abcam

Product datasheet

Anti-p21 antibody [EPR3993] ab109199

敲除验证 重组 RabMAb

12 Abreviews 276 References 11 图像

概述

产品名称	Anti-p21抗体[EPR3993]
描述	兔单克隆抗体[EPR3993] to p21
宿主	Rabbit
特异性	Expression levels of the target protein vary between different tissue/cell lines and in some cases, induction may be required before a signal is observed. This antibody is not recommended for use in WB with tissue and primary cell samples. We recommended **ab109520** and **ab188224** for use in IHC.
经测试应用	**适用于:** WB
种属反应性	**与反应:** Mouse, Rat, Human
免疫原	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
阳性对照	Raw 264.7, HCT116, MCF-7, PC-12 treated with 50ng/ml NFG for 48 hours whole cell lysate, wild-type HeLa Treated Fluvastatin (50 uM, 24 h) cell lysate, Wild-type DLD-1 20 µM 2,3-DCPE for 16hrs treated cell lysate
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**.

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, 59% PBS, 0.05% BSA

纯度	Protein A purified
克隆	单克隆
克隆编号	EPR3993
同种型	IgG

应用

The Abpromise guarantee **Abpromise™承诺保证使用ab109199于以下的经测试应用**

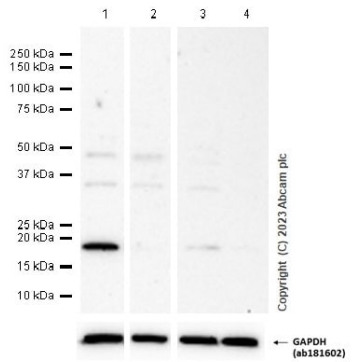
"应用说明"部分 下显示的仅为推荐的起始稀释度;实际最佳的稀释度/浓度应由使用者检定。

应用	Ab评论	说明
WB	★★★★☆ (6)	1/1000. Detects a band of approximately 21 kDa (predicted molecular weight: 18 kDa). **For unpurified use at 1/1000 - 1/10000. Not recommended for use with tissue samples.**

靶标

功能	May be the important intermediate by which p53/TP53 mediates its role as an inhibitor of cellular proliferation in response to DNA damage. Binds to and inhibits cyclin-dependent kinase activity, preventing phosphorylation of critical cyclin-dependent kinase substrates and blocking cell cycle progression. Functions in the nuclear localization and assembly of cyclin D-CDK4 complex and promotes its kinase activity towards RB1. At higher stoichiometric ratios, inhibits the kinase activity of the cyclin D-CDK4 complex.
组织特异性	Expressed in all adult human tissues, with 5-fold lower levels observed in the brain.
序列相似性	Belongs to the CDI family.
结构域	The PIP-box K+4 motif mediates both the interaction with PCNA and the recuitment of the DCX(DTL) complex: while the PIP-box interacts with PCNA, the presence of the K+4 submotif, recruits the DCX(DTL) complex, leading to its ubiquitination. The C-terminal is required for nuclear localization of the cyclin D-CDK4 complex.
翻译后修饰	Phosphorylation of Thr-145 by Akt or of Ser-146 by PKC impairs binding to PCNA. Phosphorylation at Ser-114 by GSK3-beta enhances ubiquitination by the DCX(DTL) complex. Ubiquitinated by MKRN1; leading to polyubiquitination and 26S proteasome-dependent degradation. Ubiquitinated by the DCX(DTL) complex, also named CRL4(CDT2) complex, leading to its degradation during S phase or following UV irradiation. Ubiquitination by the DCX(DTL) complex is essential to control replication licensing and is PCNA-dependent: interacts with PCNA via its PIP-box, while the presence of the containing the 'K+4' motif in the PIP box, recruit the DCX(DTL) complex, leading to its degradation.
细胞定位	Cytoplasm. Nucleus.

图片



Western blot - Anti-p21 antibody [EPR3993] (ab109199)

All lanes : Anti-p21 antibody [EPR3993] (ab109199) at 1/1000 dilution

Lane 1 : Raw 264.7(Mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate
Lane 2 : NIH/3T3 (Mouse embryonic fibroblast) whole cell lysate
Lane 3 : C6 (Rat glial tumor glial cell) whole cell lysate
Lane 4 : PC-12(Rat adrenal gland pheochromocytoma) whole cell lysate

Lysates/proteins at 20 µg per lane.

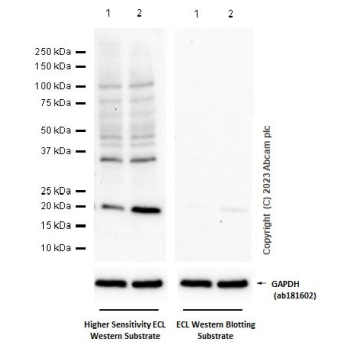
Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/20000 dilution

Predicted band size: 18 kDa
Observed band size: 18 kDa

Exposure time: 180 seconds

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

ab181602 was used as a GAPDH loading control.



