

Glutamine Synthetase

Prediluted Monoclonal Antibody
902-3009-072225



Available Product Formats				
Format	Catalog Number	Description	Dilution	Diluent
NeoPATH PRO	NPAR 3009 T40	40 tests	Ready-to-use	N/A

Intended Use:

For Research Use Only. Not for use in diagnostic procedures.

Background Information:

Glutamine Synthetase (GS) catalyzes the synthesis of glutamine, which is the major energy source of tumor cells. ⁵ 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. ⁶⁻⁸

Known Applications:

Immunohistochemistry (Formalin-fixed paraffin-embedded tissues). Other applications have not been tested.

Supplied As:

Buffered saline solution, pH 7.2-7.4, contains a protein carrier and less than 0.1% sodium azide preservative. See Safety Data Sheet for additional details.

Materials and Methods:

Reagents Provided:

Host Source: Mouse monoclonal

Species Reactivity: Human; other species not tested.

Clone: 6/Glutamine Synthetase

Isotype: IgG2a

Protein Concentration: Contact Biocare's Technical Support for specific Ig concentration.

Specificity: Glutamine synthetase

Reconstitution, Mixing, Dilution, and Titration:

Prediluted antibody reagent is optimally diluted for use with the above listed staining systems. Further dilution may result in loss of antigen staining. The user must validate any such change. Differences in tissue processing and technical procedures in the user's laboratory may produce significant variability in results necessitating regular performance of in-house controls.

Storage and Stability:

Store at 2°C to 8°C. The product is stable to the expiration date printed on the vial label when stored under these conditions. Do not use after expiration date. Storage under any condition other than those specified must be verified. Diluted reagents should be used promptly; store any remaining reagent at 2°C to 8°C. The stability of user diluted reagents has not been established by Biocare.

Staining Protocol Recommendations (NeoPATH PRO):

NPAR3009 is compatible for use with the NeoPATH PRO. Below are programming and protocol recommendations to assist the user when staining using Biocare's NeoPATH PRO Automated Staining Platform for research applications. The user is responsible for further optimizations of the protocol.

Chromogen Option: DAB

Antibody Protocol: Glutamine Synthetase, 10 min at RT

Template: HRP_HIGH_105C_10MINAB+BLOCK

Dewax: 20 min at 75°C

Antigen Retrieval (HIER Option): HIGH_105C_30MIN

Enzyme: N/A

Staining Protocol Recommendations (NeoPATH PRO) Cont'd:

Block Option: NeoPATH Background Punisher, 10 min at RT

Detection: HRP_10AB+BLOCK (Amplifier; 10 min at RT Polymer; 25 min at RT)

Chromogen: 7 min DAB + 2 min DAB Enhancer at RT

Hematoxylin: 7 min at RT

Limitations:

This product is provided for Research Use Only (RUO) and is not for use in diagnostic procedures. Suitability for specific applications may vary and it is the responsibility of the end user to determine the appropriate application for its use.

Precautions:

1. 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 (NaN₃) 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)¹
2. Handle materials of human or animal origin as potentially biohazardous and dispose of such materials with proper precautions. In the event of exposure, follow the health directives of the responsible authorities where used.^{2,3}
3. 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 into contact with sensitive areas, wash with copious amounts of water.⁴
4. Microbial contamination of reagents may result in an increase in nonspecific staining.
5. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change.
6. Do not use reagent after the expiration date printed on the vial.
7. To prevent evaporation and ensure maximum test capacity, promptly cap and remove reagents from automated instruments after each run. Leaving reagents exposed can reduce their effectiveness and the number of tests they can provide. Always store reagents as directed to maintain their integrity.
8. Dispose of all used reagents and any other contaminated disposable materials following procedures for infectious or potentially infectious waste. It is the responsibility of each laboratory to handle solid and liquid waste according to their nature and degree of hazardousness and to treat and dispose of it (or have them treated and disposed of) in accordance with any applicable regulations.
9. Follow local disposal regulations for your location along with recommendations in the Safety Data Sheet to determine the safe disposal of this product.
10. The SDS is available upon request and is located at <http://biocare.net>.
11. Report any serious incidents related to this device by contacting the local Biocare representative and the applicable competent authority of the Member State or country where the user is located.

Technical Support:

Contact Biocare's Technical Support at 1-800-542-2002 for questions regarding this product.

References:

1. Center for Disease Control Manual. Guide: Safety Management, NO. CDC-22, Atlanta, GA. April 30, 1976 "Decontamination of Laboratory Sink Drains to Remove Azide Salts."
2. Occupational Safety and Health Standards: Occupational exposure to hazardous chemicals in laboratories. (29 CFR Part 1910.1450). Fed. Register.



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3. Directive 2000/54/EC of the European Parliament and Council of 18 September 2000 on the protection of workers from risks related to exposure to biological agents at work.
4. Clinical and Laboratory Standards Institute (CLSI). Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline-Fourth Edition CLSI document M29-A4 Wayne, PA 2014.
5. Zhuang Z, et al. Proteomic identification of glutamine synthetase as a differential marker for oligodendrogliomas and astrocytomas. J Neurosurg. 2011 Oct;115(4):789-95.
6. Long J, et al. Glutamine synthetase as an early marker for hepatocellular carcinoma based on proteomic analysis of resected small hepatocellular carcinoma. Hepatobiliary Pancreat Dis Int. 2010 Jun; 9(3):296-305.
7. Roskams T, Kojiro M. Pathology of early hepatocellular carcinoma: conventional and molecular diagnosis. Semin Liver Dis. 2010 Feb; 30(1):17-25.
8. Sakamoto M. Early HCC: diagnosis and molecular markers. J Gastroenterol. 2009; 44 Suppl 19:108-11.