GLUL Antibody for IHC / Glutamine Synthetase [clone MSVA-750M] (V6080)

Catalog No.	Formulation	Size
V6080-100UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V6080-20UG	Antibody in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug

Bulk quote request

Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2c, kappa
Clone Name	MSVA-750M
UniProt	P15104
Localization	Cell membrane, Cytoplasm, Cytosol, Microsome, Mitochondrion
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml
Limitations	This GLUL / Glutamine Synthetase antibody is available for research use only.

GLUL Antibody for IHC Tissue Microarray (TMA). Immunohistochemistry analysis of Glutamate-ammonia ligase GLUL, also known as Glutamine synthetase, in formalin-fixed paraffin-embedded human normal and cancer tissue microarrays using mouse monoclonal antibody clone MSVA-750M. Tissue microarray (TMA) staining with HRP-DAB brown chromogen demonstrates cytoplasmic localization, with strong zonal staining in pericentral hepatocytes of the liver consistent with metabolic zonation, and cytoplasmic staining in astrocytes within brain tissue, while many other normal tissues show low to absent signal. Within tumor tissue microarrays, variable cytoplasmic expression is observed across selected malignancies, reflecting metabolic reprogramming patterns. Evaluation across large TMA panels enables direct comparison of GLUL expression across diverse tissue types under standardized conditions. The observed staining patterns align with reported Glutamine synthetase expression profiles in the Human Protein Atlas and support its role in nitrogen metabolism and tissue-specific metabolic regulation.

Description

Glutamate-ammonia ligase, encoded by the GLUL gene, is widely known as Glutamine synthetase and functions as a key

cytoplasmic enzyme involved in nitrogen metabolism and cellular glutamine production. GLUL Antibody for IHC MSVA-750M is designed for immunohistochemical detection of glutamine synthetase in formalin-fixed, paraffin-embedded tissue sections. Because GLUL expression follows highly characteristic tissue distribution patterns, immunohistochemistry provides a powerful method for visualizing cellular localization and evaluating tissue-specific metabolic organization.

In immunohistochemical studies of normal tissues, glutamine synthetase shows distinct cytoplasmic staining patterns that reflect specialized metabolic zones. In the liver, GLUL is strongly expressed in pericentral hepatocytes surrounding central veins, producing a sharply defined zonal staining pattern that is frequently used to assess hepatic architecture and metabolic compartmentalization. In the central nervous system, immunohistochemistry reveals GLUL expression primarily in astrocytes, where cytoplasmic staining outlines astrocytic cell bodies and processes within the neuropil. This distribution corresponds to the enzyme's role in the glutamate-glutamine cycle and regulation of neurotransmitter metabolism.

Immunohistochemical detection of GLUL is also observed in kidney, gastrointestinal epithelium, and selected epithelial and glandular tissues depending on metabolic demand. Cytoplasmic staining typically appears diffuse to finely granular within positive cells, reflecting the known intracellular localization of glutamine synthetase. These patterns allow investigators to evaluate both tissue distribution and cell-type specific expression when examining normal physiology or disease-associated alterations.

GLUL immunohistochemistry is frequently used in tumor biology research. Altered glutamine synthetase expression has been reported in hepatocellular carcinoma and other malignancies, where IHC staining can reveal changes in metabolic pathway activation and cellular differentiation. The ability to visualize GLUL-positive cells within tissue architecture makes immunohistochemistry particularly valuable for correlating metabolic enzyme expression with histologic features.

As a monoclonal reagent optimized for tissue staining, GLUL Antibody for IHC MSVA-750M supports clear cytoplasmic detection of glutamine synthetase in formalin-fixed tissue sections. This antibody is well suited for studies examining tissue distribution, metabolic zonation, and tumor-associated changes in glutamine metabolism through immunohistochemical analysis.

This antibody is also part of a broader collection of IHC antibodies validated by tissue microarray analysis, supporting consistent staining across normal and cancer tissues.

Application Notes

1. Optimal dilution of the GLUL antibody for IHC should be determined by the researcher.

2. This GS / Glutamine Synthetase antibody is recombinantly produced by expression in CHO cells.

3. Manual Protocol: Freshly cut sections should be used (less than 10 days between cutting and staining). Heat-induced antigen retrieval for 5 minutes in an autoclave at 121oC in pH 7.8 Target Retrieval Solution buffer. Apply the antibody at a dilution of 1:150 at 37oC for 60 minutes. Visualization of bound antibody by the EnVision Kit (Dako, Agilent) according to the manufacturer's directions.

Immunogen

A recombinant fragment (around amino acids 50-250) of human GLUL protein (exact sequence is proprietary) was used as the immunogen for the GLUL / Glutamine Synthetase antibody for IHC.

Storage

GLUL / Glutamine Synthetase antibody with sodium azide - store at 2 to 8oC; antibody without sodium azide - store at -20 to -80oC.