Western blot - Anti-p21 antibody [EPR3993] (ab109199)

All lanes : Anti-p21 antibody [EPR3993] (ab109199) at 1/1000 dilution

Lane 1 : PC-12(Rat adrenal gland pheochromocytoma) whole cell lysate
Lane 2 : PC-12(Rat adrenal gland pheochromocytoma) treated with 50ng/ml NFG for 48 hours whole cell lysate

Lysates/proteins at 20 µg per lane.

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

Developed using the ECL technique.

Predicted band size: 18 kDa
Observed band size: 18 kDa

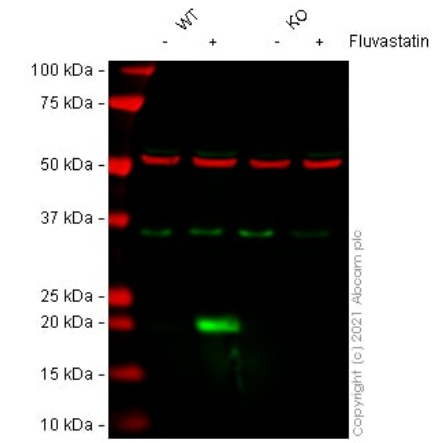
Exposure time: 180 seconds

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

ab181602 was used as a GAPDH loading control.

We recommend using higher or super higher sensitivity ECL substrate for detecting.

Increase lysate amount can also help to get stronger signal.



Western blot - Anti-p21 antibody [EPR3993] (ab109199)

All lanes : Anti-p21 antibody [EPR3993] (ab109199) at 1/1000 dilution

Lane 1 : wild-type HeLa Vehicle Control Fluvastatin (0 uM, 24 h) cell lysate
Lane 2 : wild-type HeLa Treated Fluvastatin (50 uM, 24 h) cell lysate
Lane 3 : CDKN1A knockout HeLa Vehicle Control Fluvastatin (0 uM, 24 h) cell lysate
Lane 4 : CDKN1A knockout HeLa Treated Fluvastatin (50 uM, 24 h) cell lysate

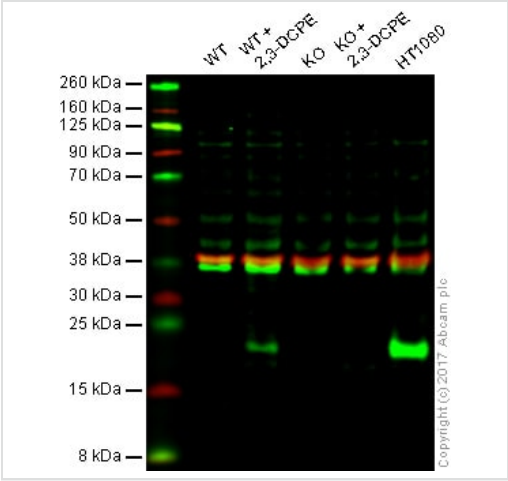
Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

Predicted band size: 18 kDa
Observed band size: 21 kDa

False colour image of Western blot: Anti-p21 antibody [EPR3993] staining at 1/1000 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] (**ab7291**) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab109199 was shown to bind specifically to p21. A band was observed at 21 kDa in wild-type HeLa cell lysates with no signal observed at this size in CDKN2A knockout cell line **ab255349** (knockout cell lysate **ab263812**). To generate this image, wild-type and CDKN2A knockout cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were

blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4°C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged.Secondary antibodies used were Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) at 1/20000 dilution.



Western blot - Anti-p21 antibody [EPR3993] (ab109199)

Lane 1: Wild-type DLD-1 cell lysate (20 µg)

Lane 2: Wild-type DLD-1 20 µM 2,3-DCPE for 16hrs treated cell lysate (20 µg)

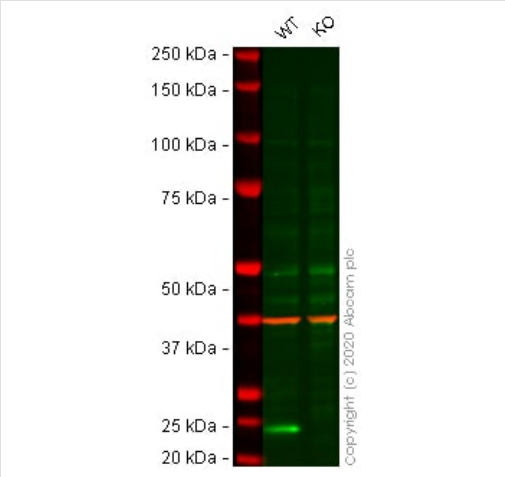
Lane 3: p21 knockout DLD-1 cell lysate (20 µg)

