abcam

ab40877

Anti-PPP1R1A antibody [EP902Y]

Anti-PPP1R1A antibody [EP902Y] (ab40877) is a rabbit monoclonal antibody detecting PPP1R1A in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 10 publications
- Trusted since 2006

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.05% Sodium azide Constituents: 50% Tissue culture supernatant, 40% Glycerol (glycerin, glycerine), 9.85% Tris glycine, 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP902Y
Purification technique	Affinity purification Protein A
Concentration	0.895 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Rat
Dilution info	1/100000
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Rat
Dilution info	5 µg/mL
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

Target data

See full target information PPP1R1A

Function	Inhibitor of protein-phosphatase 1. This protein may be important in hormonal control of glycogen metabolism. Hormones that elevate intracellular cAMP increase I-1 activity in many tissues. I-1 activation may impose cAMP control over proteins that are not directly phosphorylated by PKA. Following a rise in intracellular calcium, I-1 is inactivated by calcineurin (or PP2B). Does not inhibit type-2 phosphatases.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

What is this antibody validated in?
Anti-PPP1R1A antibody [EP902Y] (ab40877) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Rat samples.

What is the molecular weight of PPP1R1A?
Anti-PPP1R1A [EP902Y] (ab40877) specifically detects a band for PPP1R1A (UniProt: Q13522) at a molecular weight of 19kDa.

Trusted by the scientific community
Anti-PPP1R1A [EP902Y] (ab40877) was first used in a scientific publication in 2006 and has been cited over 10 times in peer-reviewed journals.

Other related products

We have a range of other formats of antibody clone [EP902Y] also available for your convenience: ab40877, Carrier free - ab247299, PE - ab306211, APC - ab306212, HRP - ab306213, Alkaline Phosphatase - ab308878, Alexa Fluor® 488 - ab309800, Alexa Fluor® 647 - ab310170, Alexa Fluor® 594 - ab310604, Alexa Fluor® 555 - ab312132, Alexa Fluor® 568 - ab312619, Alexa Fluor® 750 - ab321627

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

What are the advantages of a recombinant monoclonal 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 batch production

For more information, read more on recombinant antibodies.

Supplementary info

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

Activity summary	The protein phosphatase 1 regulatory inhibitor subunit 1A also known as PPP1R1A or inhibitor-1 (I-1) plays a significant role in cellular regulation as a phosphatase inhibitor. Mechanically it regulates the activity of protein phosphatase 1 (PP1) an essential enzyme in various cellular processes. Its molecular weight is approximately 19 kDa. PPP1R1A is expressed in many tissues showing notable levels in cardiac and skeletal muscle where it helps modulate responses to various stimuli.
Biological function summary	PPP1R1A modulates signaling pathways by influencing the dephosphorylation of substrates which is a critical step in signal transduction. It is not typically part of a complex but interacts closely with protein phosphatase 1. This interaction allows for the effective regulation of phosphorylation states within cells impacting cell cycle control muscle contraction glycogen metabolism and more. Its regulatory capabilities are important for maintaining cellular homeostasis.
Pathways	The regulatory activities of PPP1R1A significantly impact the cAMP signaling pathway and the regulation of glycogen metabolism. Within the cAMP pathway PPP1R1A regulates the activity of PP1 influencing processes like muscle contraction and gene expression. It interacts with proteins such as PKA which phosphorylates PPP1R1A activating its inhibitory function. This regulation affects downstream cellular activities by modulating phosphorylation levels of key substrates within these pathways.
Associated diseases and disorders	Alterations in PPP1R1A expression or function have implications in cardiac diseases and diabetes. Increased or decreased activity of PPP1R1A can disrupt normal heart function due to its regulatory role in cardiac muscle contraction. Altered regulation within the cAMP and glycogen metabolism pathways can contribute to metabolic disorders like diabetes. Interactions with proteins such as

PP1 and PKA are critical for these conditions highlighting PPP1R1A's role in disease progression and potential therapeutic targeting.

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

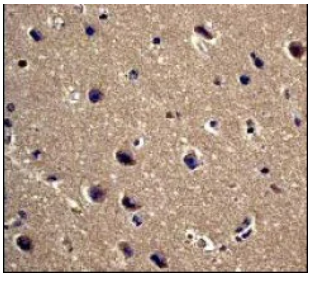
We do not recommend this combination. It is not covered by our product promise.

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.

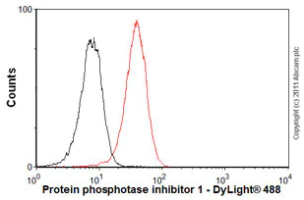
4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-PPP1R1A antibody [EP902Y] (ab40877)

PPP1R1A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-PPP1R1A antibody

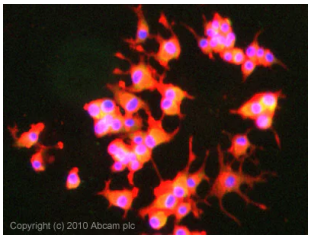
Immunohistochemical analysis of paraffin-embedded human normal brain tissue using ab40877 diluted 1:100.
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-PPP1R1A antibody [EP902Y] (ab40877)

PPP1R1A Flow Cytometry (Intracellular) staining using rabbit Anti-PPP1R1A antibody

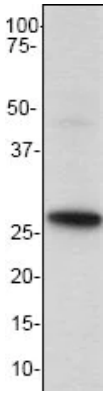
Overlay histogram showing SH-SY5Y cells stained with ab40877 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab40877, 1/20 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in SH-SY5Y cells fixed with 80% methanol/permeabilized in 0.1% PBS-Tween used under the same conditions.



Immunocytochemistry/ Immunofluorescence - Anti-PPP1R1A antibody [EP902Y] (ab40877)

PPP1R1A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PPP1R1A antibody

ICC/IF image of ab40877 stained PC12 cells. The cells were 100% methanol fixed (5 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab40877, 5µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-rabbit IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.



Western blot - Anti-PPP1R1A antibody [EP902Y] (ab40877)

PPP1R1A Western blot staining of Rat brain tissue lysate using rabbit Anti-PPP1R1A antibody

All lanes:
Western blot - Anti-PPP1R1A antibody [EP902Y] (ab40877) at 1/40000 dilution

All lanes:
Rat brain tissue lysate at 10 µg

Predicted band size: 19 kDa

Observed band size: 27 kDa

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