abcam

ab124465

Anti-ASS1 antibody [2B10]

Anti-ASS1 antibody [2B10] (ab124465) is a mouse monoclonal antibody detecting ASS1 in **Western Blot, Flow Cytometry, ICC/IF, ELISA**. Suitable for **African green monkey, Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Over 10 publications

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 ASS1. The exact immunogen used to generate this antibody is proprietary information. Database link P00966
Clone number	2B10
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
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	Mouse, Rat, African green monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Synthetic peptide, Recombinant fragment - Human
Dilution info	-
Notes	-

ELISA

Tested

Species	Synthetic peptide
Dilution info	1/10000
Notes	-

Expected

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

Not recommended

Species	Recombinant fragment - Human
Dilution info	-

Notes	-

WB

Tested

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

Species	Rat
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	-

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

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human

Dilution info	1/200 - 1/1000
Notes	-

Expected

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

Not recommended

Species	Synthetic peptide, Recombinant fragment - Human
Dilution info	-
Notes	-

Target data

See full target information ASS1

Function	One of the enzymes of the urea cycle, the metabolic pathway transforming neurotoxic amonia produced by protein catabolism into inocuous urea in the liver of ureotelic animals. Catalyzes the formation of arginosuccinate from aspartate, citrulline and ATP and together with ASL it is responsible for the biosynthesis of arginine in most body tissues.

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

Notes

What is this antibody validated in?
Anti-ASS1 antibody [2B10] (ab124465) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunocytochemistry/immunofluorescence (ICC/IF), ELISA in African green monkey, Human, Mouse, Rat samples.

What is the molecular weight of ASS1?
Anti-ASS1 [2B10] (ab124465) specifically detects a band for ASS1 (UniProt: P00966) at a molecular weight of 47kDa.

Trusted by the scientific community
Anti-ASS1 [2B10] (ab124465) was first used in a scientific publication in 2012 and has been cited over 10 times in peer-reviewed journals.

Specificity confirmed
The specificity of Anti-ASS1 antibody [2B10] (ab124465) has been confirmed by Western blot testing in ASS1 Knockout HAP1 cell line, ab264989.

Supplementary info

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

Activity summary	ASS1 or argininosuccinate synthase 1 is an enzyme that plays an important role in the urea cycle. It catalyzes the conversion of citrulline and aspartate into argininosuccinate using ATP in the process. The ASS1 protein is commonly expressed in the liver where it actively participates in the detoxification of ammonia. It has a molecular mass of approximately 46 kDa. Some alternate names for this protein include ASS and ASS-1.
Biological function summary	Argininosuccinate synthase 1 contributes significantly to the synthesis of arginine an essential amino acid through its conversion activities. The enzyme operates as a homotrimer a complex consisting of three identical subunits. This enzymatic activity is indispensable in maintaining the balance of nitrogen and ammonia within the body particularly important for liver and kidney functions.
Pathways	ASS1 is a critical component of both the urea cycle and the nitric oxide metabolism pathway. The urea cycle helps in detoxifying ammonia by converting it into urea which is excreted in urine. In nitric oxide metabolism ASS1 links with nitric oxide synthase to facilitate the use of arginine in producing nitric oxide a vital signaling molecule. The pathway engagement partners include proteins like citrin which supplies aspartate for the reaction.
Associated diseases and disorders	ASS1 has implications in citrullinemia and hepatocellular carcinoma. Citrullinemia results from mutations in the ASS1 gene leading to defective urea cycle function and ammonia accumulation. In cancer particularly hepatocellular carcinoma low expression of ASS1 correlates with poor prognosis as cancer cells often exhibit arginine auxotrophy. Connections through these conditions involve interactions with enzymes such as arginase which also influences arginine availability.

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

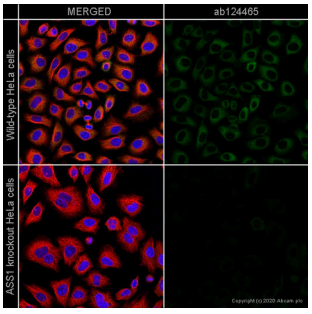
We do not recommend this combination. It is not covered by our product promise.

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.