Lane 4: p21 knockout 20 µM 2,3-DCPE for 16hrs DLD-1 cell lysate (20 µg)

Lane 5: HT1080 cell lysate (20 µg)

Lanes 1 - 5: Merged signal (red and green). Green - ab109199 observed at 20 kDa. Red - loading control, **ab8245**, observed at 37 kDa.

ab109199 was shown to recognize p21 in WT DLD-1 cells with 2,3-DCPE treatment along with additional cross-reactive bands. When p21 knockout DLD-1 cells +/- 2,3-DCPE treatment were used, no band was observed. Wild-type and p21 knockout samples were subjected to SDS-PAGE. ab109199 and **ab8245** (loading control to GAPDH) were diluted 1/1000 and 1/10 000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (**ab216776**) secondary antibodies at 1/10 000 dilution for 1 h at room temperature before imaging.



Western blot - Anti-p21 antibody [EPR3993] (ab109199)

All lanes : Anti-p21 antibody [EPR3993] (ab109199) at 1/1000 dilution

Lane 1 : Wild-type HCT116 cell lysate
Lane 2 : CDKN1A knockout HCT116 cell lysate

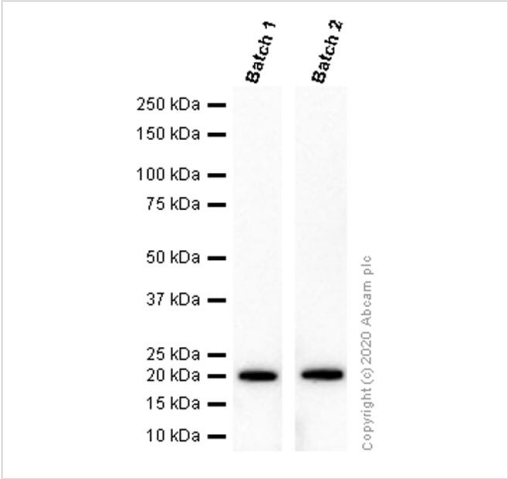
Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

Predicted band size: 18 kDa
Observed band size: 20 kDa

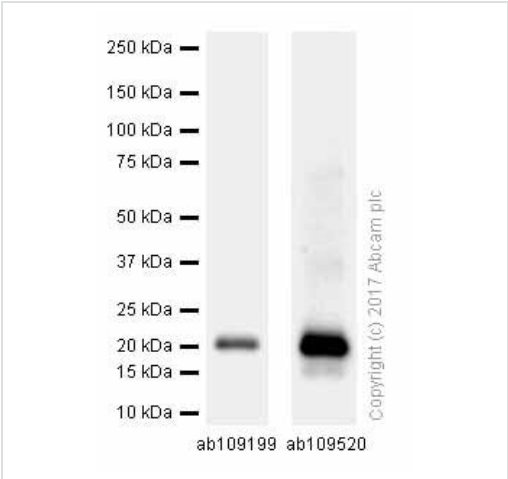
Lanes 1- 2: Merged signal (red and green). Green - ab109199 observed at 20 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (**ab8245**) observed at 37 kDa.

ab109199 was shown to react with p21 in wild-type HCT116 cells in western blot. Loss of signal was observed when knockout cell line **ab266860** (knockout cell lysate **ab256870**) was used. Wild-Type HCT116 and CDKN1A knockout HCT116 cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab109199 and Anti-GAPDH antibody [6C5] - Loading Control (**ab8245**) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.



Western blot - Anti-p21 antibody [EPR3993] (ab109199)

Different batches of ab109199 were tested on MCF7 (Human breast adenocarcinoma epithelial cell) lysate at 0.2 µg/ml. 15 µg of lysate was loaded in each lane. Bands observed at 21 kDa.



Western blot - Anti-p21 antibody [EPR3993] (ab109199)

Lane 1 : Anti-p21 antibody [EPR3993] (ab109199) (0.7ug/ul)
Lane 2 : Anti-p21 antibody [EPR362] (**ab109520**) (0.8ug/ul)

All lanes : MCF-7 (Human breast adenocarcinoma epithelial cell) whole cell lysates

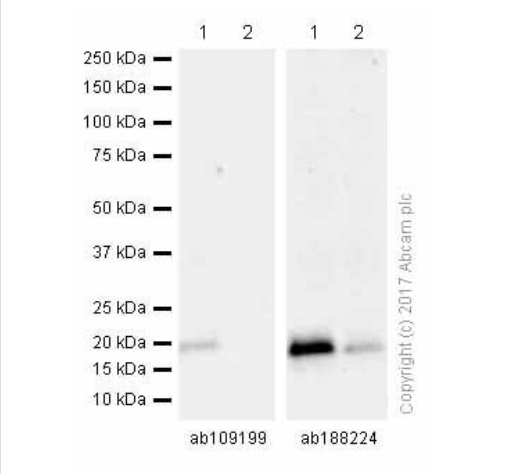
Lysates/proteins at 15 µg per lane.

