abcam

ab135249

Anti-PPM1A antibody [7F12]

KO Validated

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.05% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human PPM1A aa 200 to C-terminus. The exact immunogen used to generate this antibody is proprietary information. Database link P35813
Clone number	7F12
Purification technique	Affinity purification Protein G
Purification notes	Purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1/200 - 1/400
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	African green monkey
Dilution info	1/200 - 1/400
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

ELISA

Tested

Species	Recombinant fragment - Human
Dilution info	1/10000
Notes	-

Expected

Species	Human, African green monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Human
Dilution info	1/500 - 1/2000
Notes	-

Species	African green monkey
Dilution info	1/500 - 1/2000

Notes	-

Species	Recombinant fragment - Human
Dilution info	1/500 - 1/2000
Notes	-

Target data

See full target information PPM1A

Function	Enzyme with a broad specificity. Negatively regulates TGF-beta signaling through dephosphorylating SMAD2 and SMAD3, resulting in their dissociation from SMAD4, nuclear export of the SMADs and termination of the TGF-beta-mediated signaling. Dephosphorylates PRKAA1 and PRKAA2. Plays an important role in the termination of TNF-mediated NF-kappa-B activation through dephosphorylating and inactivating IKBKB/IKKB.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	PPM1A also known as protein phosphatase 1A or PP2C-alpha functions as a serine/threonine phosphatase. This protein plays an important role in removing phosphate groups from serine and threonine residues on proteins. The molecular mass of PPM1A is approximately 42-44 kDa. Expression of PPM1A is widespread and found in various human tissues indicating its significant involvement in multiple cellular processes.
Biological function summary	PPM1A regulates many cellular mechanisms by dephosphorylating targets and acting as a negative regulator of several signaling pathways. It modulates stress responses cell cycle progression and immune responses. PPM1A does not typically form complexes with other proteins but interacts closely with specific signaling

	molecules to control their activity. This regulation influences cellular homeostasis and growth in response to external and internal signals.
Pathways	PPM1A influences the TGF-beta signaling pathway where it interacts with and deactivates SMAD proteins by dephosphorylation. It also participates in the p38 MAPK pathway. These interactions highlight its role in controlling transduction signals initiated by growth factors and stress. By regulating these pathways PPM1A maintains a balance in cellular responses to growth and environmental stresses.
Associated diseases and disorders	PPM1A links to cancer and inflammatory diseases. Its ability to modulate phosphorylation states impacts cell proliferation and immune responses critical factors in these conditions. For instance PPM1A interaction with SMAD3 in the TGF-beta pathway can influence tumor progression. Additionally its regulation of proteins such as p38 MAPK can alter inflammatory responses affecting inflammatory disease severity.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

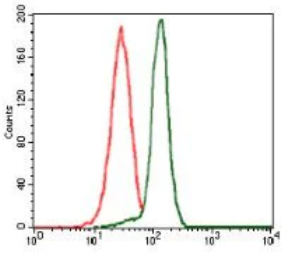
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

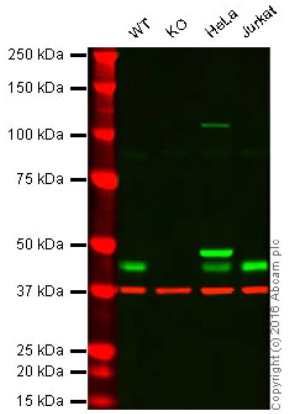
6 product images



Flow Cytometry - Anti-PPM1A antibody [7F12] (ab135249)

PPM1A Flow Cytometry staining using mouse Anti-PPM1A antibody

Flow cytometric analysis of HeLa cells using ab135249 at 1/200 dilution (green) or a negative control (red).



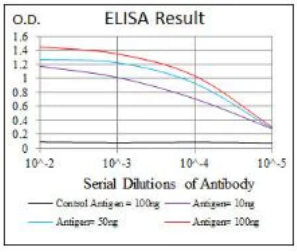
Western blot - Anti-PPM1A antibody [7F12] (ab135249)

PPM1A Western blot staining using mouse Anti-PPM1A antibody

Lane 1: Wild-type HAP1 cell lysate (20 µg)
Lane 2: PPM1A knockout HAP1 cell lysate (20 µg)
Lane 3: HeLa cell lysate (20 µg)
Lane 4: Jurkat cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab135249 observed at 42 kDa. Red - loading control, ab18251, observed at 37 kDa.

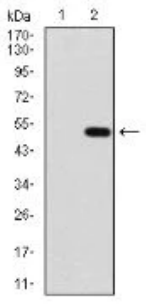
ab135249 was shown to specifically react with PPM1A when PPM1A knockout samples were used. Wild-type and PPM1A knockout samples were subjected to SDS-PAGE. ab135249 at a dilution of 1/500 and ab18251 (loading control to alpha Tubulin) at a dilution of 1/10,000 were incubated overnight at 4°C. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preadsorbed ab216772 and Goat Anti-Rabbit IgG H&L (IRDye® 680RD) preadsorbed ab216777 secondary antibodies at 1/10,000 dilution for 1 hour at room temperature before imaging.
All lanes:
Western blot - Anti-PPM1A antibody [7F12] (ab135249)

Predicted band size: 42 kDa



ELISA - Anti-PPM1A antibody [7F12] (ab135249)

ELISA analysis using ab135249 with different concentrations of antigen.



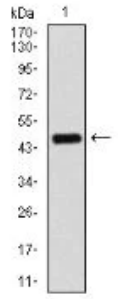
Western blot - Anti-PPM1A antibody [7F12] (ab135249)

All lanes:
Western blot - Anti-PPM1A antibody [7F12] (ab135249) at 1/500 dilution

Lane 1:
HEK293 cell lysate

Lane 2:
PPM1A (amino acids 202-382)-hIgGFc transfected HEK293 cell lysate.

Predicted band size: 42 kDa

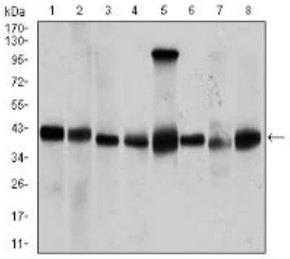


Western blot - Anti-PPM1A antibody [7F12] (ab135249)

All lanes:
Western blot - Anti-PPM1A antibody [7F12] (ab135249) at 1/500 dilution

All lanes:
Human PPM1A recombinant protein.

Predicted band size: 42 kDa



Western blot - Anti-PPM1A antibody [7F12] (ab135249)

All lanes:
Western blot - Anti-PPM1A antibody [7F12] (ab135249) at 1/500 dilution

Lanes 1 - 2:
Jurkat cell lysate

Lane 3:
A431 cell lysate

Lane 4:
HeLa cell lysate

Lane 5:
HEK293 cell lysate

Lane 6:
Raji cell lysate

Lane 7:
MCF-7 cell lysate

Lane 8:
COS-7 (African green monkey kidney fibroblast-like cell line)ncell lysate

Predicted band size: 42 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.