

Mesothelin

Format	Catalog No.	Pack size	Dilution
Concentrated	GB3175A,B	0.1, 0.5 mL	1:100
Prediluted	GB3175AA	6.0 mL	Ready to use

PRODUCT DESCRIPTION -

Mesothelin is a glycoprotein located on the cell surface that stimulates T cell responses, initially identified as the antigenic target of the K1 monoclonal antibody, which was developed using an ovarian cell line as the immunogen. In normal tissues, mesothelin expression is predominantly confined to mesothelial cells. Nonetheless, positivity for this marker has also been documented in some epithelial cells of the trachea, tonsil, kidney, and fallopian tube. Mesothelin is a highly sensitive biomarker for mesothelioma, reportedly expressed in nearly all epithelioid mesotheliomas and some carcinomas, especially serous carcinomas of the ovary and pancreatic carcinomas. Epithelioid mesotheliomas and adenomatoid tumors consistently exhibit mesothelin expression, typically characterized by a robust and diffuse reactivity along the cell membrane. This contrasts with sarcomatoid mesotheliomas, which typically test negative for this marker. Most pancreatic adenocarcinomas (86%-100%) and nonmucinous ovarian carcinomas, such as serous carcinomas (93%-100%), clear cell carcinomas (43%-75%), and transitional cell carcinomas (100%), are known to be mesothelin positive. About 40% to 50% of pulmonary adenocarcinomas and 15% to 30% of squamous cell carcinomas of the lung have been shown to exhibit this marker with a localized and cytoplasmic staining pattern, unlike the membranous pattern observed in mesotheliomas. Despite the low specificity for mesothelioma, the prevalent robust membranous reactivity in epithelioid mesotheliomas should be considered a significant indicator against the diagnosis of mesothelioma when a negative stain is obtained. Furthermore, mesothelin expression has been documented as either absent or infrequently faintly positive in certain carcinomas, including renal cell carcinomas, and may therefore be incorporated into the panel of markers utilized to differentiate these tumors from epithelioid mesotheliomas.

INTENDED USE -

Intended for In Vitro Diagnostic Applications

Mesothelin [MSLN-15C11] is a mouse monoclonal antibody designed for laboratory application in the qualitative detection of mesothelin protein using immunohistochemistry (IHC) in formalin-fixed paraffin-embedded (FFPE) human

tissues. The clinical interpretation of any staining or its absence must be supplemented by morphological studies utilizing appropriate controls and assessed in conjunction with the patient's clinical history and other diagnostic tests by a skilled pathologist.

SUMMARY AND EXPLANATION -

Mesothelin is a glycoprotein located on the cell surface that provokes T cell responses, initially identified as the antigenic target of the K1 monoclonal antibody, developed utilizing an ovarian cell line as the immunogen . In normal tissues, mesothelin expression is predominantly confined to mesothelial cells. Nonetheless, positivity for this marker has also been documented in some epithelial cells of the trachea, tonsil, kidney, and fallopian tube . Mesothelin is a highly sensitive biomarker for mesothelioma, reportedly expressed in nearly all epithelioid mesotheliomas and some carcinomas, including serous carcinomas of the ovary and pancreas. Epithelioid mesotheliomas and adenomatoid tumors consistently exhibit mesothelin expression, typically characterized by a robust and diffuse reactivity along the cell membrane. This contrasts with sarcomatoid mesotheliomas, which typically lack this characteristic. Pancreatic adenocarcinomas (86%-100%) and nonmucinous ovarian carcinomas, such as serous carcinomas (93%-100%), clear cell carcinomas (43%-75%), and transitional cell carcinomas (100%), are predominantly mesothelin positive. About 40% to 50% of pulmonary adenocarcinomas and 15% to 30% of squamous cell carcinomas of the lung have been shown to exhibit this marker with a localized and cytoplasmic staining pattern, unlike the membranous pattern observed in mesotheliomas . Despite the low specificity for mesothelioma, the prevalent robust membranous reactivity in epithelioid mesotheliomas should be considered a significant contraindication for the diagnosis of mesothelioma when a negative stain is obtained. Furthermore, mesothelin expression has been documented as either absent or infrequently faintly positive in certain carcinomas, including renal cell carcinomas, suggesting its potential inclusion in the panel of markers for differentiating these tumors from epithelioid mesotheliomas.

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 secondary antibody is introduced to attach to the primary antibody. An enzyme label is subsequently

introduced to attach to the secondary antibody;
antibody is shown by a colorimetric reaction.

the detection of the attached

SOURCE - Mouse monoclonal

SPECIES REACTIVITY - Human; others not tested

CLONE - MSLN-15C11

ISOTYPE - IgG1/kappa

PROTEIN CONCENTRATION - ~10 mg/ml. Call for lot specific Ig concentration.

EPITOPE/ANTIGEN - Mesothelin

CELLULAR LOCALISATION - Membranous for mesotheliomas; cytoplasmic for carcinomas

POSITIVE TISSUE CONTROL - Lung and fallopian tube

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. Do not use 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

Materials required but not provided -

- 1) Positive tissue control- Lung and fallopian tube
- 2) Negative control tissue (internal or external)
- 3) Microscope slides and coverslips
- 4) Staining jars or baths
- 5) Timer
- 6) Xylene or xylene substitute
- 7) Ethanol or reagent alcohol
- 8) Deionized or distilled water

- 9) Heating equipment for enzyme for tissue pretreatment step
- 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.