abcam

ab278699

Anti-SHP2 (phospho Y580) antibody [Shp2Y580-4A2]

Recombinant | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Preservative: 0.02% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine), 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human PTPN11 pY580. The exact immunogen used to generate this antibody is proprietary information. Database link Q06124
Clone number	Shp2Y580-4A2
Purification technique	Affinity purification Protein A/G
Light chain type	kappa
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Mouse
Dilution info	0.001-1 µg/mL

Notes	-

Species	Human
Dilution info	0.001-1 µg/mL
Notes	-

Target data

See full target information PTPN11 pY580

Function	Acts downstream of various receptor and cytoplasmic protein tyrosine kinases to participate in the signal transduction from the cell surface to the nucleus (PubMed:10655584, PubMed:14739280, PubMed:18559669, PubMed:18829466, PubMed:26742426, PubMed:28074573, PubMed:32184441). Positively regulates MAPK signal transduction pathway (PubMed:28074573). Dephosphorylates GAB1, ARHGAP35 and EGFR (PubMed:28074573). Dephosphorylates ROCK2 at 'Tyr-722' resulting in stimulation of its RhoA binding activity (PubMed:18559669). Dephosphorylates CDC73 (PubMed:26742426). Dephosphorylates SOX9 on tyrosine residues, leading to inactivate SOX9 and promote ossification (By similarity). Dephosphorylates tyrosine-phosphorylated NEDD9/CAS-L (PubMed:19275884). Acts as an effector of PDCD1-mediated inhibition of T-cell response: recruited by phosphorylated PDCD1, mediating dephosphorylation of key T-cell receptor (TCR) proximal signaling molecules, leading to TCR signaling inhibition (PubMed:32184441).

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
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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	SHP2 also known as PTPN11 is a protein tyrosine phosphatase with a molecular mass of approximately 68 kDa. It is expressed in various tissues including the heart liver and immune cells. SHP2 belongs to the non-receptor class of protein tyrosine phosphatases and plays a critical role in cell signaling by acting as a regulator of signal transduction processes. SHP2 mediates these processes by dephosphorylating specific phosphotyrosine residues on target proteins influencing various cellular functions like proliferation differentiation and survival.
Biological function summary	The role of SHP2 extends to involvement in several signaling cascades such as the Ras/MAPK and PI3K/AKT pathways. It functions as an essential component within protein complexes that facilitate cell communication and response to external signals. The protein modulates growth factor signaling and cytokine signaling highlighting its significance in normal cell function and development. SHP2's statement in signaling processes makes it an important regulator of cellular dynamics.
Pathways	SHP2 participates in the Ras/MAPK and PI3K/AKT signaling pathways which are important for regulating cell growth survival and differentiation. Within these pathways SHP2 interacts with various signaling molecules including Grb2 Sos and Gab family adaptors. These interactions coordinate cellular responses to growth factors and other extracellular cues ensuring proper pathway activation and control. By serving as a critical mediator SHP2 integrates signals that are necessary for appropriate cellular outcomes.
Associated diseases and disorders	SHP2 is associated with several conditions such as Noonan syndrome and various cancers. Mutations in the PTPN11 gene which encodes SHP2 often result in aberrant signaling that leads to developmental anomalies or tumorigenesis. In Noonan syndrome the mutated SHP2 protein results in disrupted Ras/MAPK pathway signaling. As for cancers SHP2 is often found to be overactive leading to enhanced cell proliferation and survival. In these contexts SHP2 is interconnected with other proteins like RAS and RAF which also contribute to oncogenic pathway activation and disease progression.

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.

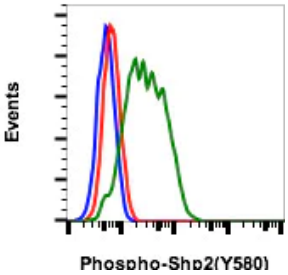
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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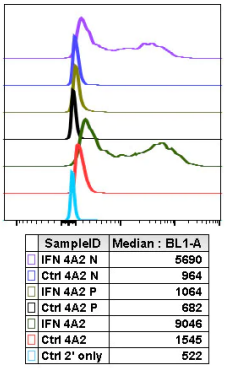
3 product images



Flow Cytometry - Anti-SHP2 (phospho Y580) antibody [Shp2Y580-4A2] (ab278699)

SHP2 (phospho Y580) Flow Cytometry staining using rabbit Anti-SHP2 (phospho Y580) antibody

Flow cytometric analysis of U937 cells secondary antibody only negative control (blue) or untreated (red) or treated with IFNa IL4 and pervanadate (green) using ab278699 at 0.05 ug/mL

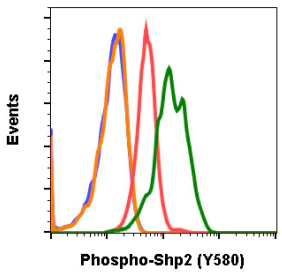


SampleID	Median : BL1-A
IFN 4A2 N	5690
Ctrl 4A2 N	964
IFN 4A2 P	1064
Ctrl 4A2 P	682
IFN 4A2	9046
Ctrl 4A2	1545
Ctrl 2' only	522

Flow Cytometry - Anti-SHP2 (phospho Y580) antibody [Shp2Y580-4A2] (ab278699)

SHP2 (phospho Y580) Flow Cytometry staining using rabbit Anti-SHP2 (phospho Y580) antibody

Peptide blocking flow cytometric analysis of THP1 cells secondary antibody only negative control (light blue) or untreated (red) or treated with IFNa + IL-4 + pervanadate (green) or untreated and blocked with phospho-peptide (black) or treated and blocked with phospho peptide (gold) or untreated and blocked with non-phospho peptide (dark blue) or treated and blocked with non-phospho peptide (purple) using ab278689 at 0.1µg/mL.



Flow Cytometry - Anti-SHP2 (phospho Y580) antibody [Shp2Y580-4A2] (ab278699)

SHP2 (phospho Y580) Flow Cytometry staining using rabbit Anti-SHP2 (phospho Y580) antibody

Flow cytometric analysis of NIH3T3 cells secondary antibody only negative control (blue) or 0.1 µg/mL of isotype control (orange) or untreated (red) or treated with IFNa IL-4 and pervanadate (green) using ab278689 at 0.1 µg/mL.

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