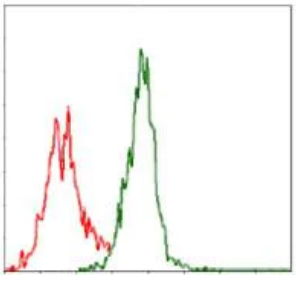
7 product images



Immunocytochemistry/ Immunofluorescence - Anti-ASS1 antibody [2B10] (ab124465)

ASS1 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-ASS1 antibody

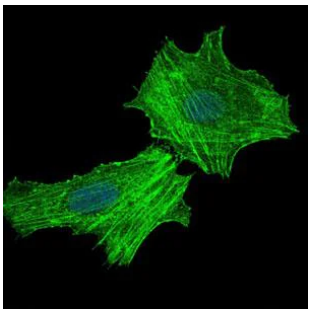
ab124465 staining ASS1 in wild-type HeLa cells (top panel) and ASS1 knockout HeLa cells (ab264989) (bottom panel). The cells were fixed with 100% methanol (5 min) then permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab124465 at 1/1000 dilution and ab6046 (Rabbit polyclonal to beta Tubulin) at 1/1000 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat secondary antibody to mouse IgG (Alexa Fluor® 488) (ab150117) at 2 µg/ml (shown in green) and a goat secondary antibody to rabbit IgG (Alexa Fluor® 594) (ab150080) at 2 µg/ml (shown in red). Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems TCS SP8).



Flow Cytometry - Anti-ASS1 antibody [2B10] (ab124465)

ASS1 Flow Cytometry staining using mouse Anti-ASS1 antibody

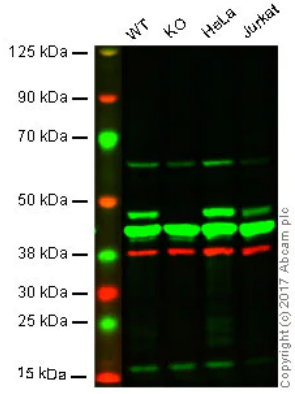
ab124465, at 1/200 dilution, staining ASS1 in Jurkat cells (green) by flow cytometry or negative control (red).



Immunocytochemistry/ Immunofluorescence - Anti-ASS1 antibody [2B10] (ab124465)

ASS1 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-ASS1 antibody

ab124465, at 1/200 dilution, staining ASS1 in HeLa cells by Immunofluorescence (green). Blue: DRAQ5 fluorescent DNA dye.



Western blot - Anti-ASS1 antibody [2B10] (ab124465)

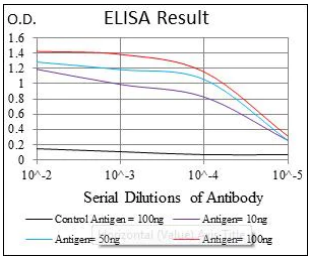
ASS1 Western blot staining using mouse Anti-ASS1 antibody

Lane 1: Wild type HAP1 whole cell lysate (20 µg)
Lane 2: ASS1 knockout HAP1 whole cell lysate (20 µg)
Lane 3: HeLa whole cell lysate (20 µg)
Lane 4: Jurkat whole cell lysate (20 µg)
Lanes 1 - 4: Merged signal (red and green). Green - ab124465 observed at 47 kDa. Red - loading control, ab181602, observed at 37 kDa.

ab124465 was shown to recognize ASS1 when ASS1 knockout samples were used, along with additional cross-reactive bands. Wild-type and ASS1 knockout samples were subjected to SDS-PAGE. ab124465 and ab181602 (Rabbit anti-GAPDH loading control) were incubated overnight at 4°C at a 1/500 dilution and 1/10000 dilution respectively. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed ab216772 and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed ab216777 secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.

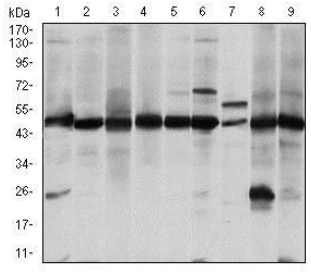
All lanes:
Western blot - Anti-ASS1 antibody [2B10] (ab124465)

Predicted band size: 47 kDa



ELISA - Anti-ASS1 antibody [2B10] (ab124465)

ELISA using ab124465.



Western blot - Anti-ASS1 antibody [2B10] (ab124465)

All lanes:
Western blot - Anti-ASS1 antibody [2B10] (ab124465) at 1/500 dilution

Lane 1:
A431 cell lysate

Lane 2:
Raji cell lysate

Lane 3:
L1210 cell lysate

Lane 4:
MOLT4 cell lysate

Lane 5:
Jurkat cell lysate

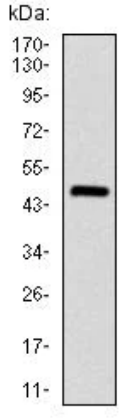
Lane 6:
A549 cell lysate

Lane 7:
NIH 3T3 cell lysate

Lane 8:
PC12 cell lysate

Lane 9:
COS7 cell lysate

Predicted band size: 47 kDa



Western blot - Anti-ASS1 antibody [2B10] (ab124465)

All lanes:
Western blot - Anti-ASS1 antibody [2B10] (ab124465) at 1/500 dilution

All lanes:
Human ASS1 recombinant protein (aa: 40-236)

Predicted band size: 19 kDa, 47 kDa

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