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

Predicted band size: 18 kDa

Exposure time: 3 minutes

Blocking and diluting buffer: 5% NDFM/TBST.



Western blot - Anti-p21 antibody [EPR3993] (ab109199)

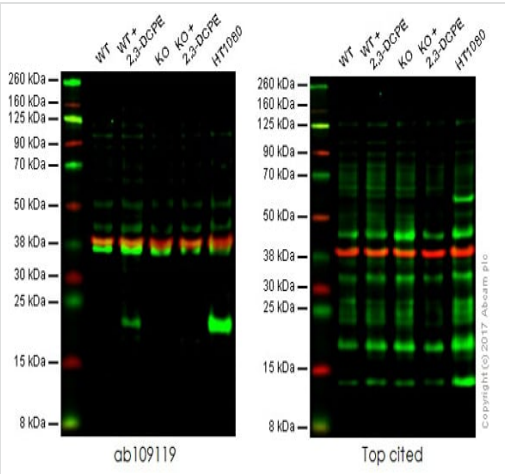
Lane 1 : Anti-p21 antibody [EPR3993] (ab109199) (1.4ug/ul)
Lane 2 : Anti-p21 antibody [EPR18021] (**ab188224**) (1.0ug/ul)

Lane 1 : RAW264.7 (Mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysates
Lane 2 : Neuro-2a (Mouse neuroblastoma neuroblast) whole cell lysates

Lysates/proteins at 15 µg per lane.

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

Predicted band size: 18 kDa

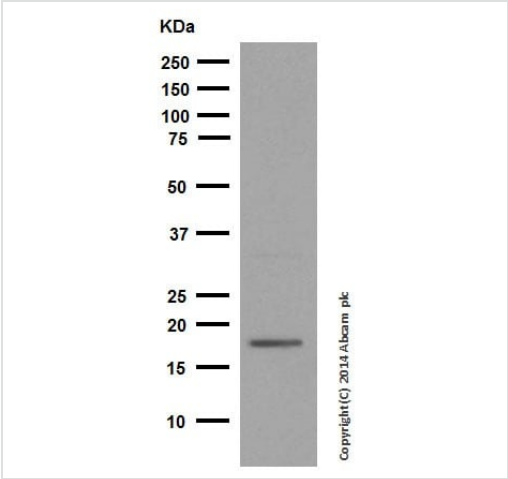


Western blot - Anti-p21 antibody [EPR3993] (ab109199)

Lane 1: Wild-type DLD-1 cell lysate (20 µg)
Lane 2: Wild-type DLD-1 20 µM 2,3-DCPE for 16hrs treated cell lysate (20 µg)
Lane 3: p21 knockout DLD-1 cell lysate (20 µg)
Lane 4: p21 knockout 20 µM 2,3-DCPE for 16hrs DLD-1 cell lysate (20 µg)
Lane 5: HT1080 cell lysate (20 µg)

Lanes 1 - 5: Merged signal (red and green). Green - ab109199 observed at 20 kDa. Red - loading control, **ab8245**, observed at 37 kDa.

This western blot image is a comparison between **ab109119** and a competitor's top cited rabbit polyclonal antibody.



Western blot - Anti-p21 antibody [EPR3993] (ab109199)

Anti-p21 antibody [EPR3993] (ab109199) at 1/1000 dilution (purified) + PC-12 cell lysate at 10 µg

Secondary

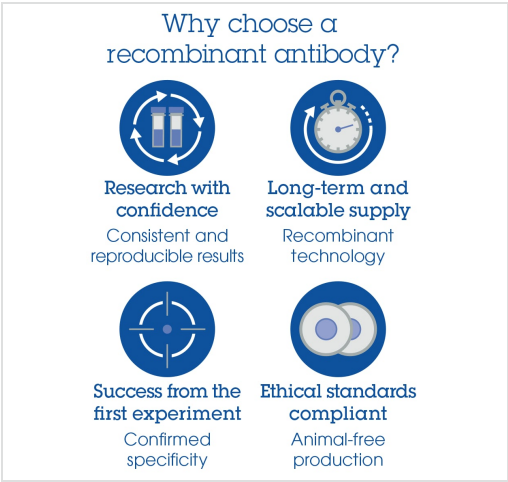
Peroxidase-conjugated goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 18 kDa

Observed band size: 21 kDa

Blocking buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM /TBST.



Anti-p21 antibody [EPR3993] (ab109199)

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

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you

- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit **https://www.abcam.cn/abpromise** or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors