, serum-starved or PDGF-treated, using Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb (upper) or Akt (pan) (29D7) Rabbit mAb #4691 (lower).

Immunoprecipitation of phospho-Akt (Ser473) from Jurkat extracts treated with Cycloheximide #9906 (100 μM, 30 min). Lane 1 is 10% input. Lane 2 is Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb, and lane 3 is Rabbit (DA1E) mAb IgG XP® Isotype Control #3900. Western blot analysis was performed with Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb. Anti-rabbit IgG, HRP-linked Antibody #7074 was used as a secondary antibody.

Immunohistochemical analysis of paraffin-embedded MDA-MB-468 xenograft using Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb (left) or PTEN (139G) Rabbit mAb (right). Note the presence of P-Akt staining in the PTEN deficient MDA-MB-468 cells.

Immunohistochemical analysis of paraffin-embedded human breast carcinoma comparing SignalBlast® Antibody Duet #8112 (left) to TBS/10% normal goat serum (right) using Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb #4691.

Immunohistochemical analysis of paraffin-embedded human breast carcinoma using Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb.

Immunohistochemical analysis using Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb or SignalBlast® Phospho-Akt (Ser473) HC Controls #8101 (paraffin-embedded LNCaP cells, untreated (left) or LY294002-treated (right)).
#4060
Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb

Immunohistochemical analysis of paraffin-embedded human lung carcinoma using Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded PTEN heterozygous mutant mouse aortoarteriopathy using Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb. (Tissue section courtesy of Dr. S. Scher, Brigham and Women’s Hospital, Harvard Medical School, Boston, MA.)

Centrifugal immunofluorescent analysis of C2C12 cells, lytrophilic control (C2C12) lane (right), using Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb (green). Actin filaments have been labeled with Alexa Fluor® 647 Phalloidin (red). Blue pseudocolor = DRAQ® 5 (fluorescent DNA dye).

Flow cytometric analysis of Jurkat cells, unstimulated (green) or treated with Y27632 #9010, Wortmannin #9991, and U0126 #9903 (50 µM, 1 µM, and 10 µM, 2 hr, blue) using Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb (solid line) or concentration-matched Rabbit (DA1E) mAb IgG XP® Isotype Control #9000 (dashed line). Anti-rabbit IgG (H+L), F(ab')2 Fragment (Alexa Fluor® 488 Conjugate) #4442 was used as a secondary antibody.
Phospho-Akt (Ser473) (D9E) XP® Rabbit mAb

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PI3 Kinase p110α (C73F8) Rabbit mAb

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**Applications:** WB, IP

**Reactivity:** H, M, R, B

**Sensitivity:** Endogenous

**MW (kDa):** 110

**Source/Isotype:** Rabbit IgG

**UniProt ID:** P42336

**Entrez Gene ID:** 5290

**Storage:**
Supplied at 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/mL BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

**Specificity / Sensitivity:**
PI3 Kinase p110α (C73F8) Rabbit mAb detects endogenous levels of total PI3K p110α protein.

**Species Reactivity:**
Human, Mouse, Rat, Bovine

**Source / Purification:**
Monoclonal antibody is produced by immunizing animals with a synthetic peptide surrounding Arg200 of the sequence of human PI3K p110α.

**Background:**
Phosphoinositide 3-kinase (PI3K) catalyzes the production of phosphatidylinositol-3,4,5-trisphosphate by phosphorylating phosphatidylinositol(4,5)-bisphosphate (PIP2) and phosphatidylinositol-4,5-bisphosphate (PIP). Growth factors and hormone trigger this phosphorylation event, which in turn coordinates cell growth, cell cycle entry, cell migration, and cell survival (1). PI3K regulates various protein kinases, lipid kinases, and PTEN reverses this process, and research studies have shown that the PI3K signaling pathway is constitutively activated in human cancers that have loss of function of PTEN (2). PI3Ks are composed of a catalytic subunit (p110) and a regulatory subunit. Various isoforms of the catalytic subunit (p110α, p110β, p110γ, and p110δ) have been isolated, and the regulatory subunits that associate with p110α, p110β, and p110γ are p85α and p58β (3). In contrast, p110y associates with a p110 regulatory subunit that is unrelated to p85. Furthermore, p110y is activated by subunits of hematopoietic G proteins (4).

1. Cantley, L.C. (2002) Science 296, 1655-7.
2. Simpson, L. and Parhofer, K.G. (2001) Exp Cell Res 264, 25-41.
3. Neel, L.M. et al. (2002) Biochem Biophys Acta 1604, 23-40.

