abcam

Product datasheet

Anti-p21 antibody [CIP1/823] ab220206

KO VALIDATED

5 Images

Overview

Product name	Anti-p21 antibody [CIP1/823]
Description	Mouse monoclonal [CIP1/823] to p21
Host species	Mouse
Tested applications	**Suitable for:** WB, ICC, IHC-P
Species reactivity	**Reacts with:** Human **Does not react with:** Mouse, Rat
Immunogen	Recombinant full length protein corresponding to Human p21 aa 1 to the C-terminus. Database link: **P38936** Run BLAST with Run BLAST with
Positive control	WB: HeLa cell lysate. ICC: HeLa cells. IHC-P: Human lung squamous cell carcinoma and bladder carcinoma tissues.
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	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.
Storage buffer	pH: 7.2 Preservative: 0.05% Sodium azide Constituents: 0.05% BSA, 99% PBS
Purity	Protein A purified
Purification notes	ab220206 was purified from Bioreactor Concentrate by Protein A/G.

Clonality	Monoclonal
Clone number	CIP1/823
Isotype	IgG2a
Light chain type	kappa

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab220206 in the following tested applications.

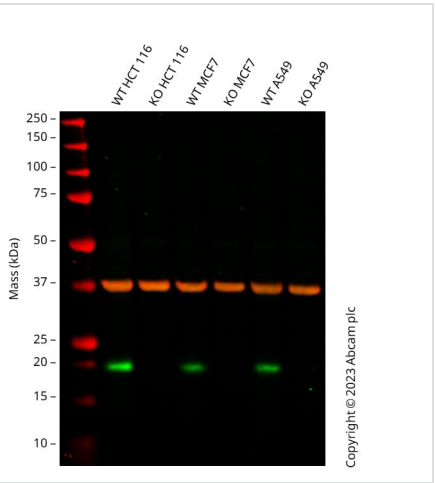
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		Use a concentration of 1 - 2 µg/ml. Predicted molecular weight: 18 kDa.
ICC		Use a concentration of 1 - 2 µg/ml.
IHC-P		Use a concentration of 2 - 4 µg/ml. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol. (Primary incubation for 30 minutes at RT).

Target

Function	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.
Tissue specificity	Expressed in all adult human tissues, with 5-fold lower levels observed in the brain.
Sequence similarities	Belongs to the CDI family.
Domain	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.
Post-translational modifications	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.
Cellular localization	Cytoplasm. Nucleus.

Images



Western blot - Anti-p21 antibody [CIP1/823] (ab220206)

All lanes : Anti-p21 antibody [CIP1/823] (ab220206) at 1 µg/ml

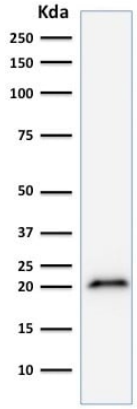
Lane 1 : Wild-type HCT 116 cell lysate
Lane 2 : CDKN1A knockout HCT 116 cell lysate
Lane 3 : Wild-type MCF7 cell lysate
Lane 4 : CDKN1A knockout MCF7 cell lysate
Lane 5 : Wild-type A549 cell lysate
Lane 6 : CDKN1A knockout A549 cell lysate

Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

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

Western blot: Anti-CDKN1A antibody [CIP1/823] (ab220206) staining at 1 ug/ml, shown in green; Rabbit Anti-GAPDH antibody [EPR16891] (**ab181602**) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab220206 was shown to bind specifically to CDKN1A. A band was observed at 21 kDa in wild-type cell lysates with no signal observed at this size in CDKN1A knockout cell lines. To generate this image, wild-type and CDKN1A knockout cell lysates were analysed. CDKN1A knockout cell lines in HCT 116 (**ab288187**), MCF7 (**ab288200**) and A549 (**ab288213**) backgrounds were used. 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-Mouse IgG H&L 800CW and Goat anti-Rabbit IgG H&L 680RD at 1/20000 dilution.

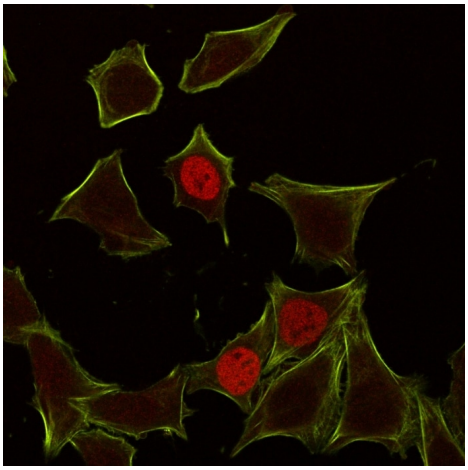


Western blot - Anti-p21 antibody [CIP1/823] (ab220206)

Anti-p21 antibody [CIP1/823] (ab220206) at 1 µg/ml + HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate

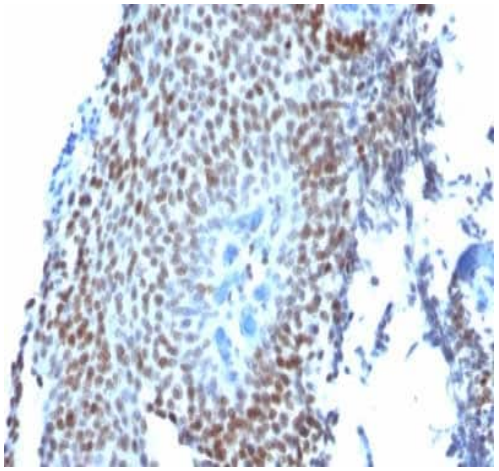
Predicted band size: 18 kDa

Western blot analysis of HeLa cell lysate labeling p21 with ab220206 at 1 ug/ml.



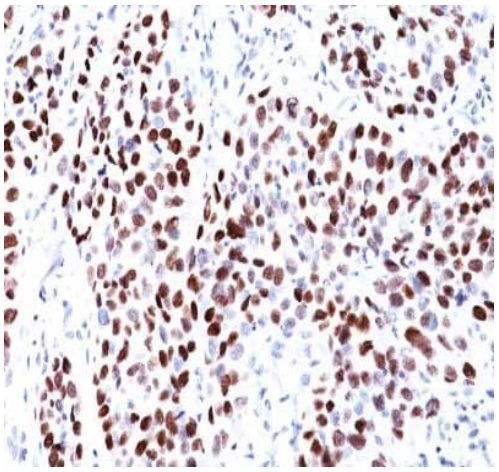
Immunocytochemistry - Anti-p21 antibody [CIP1/823] (ab220206)

Immunocytochemistry analysis of HeLa cells labeling p21 with ab220206 at 1 ug/ml followed by Goat anti-Mouse IgG (Red). Membrane stained with Phalloidin 488 (Green).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-p21 antibody [CIP1/823] (ab220206)

Immunohistochemical analysis of formalin-fixed, paraffin-embedded human bladder carcinoma tissue labeling p21 with ab220206 at 4 µg/ml.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-p21 antibody [CIP1/823] (ab220206)

Immunohistochemical analysis of formalin-fixed, paraffin-embedded human lung squamous cell carcinoma tissue labeling p21 with ab220206 at 4 µg/ml.

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.com/abpromise** or contact our technical team.

Terms and conditions

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