Glutamine Synthetase
Concentrated and Prediluted Monoclonal Antibody
Control Number: 901-3009-082614

Catalog Number: ACI 3009 A, B
Description: 0.1, 0.5 ml, concentrated
Dilution: 1:150-1:250
Diluent: Da Vinci Green

Intended Use:
For In Vitro Diagnostic Use

Summary and Explanation:
Glutamine Synthetase (GS) catalyzes the synthesis of glutamine, which is the major energy source of tumor cells. Accumulation of GS was first found through analyzing increased ubiquitinated protein in hepatocellular carcinoma (HCC) and its stepwise increase in expression from precancerous lesions to early advanced HCC. Liver biopsy for HCC detection is largely restricted to small hepatocellular lesions, which are often morphologically challenging, requiring careful distinction between dysplastic nodules (high-grade) and well-differentiated HCC. When a panel of GS, Heat Shock Protein 70 and Glypican 3 is used, if any 2 of the 3 are positive, the sensitivity and specificity for the detection of early and HCC-G1 were 72% and 100% respectively. Also GS activity is a marker for astrocytes and can be used to distinguish astrocytic from oligodendrogliial tumors and may play a role in the pathogenesis of astrocytomas.

Principle of Procedure:
Antigen detection in tissues and cells is a multi-step immunohistochemical process. The initial step binds the primary antibody to its specific epitope. After labeling the antigen with a primary antibody, a secondary antibody is added to bind to the primary antibody. An enzyme label is then added to bind to the secondary antibody; this detection of the bound antibody is evidenced by a colorimetric reaction.

Source: Mouse monoclonal
Species Reactivity: Human; others not tested
Clone: 6/Glutamine Synthetase
Isotype: IgG2a
Total Protein Concentration: ~10 mg/ml. Call for lot specific IgG concentration.

Epitope/Antigen: Glutamine Synthetase
Cellular Localization: Cytoplasm
Positive Control: Hepatocellular carcinoma
Normal Tissue: Liver
Abnormal Tissue: Hepatocellular cancer

Known Applications:
Immunohistochemistry (formalin-fixed paraffin-embedded tissues)

Supplied As: Buffer with protein carrier and preservative.

Storage and Stability:
Store at 2°C to 8°C. Do not open vial after expiration date printed on vial. If reagents are stored under conditions other than those specified in the package insert, they must be verified by the user. Diluted reagents should be used promptly; any remaining reagent should be stored at 2°C to 8°C.

Protocol Recommendations: Block: For 5 minutes at RT with Biocare's Peroxidized 1.

Pretreatment Solution: Reveal

Pretreatment Protocol:
Heat Retrieval Method: Retrieve sections under pressure using Biocare’s Decloaking Chamber, followed by a wash in distilled water. Alternatively, steam tissue sections for 45-60 minutes. Allow solution to cool for 10 minutes then wash in distilled water.

Primary Antibody: Incubate for 30 minutes at RT.

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Probe: Incubate for 10 minutes at RT with a probe.

Polymer: Incubate for 10 minutes at RT with a polymer.

Chromogen: Incubate for 5 minutes at RT when using Biocare's DAB – OR – Incubate for 5-7 minutes at RT when using Biocare’s Warp Red.

Counterstain: Counterstain with hematoxylin. Rinse with deionized water. Apply Tacha's Bluing Solution for 1 minute. Rinse with deionized water.

Technical Note:
This antibody has been standardized with Biocare's MACH 4 detection system. It can also be used on an automated staining system and with other Biocare polymer detection kits. Use TBS buffer for washing steps.

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 Biocare products. Ultimately, it is the responsibility of the investigator to determine optimal conditions. These products are tools that can be used for interpretation of morphological findings in conjunction with other diagnostic tests and pertinent clinical data by a qualified pathologist.

Quality Control:

Precautions:
This antibody contains less than 0.1% sodium azide. Concentrations less than 0.1% are not reportable hazardous materials according to U.S. 29 CFR 1910.1200, OSHA Hazard communication and EC Directive 91/155/EC. Sodium azide (Na3) used as a preservative is toxic if ingested. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. Upon disposal, flush with large volumes of water to prevent azide build-up in plumbing. (Center for Disease Control, 1976, National Institute of Occupational Safety and Health, 1976)

Specimens, before and after fixation, and all materials exposed to them should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come in contact with sensitive areas, wash with copious amounts of water.

Microbial contamination of reagents may result in an increase in nonspecific staining. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change. The MSDS is available upon request and is located at http://biocare.net/support/msds/.

Troubleshooting:
Follow the antibody specific protocol recommendations according to data sheet provided. If atypical results occur, contact Biocare's Technical Support at 1-800-542-2002.
References: