GENE BIO SOLUTION

Glutamine Synthetase

Format	Catalog No.	Pack size	Dilution
Concentrated	GB3009A,B	0.1, 0.5 mL	1:100
Prediluted	GB3009AA	6.0 mL	Ready to use

PRODUCT DESCRIPTION -

The primary source of energy for tumor cells is glutamine, which is synthesized by the enzyme glutamine synthetase (GS). Analysis of elevated ubiquitinated protein in hepatocellular carcinoma (HCC) and its progressive rise in expression from precancerous lesions to early advanced HCC was the first method to identify accumulation of GS. Small hepatocellular lesions, which are frequently morphologically difficult and necessitate careful differentiation between dysplastic nodules (high-grade) and well-differentiated HCC, are the main focus of liver biopsy for HCC identification. The sensitivity and specificity for the detection of early and HCC-G1 were 72% and 100%, respectively, when a panel of GS, Heat Shock Protein 70, and Glypican 3 is utilized, and if any two of the three are positive. Additionally, GS activity is an indicator of astrocytes that can be utilized to differentiate between oligodendroglial and astrocytic tumors and may be involved in the pathophysiology of astrocytomas.

INTENDED USE -

Glutamine Synthetase [6/Glutamine Synthetase] is a mouse monoclonal antibody designed for use in lab settings to qualitatively identify the glutamine synthetase protein in formalin-fixed paraffin-embedded (FFPE) human tissues using immunohistochemistry (IHC). Any staining's clinical interpretation, or lack thereof, should be supported by morphological investigations employing appropriate controls and assessed by a trained pathologist in light of the patient's medical history and additional diagnostic procedures.

SUMMARY AND EXPLANATION -

The primary source of energy for tumor cells is glutamine, which is synthesized by the enzyme glutamine synthetase (GS). Analysis of elevated ubiquitinated protein in hepatocellular carcinoma (HCC) and its progressive rise in expression from precancerous lesions to early advanced HCC was the first method to identify accumulation of GS. Small hepatocellular lesions, which are frequently morphologically difficult and necessitate careful differentiation between dysplastic nodules (high-grade) and well-differentiated HCC, are the main focus of liver biopsy for HCC identification. The sensitivity and specificity for the detection of early and

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PRINCIPLE OF PROCEDURE -

Antigen detection in tissues and cells is a multi-step immunohistochemistry procedure. The first step attaches the primary antibody to its designated epitope. Following the tagging of the antigen with a primary antibody, a one-, two-, or three-step detection protocol may be utilized. The one-step approach will utilize an enzyme-conjugated polymer that attaches to the main antibody. A two-step approach will involve the addition of a secondary antibody to bind to the primary antibody. An enzyme-conjugated polymer is subsequently introduced to bind to the secondary antibody. The three-step detection protocol will incorporate a secondary antibody to bind to the primary antibody, succeeded by a linker antibody step to enhance binding efficacy. An enzyme-conjugated polymer is subsequently introduced to attach to the linker antibody. The detection of bound antibodies is demonstrated using a colorimetric response.

SOURCE - Mouse monoclonal

SPECIES REACTIVITY - Human; others not tested

CLONE - 6/Glutamine synthetase

ISOTYPE - IgG2a

PROTEINCONCENTRATION-~10mg/ml.CallforlotspecificIgconcentration.

EPITOPE/ANTIGEN - Glutamine synthetase

CELLULAR LOCALISATION - Cytoplasmic

POSITIVE TISSUE CONTROL - Hepatocellular cancer

KNOWN APPLICATIONS - Immunohistochemistry
30-40 min. At RT. Staining of formalin-fixed tissues requires heating tissue sections in between pH 7.4 - 9.0 for 45 min at 95°C followed by cooling at room temperature for 20 minutes.

SUPPLIED AS - Buffer with protein carrier and preservative

STORAGE AND STABILITY -

Store at 2°C to 8°C. The product is stable to the expiration date printed on the label, when stored under these conditions. Do not use after expiration date. Diluted reagents should be used promptly; any remaining reagent should be stored at 2°C to 8°C.

Materials required but not provided -

1) Positivetissuecontrol- Hepatocellularcancer
2) Negativecontroltissue(internalorexternal)
3) Microscopeslidesandcoverslips
4) Stainingjarsorbaths
5) Timer
6) Xyleneorxylenesubstitute
7) Ethanolorreagentalcohol
8) Deionizedordistilledwater
9) Heatingequipmentorenzymefortissuepretreatmentstep
10) Detection system
11) Chromogen
12) Wash buffer
13) Hematoxylin
14) Antibody diluents
15) Peroxide block
16) Light microscope
17) Mounting medium

LIMITATIONS-

The optimum antibody dilution and protocols for a specific application can vary. These include, but are not limited to fixation, heat-retrieval method, incubation times, tissue section thickness and detection kit used. Due to the superior sensitivity of these unique reagents, the recommended incubation times and titers listed are not applicable to other detection systems, as results may vary. The data sheet recommendations and protocols are based on exclusive use of Genebio products. Ultimately, it is the responsibility of the investigator to determine optimal conditions.