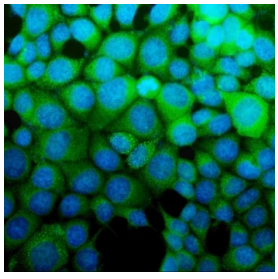
ASS1 Antibody 5I5 / Argininosuccinate Synthetase 1 Monoclonal Antibody [clone 5I5] (RQ6229)

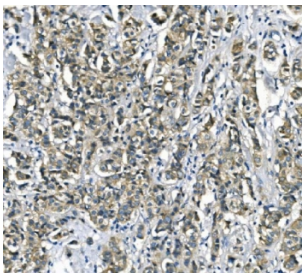
Catalog No.	Formulation	Size
RQ6229	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

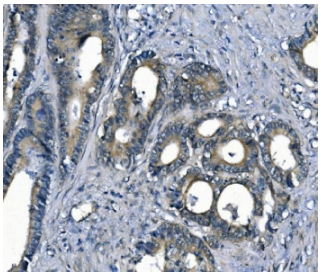
Species Reactivity	Human, Mouse, Rat, Monkey
Format	Antigen affinity purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2a
Clone Name	5I5
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P00966
Localization	Cytoplasmic
Applications	Western blot: 1-2ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This ASS1 Antibody 5I5 / Argininosuccinate Synthetase 1 Monoclonal Antibody is available for research use only.



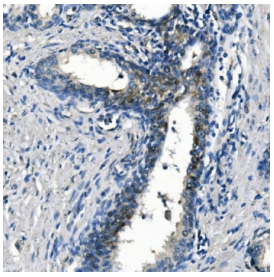
ASS1 Antibody 5I5 IF Staining of Human MCF7 Cells. Immunofluorescence analysis of FFPE human MCF7 cells using Argininosuccinate Synthetase 1 Monoclonal Antibody clone 5I5. Green ASS1 immunoreactivity is distributed predominantly throughout the cytoplasm, surrounding blue DAPI-stained nuclei. Heat-induced epitope retrieval was performed by steaming sections in pH 6 citrate buffer for 20 minutes.



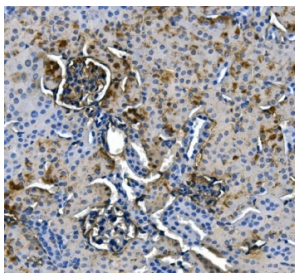
ASS1 Antibody 5I5 IHC Staining of Human Breast Cancer Tissue. Immunohistochemical analysis of FFPE human breast cancer tissue using Argininosuccinate Synthetase 1 Monoclonal Antibody clone 5I5. Brown immunoreactivity is observed in numerous tumor-associated cells, with predominantly cytoplasmic staining and heterogeneous distribution throughout the section. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA buffer for 20 minutes, followed by cooling before antibody incubation.



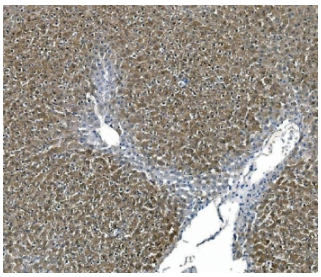
ASS1 Antibody 5I5 IHC Staining of Human Colon Cancer Tissue. Immunohistochemical analysis of FFPE human colon cancer tissue using Argininosuccinate Synthetase 1 Monoclonal Antibody clone 5I5. Brown cytoplasmic immunoreactivity is observed in glandular epithelial cells, with variable staining among individual cells and comparatively limited staining in the surrounding stromal tissue. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA buffer for 20 minutes, followed by cooling before antibody incubation.



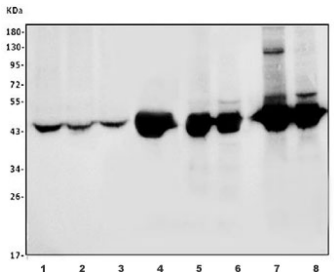
ASS1 Antibody 5I5 IHC Staining of Human Prostate Cancer Tissue. Immunohistochemical analysis of FFPE human prostate cancer tissue using Argininosuccinate Synthetase 1 Monoclonal Antibody clone 5I5. Brown immunoreactivity is observed in glandular epithelial structures, with predominantly cytoplasmic staining and variation in signal intensity among cells. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA buffer for 20 minutes, followed by cooling before antibody incubation.



