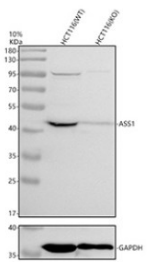
# ASS1 Antibody / Argininosuccinate Synthetase 1 Polyclonal Antibody (FY13683)

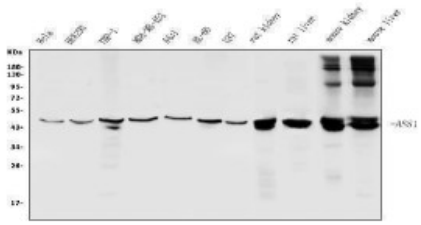
| Catalog No. | Formulation | Size |
|---|---|---|
| FY13683 | 0.5mg/ml if reconstituted with 0.2ml sterile DI water | 100 ug |

**Bulk quote request**

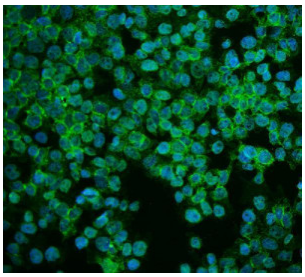
| | |
|---|---|
| **Species Reactivity** | Human, Mouse, Rat |
| **Format** | Antigen affinity purified |
| **Host** | Rabbit |
| **Clonality** | Polyclonal (rabbit origin) |
| **Isotype** | Rabbit Ig |
| **Buffer** | Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4. |
| **UniProt** | P00966 |
| **Applications** | Western blot: 0.5-1ug/ml<br>Immunofluorescence: 5ug/ml<br>Immunohistochemistry (FFPE): 2-5ug/ml<br>Flow cytometry: 1-3ug/million cells<br>ELISA: 0.1-0.5 ug/ml |
| **Limitations** | This ASS1 Antibody / Argininosuccinate Synthetase 1 Polyclonal Antibody is supplied exclusively for research use. |



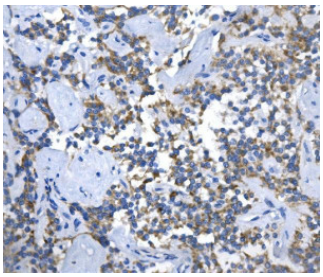

ASS1 Antibody WB Analysis of Wild-Type and ASS1 Knockout HCT116 Cells. Western blot analysis of human HCT116 wild-type (WT, lane 1) and ASS1 knockout (KO, lane 2) whole-cell lysates using Argininosuccinate Synthetase 1 Polyclonal Antibody at 0.5 ug/ml. A prominent immunoreactive band is detected near 47 kDa in WT lysate, with substantially reduced signal at the corresponding position in the KO sample. The observed molecular weight agrees with the calculated molecular weight of ASS1. GAPDH serves as the loading control.



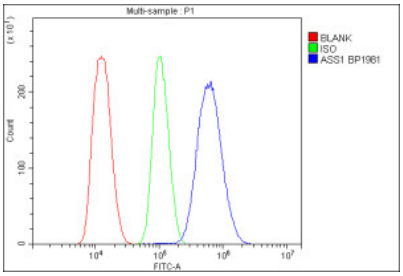
ASS1 Antibody WB Analysis of Human Cell Lines, Rat Kidney and Liver, and Mouse Kidney and Liver. Western blot analysis of human HeLa (lane 1), HEK293 (lane 2), THP-1 (lane 3), MDA-MB-453 (lane 4), A431 (lane 5), HL-60 (lane 6), and U87 (lane 7) cell lysates; rat kidney (lane 8) and liver (lane 9) tissue lysates; and mouse kidney (lane 10) and liver (lane 11) tissue lysates using Argininosuccinate Synthetase 1 Polyclonal Antibody at 0.25 ug/ml. Immunoreactive bands are detected near 47 kDa across the tested samples, consistent with the calculated molecular weight of approximately 46.5 kDa.



ASS1 Antibody IF Staining of Human HepG2 Cells. Immunofluorescence analysis of human HepG2 cells using Argininosuccinate Synthetase 1 Polyclonal Antibody at 2 ug/ml. Green ASS1 immunoreactivity is distributed predominantly throughout the cytoplasm, surrounding blue DAPI-stained nuclei. Enzymatic antigen retrieval was performed for 15 minutes before antibody incubation.



