



Rabbit anti-GLUT1

Cat. No.: BRB049 (16 ml Ready-to-use)

Instructions for use

Intended Use

This antibody is designed for the specific localization of GLUT1 antigen in formalin-fixed, paraffin-embedded tissue sections.

Anti-GLUT1 antibody is intended for in vitro diagnostic use.

Specifications

Specificity:	Human GLUT1
Clone:	polyclonal
Isotype:	Rabbit Ig
Species reactivity:	Human +, others not tested

Summary and explanation

Glucose transporter type I (GLUT1) is a membrane associated erythrocyte glucose transport protein. GLUT1 is detectable in many human tissues including colon, lung, stomach, esophagus, and breast. GLUT1 is overexpressed in a variety of tumors. Amongst others that include tumors of the breast, pancreas, cervix, endometrium, lung, mesothelium, colon, bladder, and thyroid.

Several studies showed that immunohistochemical detection of GLUT1 can be helpful to discriminate reactive mesothelium vs. malignant mesothelioma, reactive mesothelial cells vs. metastatic adenocarcinoma and benign vs. atypical endometrial hyperplasia and adenocarcinoma. Zimmerman *et al.* showed that anti-GLUT1, in combination with antibodies against CA15-3 and Hep Par1, is quite helpful in the discrimination of HCC from other carcinomas. GLUT1 expression has been associated with increased malignant potential, invasiveness and poor prognosis in general. An exception to the association of anti-GLUT1 staining and malignancy is represented in the case of malignant melanoma (Parente *et al.* 2008).

Reagent provided

Polyclonal rabbit antibody in TBS with carrier protein and preservative for stabilisation in the following format:

Ready-to-use: 16 ml (Cat. No. BRB049)

Dilution of primary antibody

None

Storage and handling

The antibody should be stored at 2-8°C without further dilution.

If necessary, dilutions of the antibody should be done with a suitable antibody dilution buffer (e.g. ZUC025 from Zytomed Systems). The diluted antibody should be stored at 2-8°C after use. Stability of this working solution depends on various parameters and has to be confirmed by appropriate controls.

The antibody provided is stable until the expiry date indicated on the label, if stored at 2-8°C. Do not use product after the expiry date. Positive and negative controls should be run simultaneously with all specimens. If unexpected staining is observed which cannot be explained by variations in laboratory procedures and a problem with the antibody is suspected, contact Zytomed Systems' technical support or your local distributor.

Precautions

Use through qualified personnel only. Wear protective clothing to avoid contact of reagents and specimens with eye, skin and mucous membranes. If reagents or specimens come in contact with sensitive area, wash with large amounts of water.

Microbial contamination of the reagent must be avoided, since otherwise non-specific staining may occur. ProClin300 and sodium azide (NaN₃) are used for stabilisation. Reaction of sodium azide with lead or copper in drainage pipes can result in the formation of highly explosive metallic azides. Discard the antibody solution in a large volume of running water to avoid formation of deposits. A material safety data sheet (MSDS) for the pure substances is available upon request.

Staining procedure

Refer to the following table for conditions specifically recommended for this antibody. Also refer to detection system data sheets for guidance on specific staining protocols or other requirements.

Parameters	Zytomed Systems recommendations
*Pre-treatment:	Heat Induced Epitope Retrieval (for example in Citrate buffer pH 6.0 or EDTA buffer pH 9.0)
*Control tissue	Colon carcinoma, mesothelioma
*Working dilution	None
*Incubation time	30 - 60 minutes

Quality control

The recommended positive control tissue for this antibody is a colon carcinoma or mesothelioma. We recommend carrying out a positive and a negative control with every staining run. Please refer to the instructions of the detection system for guidance on general quality control procedures.

Troubleshooting

If you observe unusual staining or other deviations from the expected results please read these instructions carefully, refer to the instructions of the detection system for relevant information or contact your local distributor.

Expected results

The antibody stains positive in the membrane of GLUT1 positive cells in formalin-fixed, paraffin-embedded tissue. Further details about the expression pattern of GLUT1 can be found in the chapter 'Summary and Description'. The interpretation of the results is solely the responsibility of the user. Any experimental result should be confirmed by a medically established diagnostic procedure.

Limitations of the Procedure

Immunohistochemistry is a complex technique involving both histological and immunological detection methods. Tissue processing and handling prior to immunostaining, for example variations in fixation and embedding or the inherent nature of the tissue can cause inconsistent results (Nadji and Morales, 1983). Endogenous peroxidase, the pseudo-peroxidase activity in erythrocytes or biotin may cause non-specific staining depending on the detection system used. Tissues containing Hepatitis B Surface Antigen (HBsAg) may give false positive results with HRP (horse radish peroxidase) detection systems (Omata *et al*, 1980). Inadequate counterstaining and mounting can influence the interpretation of the results.

Zytomed Systems warrants that the product will meet all requirements described from its shipping date until the expiry date is reached, if the product is stored and utilised as recommended. No additional guarantees can be given. Under no circumstances shall Zytomed System be liable for any damages arising out of the use of the reagent provided.

Performance characteristics

Zytomed Systems has conducted studies to evaluate the performance of the antibody utilising a standard detection system. The product has been found to be sensitive and specific to the antigen of interest with minimal or no cross-reactivity.

Bibliography

Parente P *et al*. J Exp Clin Cancer Res 27:34, 2008
Kato Y *et al*. Mod Pathol 20:215-220, 2007
Nadji M and Morales AR, Ann NY Acad Sci 420:134-139, 1983

Zimmerman RL *et al*. Cancer 96:53-57, 2002
Afify A *et al*. Acta Cytol 49:621-626, 2005
Omata M *et al*. Am J Clin Pathol 73:626-632, 1989



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Explanations of the symbols on the product label

Symbols are used in accordance with ISO 15223-1. Further symbols on the product label might be:



GSH07: Warning / Attention

RUO

For Research Use Only