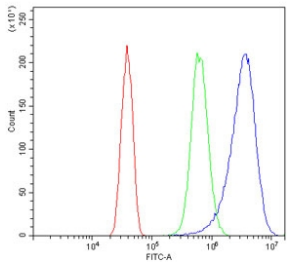
ASS1 Antibody 5I5 IHC Staining of Mouse Kidney Tissue. Immunohistochemical analysis of FFPE mouse kidney tissue using Argininosuccinate Synthetase 1 Monoclonal Antibody clone 5I5. Brown cytoplasmic immunoreactivity is prominent in renal tubular epithelial cells, with heterogeneous staining among individual tubules. Glomerular structures exhibit comparatively limited immunoreactivity. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA buffer for 20 minutes, followed by cooling before antibody incubation.



ASS1 Antibody 5I5 IHC Staining of Rat Liver Tissue. Immunohistochemical analysis of FFPE rat liver tissue using Argininosuccinate Synthetase 1 Monoclonal Antibody clone 5I5. Widespread brown cytoplasmic immunoreactivity is observed in hepatocytes throughout the tissue section, consistent with the established role of ASS1 in hepatic urea cycle metabolism. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA buffer for 20 minutes, followed by cooling before antibody incubation.



ASS1 Antibody 5I5 WB Analysis of Human HeLa, HepG2 and HEK293 Cells, Monkey Kidney, Rat Liver and Kidney, and Mouse Liver and Kidney. Western blot analysis of human HeLa (lane 1), HepG2 (lane 2), and HEK293 (lane 3) cell lysates; monkey kidney (lane 4), rat liver (lane 5), rat kidney (lane 6), mouse liver (lane 7), and mouse kidney (lane 8) tissue lysates using Argininosuccinate Synthetase 1 Monoclonal Antibody clone 5I5. A principal immunoreactive band is detected near 46 kDa across the tested samples, consistent with the predicted molecular weight of ASS1.



ASS1 Antibody 5I5 FACS Analysis of Human SiHa Cells. Flow cytometry analysis of human SiHa cells using Argininosuccinate Synthetase 1 Monoclonal Antibody clone 5I5 at 1 ug per million cells following blocking with goat serum. 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 substantial rightward fluorescence shift relative to both controls, supporting detection of ASS1 under the tested conditions.

Description

ASS1 Antibody 5I5 / Argininosuccinate Synthetase 1 Monoclonal Antibody targets argininosuccinate synthetase 1 (ASS1), a cytosolic enzyme essential for arginine biosynthesis and nitrogen metabolism. ASS1 catalyzes the ATP-dependent condensation of citrulline and aspartate to form argininosuccinate, an intermediate in the urea cycle and the endogenous production of arginine. This reaction connects amino acid metabolism with nitrogen disposal and helps maintain the availability of arginine for cellular biosynthetic processes.

Within the hepatic urea cycle, ASS1 functions alongside argininosuccinate lyase (ASL), which converts argininosuccinate into arginine and fumarate. Arginine is subsequently hydrolyzed by arginase to produce urea and regenerate ornithine. These reactions enable the conversion of potentially toxic nitrogen-containing compounds into urea for elimination. The activity of ASS1 is therefore important for maintaining ammonia homeostasis and supporting normal nitrogen balance.

ASS1 also contributes to arginine regeneration in tissues outside the liver. During nitric oxide synthesis, nitric oxide synthase converts arginine into nitric oxide and citrulline. ASS1 and ASL participate in recycling citrulline into arginine, helping sustain substrate availability for continued nitric oxide production. This metabolic relationship connects ASS1 with cellular signaling processes involving vascular function, immune responses, and the regulation of local arginine availability.

Inherited pathogenic variants in ASS1 cause citrullinemia type I, an autosomal recessive urea cycle disorder characterized by impaired argininosuccinate formation and elevated citrulline concentrations. Reduced enzyme activity can result in hyperammonemia and associated neurological complications. The clinical severity varies according to the functional consequences of individual variants and the amount of residual enzymatic activity.

ASS1 expression has also been investigated in cancer metabolism. Some malignancies exhibit reduced ASS1 expression, limiting endogenous arginine synthesis and increasing dependence on extracellular arginine. This metabolic vulnerability has attracted interest in the development of arginine-deprivation strategies. However, the biological significance of ASS1 expression varies among tumor types, and its relationship with proliferation and treatment response depends on cellular metabolic context.

ASS1 Antibody 5I5 provides a monoclonal reagent for investigating argininosuccinate synthetase expression and its relationship with arginine metabolism, nitrogen homeostasis, and metabolic adaptation.

For an alternative reagent with knockout-supported Western blot validation, explore our ASS1 Antibody targeting argininosuccinate synthetase 1.

Application Notes

Optimal dilution of the AASS1 Antibody 5I5 / Argininosuccinate Synthetase 1 Monoclonal Antibody should be determined by the researcher.

Immunogen

A human recombinant partial protein (amino acids S3-S365) was used as the immunogen for the Argininosuccinate Synthetase 1 antibody.

Storage

After reconstitution, the Argininosuccinate Synthetase 1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

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

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