**Species Reactivity:**
Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Applications:**
- WB: Western blot
- IP: Immunoprecipitation
- IHC: Immunohistochemistry
- ChIP: Chromatin Immunoprecipitation
- F: Flow Cytometry
- E-P: ELISA-Peptide

**CROSS-REACTIVITY:**
- Human: Mouse: Rat: Hamster: Mice: Monkey: Ve: v: Mi: m: C: chicken: O: D: O: Xenopus: X: zebrafish: S: bovine: Dg: dog: Pg: pig: Sc: S: Canine: O: C: M: equine: H: horse: A: all species expected

**IMPORTANT:** For western blots, incubate with diluted primary antibody in 3% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

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U.S. Patent No. 7,429,457, foreign equivalents, and related patents deriving therefrom.
Western blot analysis of extracts from HeLa cells and neonatal mouse brain using PI3 Kinase p110α (C73F8) Rabbit mAb.
#4249
PI3 Kinase p110α (C73F8) Rabbit mAb

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**p38 MAPK (D13E1) XP® Rabbit mAb**

| Applications: | WB, IHC-P, FC, F | Reactivity: | H M H M R H M R B F | Sensitivity: | MW (kDa): | Source/Isotype: | UniProt ID: | Entrez Gene ID: |
|---------------|-----------------|-------------|--------------------|--------------|-----------|----------------|------------|--------------|
|               |                 |             | Endogenous         | 40           |           | Rabbit IgG    | Q16338     | 1432, 6300, 5560 |

**Product Usage Information:**

**Application**

- Western Blotting: 1:1000
- Immunohistochemistry: 1:400
- Immunofluorescence: 1:200
- Flow Cytometry: 1:800

**Storage**

Supplied as 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

**Specificity / Sensitivity**

**p38 MAPK (D13E1) XP® Rabbit mAb** recognizes endogenous levels of total p38α, β, or γ MAPK protein. This antibody does not recognize p38β, SAPK/JNK, or p44/42 MAPK proteins.

**Species Reactivity:**

- Human, Mouse, Rat, Hamster, Monkey, Bovine, Pig

**Species predicted to react based on 100% sequence homology:**

- Chicken

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human p38α protein.

**Background**

p38 MAP kinase (MAPK), also called RH (1) or CSBP (2), is a member of the mitogen-activated protein kinase (MAPK) superfamily of stress-activated protein kinases. The MAPK superfamily includes ERK (3), JNK (4), and p38 (5). The p38 MAPKs are activated by a variety of stimuli including cytokines, growth factors, and stresses that cause an elevation in intracellular free calcium, such as heat shock, osmotic stress, and oxidative stress. The activation of p38 MAPK results in the phosphorylation of downstream targets, which leads to cell proliferation, differentiation, survival, and death.

**Applications KEY**

- WB: Western blot
- IP: Immunoprecipitation
- IHC: Immunohistochemistry
- CSBP: Chromosome binding probe
- F: Flow cytometry
- E1P: ELISA/Peptide

**Cross-Reactivity KEY**

- Human, Mouse, Rat, Hamster, Monkey, Bovine, Chicken, Dog, Pig, Sheep, Goat, Rabbit, Ovine, Canine, Feline, Equine

**Species reactivity is determined by testing in at least one approved application (e.g., western blot).**

**IMPERATIVE:** For western blots, incubate membrane with diluted primary antibody in 1% w/v BSA, 1X TBS, 0.1% Tween 20 at 4°C with gentle shaking overnight.

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#3690
p38 MAPK (D13E1) XP® Rabbit mAb

Western blot analysis of extracts from various cell lines using p38 MAPK (D13E1) XP® Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human breast carcinoma using p38 MAPK (D13E1) XP® Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human colon carcinoma using p38 MAPK (D13E1) XP® Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human lung carcinoma using p38 MAPK (D13E1) XP® Rabbit mAb in the presence of control peptide (left) or antigen-specific peptide (right).

Confocal immunofluorescent analysis of HeLa cells, untreated (left) or treated with UV (100 mJ/cm²) with 30 min recovery (right), using p38 MAPK (D13E1) XP® Rabbit mAb (green). Actin filaments were labeled with DY-554 phalloidin (red).

Flow cytometric analysis of HeLa cells using p38 MAPK (D13E1) XP® Rabbit mAb (blue) compared to concentration-matched Rabbit (D41C) mAb IgG XP® Isotype Control #3900 (red).
#8690

p38 MAPK (D13E1) XP® Rabbit mAb

限制使用

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**Phospho-p38 MAPK (Thr180/Tyr182) (D3F9) XP® Rabbit mAb**

For Research Use Only. Not For Use In Diagnostic Procedures

| Applications: | Reactivity: | Sensitivity: | MW (Da): | Source/Host: | UniProt ID: | Entrez Gene ID: |
|---------------|-------------|--------------|----------|--------------|------------|---------------|
| WB, IP, IHC-P, IF-C, F | H/R/N/Mk/M/Pg/Sc | Endogenous | 43 | Rabbit IgG | Q15653 | 1432 | 5603, 6300, 5600 |

**Product Usage Information**

**Application**: Dilution

- Western Blotting: 1:1000
- Immunoprecipitation: 1:400
- Immunohistochemistry (Paraffin): 1:800
- Immunofluorescence (Immunocytochemistry): 1:1600
- Flow Cytometry: 1:200

**Storage**: Supplied in 10 mM sodium BES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

**Specificity / Sensitivity**: Phospho-p38 MAPK (Thr180/Tyr182) (D3F9) XP® Rabbit mAb detects endogenous levels of p38 MAPK only when phosphorylated at Thr180 and Tyr182. This antibody does not cross-react with the phosphorylated forms of either p42/44 MAPK or SAPK/JNK.