ASS1 Antibody IHC Staining of Human Pancreatic Cancer Tissue. Immunohistochemical analysis of FFPE human pancreatic cancer tissue using Argininosuccinate Synthetase 1 Polyclonal Antibody at 1 ug/ml. Brown immunoreactivity is observed in numerous tumor-associated cells, with predominantly cytoplasmic staining and heterogeneous distribution throughout the tissue section. Heat-induced epitope retrieval was performed using EDTA buffer at pH 8.0.




ASS1 Antibody FACS Analysis of Human THP-1 Cells. Flow cytometry analysis of fixed and permeabilized human THP-1 cells using Argininosuccinate Synthetase 1 Polyclonal Antibody at 1 ug per million cells. The blue histogram represents antibody-stained cells, the green histogram represents the isotype control, and the red histogram represents unstained cells. The antibody-stained population exhibits a rightward fluorescence shift relative to both controls, indicating detection of intracellular ASS1 under the tested conditions.

## Description

ASS1 Antibody / Argininosuccinate Synthetase 1 Polyclonal Antibody targets argininosuccinate synthetase 1 (ASS1), a cytosolic enzyme that plays a central role in the urea cycle and endogenous arginine biosynthesis. ASS1 catalyzes the ATP-dependent condensation of citrulline and aspartate to form argininosuccinate, an essential intermediate in the conversion of nitrogen-containing compounds into urea. This reaction also contributes to the production of arginine, an amino acid required for protein synthesis, nitric oxide generation, and several metabolic processes.

ASS1 functions together with argininosuccinate lyase (ASL), which converts argininosuccinate into arginine and fumarate. In the liver, these reactions form part of the urea cycle, a pathway responsible for detoxifying ammonia generated during amino acid metabolism. The resulting urea can be eliminated from the body, helping maintain nitrogen balance. Outside the liver, ASS1 participates in arginine regeneration and supports cellular requirements for arginine-dependent biosynthetic and signaling processes.

The ASS1 reaction requires ATP and proceeds through an activated citrulline intermediate before incorporation of aspartate. Its activity is coordinated with other enzymes involved in nitrogen metabolism, including carbamoyl phosphate synthetase 1, ornithine transcarbamylase, and ASL. In cells that produce nitric oxide, ASS1 can contribute to the recycling of citrulline into arginine, helping sustain substrate availability for nitric oxide synthase. This relationship

connects arginine metabolism with vascular regulation, immune responses, and cellular signaling.

Inherited deficiency of ASS1 causes classical citrullinemia type I, a urea cycle disorder characterized by impaired nitrogen disposal and accumulation of citrulline and ammonia. The severity of disease depends on residual enzyme activity and the functional consequences of individual genetic variants. ASS1 therefore represents an important component of metabolic pathways involved in maintaining ammonia homeostasis.

ASS1 has also attracted attention in cancer metabolism because reduced expression can create dependence on extracellular arginine. Certain tumors exhibit ASS1 deficiency and may become sensitive to strategies that restrict arginine availability. However, ASS1 expression varies considerably among malignancies, and its relationship with tumor behavior depends on metabolic context. ASS1 Antibody supports investigations into urea cycle function, arginine biosynthesis, nitrogen metabolism, and the metabolic adaptations associated with altered ASS1 expression.

Explore additional antibodies targeting enzymes involved in amino acid metabolism, nitrogen homeostasis, and the urea cycle in our Metabolism Antibodies collection.

## Application Notes

Users should optimize the working dilution of the ASS1 Antibody / Argininosuccinate Synthetase 1 Polyclonal Antibody for their specific experimental setup.

## Immunogen

The ASS1 Antibody was generated using e. coli-derived human Argininosuccinate Synthetase 1 recombinant protein (amino acids S3-S365).

## Storage

Once reconstituted, refrigerate the ASS1 Antibody at 4oC for no longer than one month. For extended storage, freeze aliquots at -20oC for up to six months and avoid repeated freeze-thaw cycles.

## Alternate Names

Argininosuccinate synthetase antibody, Argininosuccinate synthetase 1 antibody, Argininosuccinate synthase antibody, ASS antibody, ASS1 enzyme antibody, Citrulline-aspartate ligase antibody, Argininosuccinate synthetase 1 protein antibody, Argininosuccinate synthetase type 1 antibody, Argininosuccinate synthetase cytosolic antibody, ASS1 urea cycle enzyme antibody


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