**Species Reactivity**: Human, Mouse, Rat, Monkey, Pig, Bovine, Pig

**Species predicted to react based on 100% sequence homology**: Hamster, Chicken, Zebrafish, Bovine, Pig

**Source / Purification**: Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr180/Tyr182 of human p38 MAPK.

**Background**: p38 MAP kinase (MAPK), also called RK1 (1) or CSBP (2), is the mammalian orthologue of the yeast HOG kinase that participates in a signaling cascade controlling cellular responses to osmotic and stresses (1,4). Four isoforms of p38 MAPK, p38α, β, γ (also known as Erk6 or SAPKγ), and δ (also known as SAPKδ), have been identified.

**Applications Key**: WB: Western blot; IP: Immunoprecipitation; IHC: Immunohistochemistry; ChIP: Chromatin Immunoprecipitation; F: Flow Cytometry; E: ELISA/Peptide

**Cross-Reactivity**: Human: Mouse: Rat: Hamster: M.®; Chicken: D.®; M.®; X.®; Zebrafish: B.®; Dog: P.®; Pig: S.®; Cow: C.®; Guinea Pig: H.®; Horse: All species reported

**Related Products**:
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**Important**: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween 20 in 4°C with gentle shaking, overnight.

**Revision 1**
Phospho-p38 MAPK (Thr180/Tyr182) (D3F9) XP® Rabbit mAb

Western blot analysis of extracts from COS and 293 cells, untreated or UV-treated, using Phospho-p38 MAPK (Thr180/Tyr182) (D3F9) XP® Rabbit mAb (upper) or p38 MAPK Antibody #9212 (lower).

Immunohistochemical analysis of paraffin-embedded human colon carcinoma using Phospho-p38 MAPK (Thr180/Tyr182) (D3F9) XP® Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded mouse colon using Phospho-p38 MAPK (Thr180/Tyr182) (D3F9) XP® Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded 293T cell pellets, untreated (left) or UV-treated (right), using Phospho-p38 MAPK (Thr180/Tyr182) (D3F9) XP® Rabbit mAb.

Confocal immunofluorescent analysis of COS cells, untreated (left) or anisomycin-treated (right), using Phospho-p38 MAPK (Thr180/Tyr182) (D3F9) XP® Rabbit mAb (green). Actin filaments have been labeled with DY-554 phalloidin (red).

Flow cytometric analysis of Jurkat cells, untreated (blue) or anisomycin-treated (green), using Phospho-p38 MAPK (Thr180/Tyr182) (D3F9) XP® Rabbit mAb compared to a nonspecific negative control antibody (red).
Anti-beta Actin Rabbit pAb
GB11001 100μL -20°C

**Product Information**

**Description**
beta Actin rabbit polyclonal antibody

**Protein full name**
Actin, cytoplasmic 1

**Synonyms**
ACTB, BRWS1, PS1TP5BP1, Beta-actin, actin beta, Beta Cytoskeletal Actin

**Immunogen**
KLH conjugated Synthetic peptide corresponding to Mouse β-Actin

**Isotype**
IgG

**Purity**
Affinity purification

**Predicted MW.**
42 kDa

**Observed MW.**
45 kDa

**Uniprot ID**
P60709, P60710, P60711

**Applications**

| Applications | Species     | Dilution | Positive Sample     |
|--------------|-------------|----------|---------------------|
| WB           | Human, Mouse, Rat | 1:1000-1:2000 | lung, kidney, brain |

**Background**

Actins are highly conserved proteins that are involved in various types of cell motility and are ubiquitously expressed in all eukaryotic cells. In vertebrates 3 main groups of actin isoforms, alpha, beta and gamma have been identified. The alpha actins are found in muscle tissues and are a major constituent of the contractile apparatus. The beta and gamma actins coexist in most cell types as components of the cytoskeleton and as mediators of internal cell motility.

**Storage**

Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.

PBS with 0.02%sodium azide, 100 μg/ml BSA and 50% glycerol.

**NOTE:**
1. This product is intended for research only.
2. This product is recommended to dilute with the Primary Antibody Dilution Buffer.