GENE BIO SOLUTION

CLAUDIN - 4

Format	Catalog No.	Pack size	Dilution
Concentrated	GB3121A,B	0.1, 0.5 mL	1:100
Prediluted	GB3121AA	6.0 mL	Ready to use

PRODUCT DESCRIPTION -

Claudin-4, a tight junction protein, is encoded by the CLDN4 gene and serves as a receptor for Clostridium perfringens enterotoxin. The utility of Claudin-4 expression varies according to the cancer type. Claudin-4 has demonstrated 99% specificity in differentiating adenocarcinoma from malignant mesothelioma in malignant effusions. Basal-like cancers exhibited overexpression of Claudin-4. The absence of Claudin-4 was observed in 69% of advanced gastric tumors and was associated with poor differentiation.

INTENDED USE -

Claudin-4 [3E2C1] is a mouse monoclonal antibody designed for laboratory application in the qualitative detection of Claudin-4 protein using immunohistochemistry (IHC) in formalin-fixed paraffin-embedded (FFPE) human tissues. The clinical assessment of any staining or its absence must be supplemented by morphological analyses utilizing appropriate controls and should be interpreted in conjunction with the patient's clinical history and other diagnostic evaluations by a certified pathologist.

SUMMARY AND EXPLANATION -

Claudin-4, a tight junction protein, is encoded by the CLDN4 gene and serves as a receptor for Clostridium perfringens enterotoxin. The expression of Claudin-4 is linked to either unfavorable prognosis or a more favorable diagnosis, contingent upon the cancer type. Claudin-4 has demonstrated the ability to differentiate adenocarcinoma from malignant mesothelioma with 99% specificity in malignant effusions. Claudin-4 overexpression independently predicted survival in a breast cancer multivariate analysis, correlating with poor prognosis, elevated tumor grade, and Her2 expression, while exhibiting an inverse relationship with estrogen receptor labeling. In luminal breast cancer, the elevation of Claudin-4 protein was associated with an increase in tumor grade and Ki-67, indicating a reduced overall survival rate. Basal-like cancers exhibited overexpression of Claudin-4. In contrast to the aforementioned breast cancer subtypes, the presence of Claudin-4 in triple-negative breast cancer served as a biomarker indicative of a better prognosis. The absence of Claudin-4 was observed in 69% of advanced gastric tumors and was associated with

poor differentiation. Reduced expression of the Claudin-4 protein was associated with advanced T staging, lymphatic metastasis, and an increased risk of recurrence in esophageal squamous cell carcinoma. Overexpression of Claudin-4 in prostate cancer may provide a basis for Claudin-4 targeted therapy as a viable treatment.

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; the detection of the attached antibody is shown by a colorimetric reaction.

SOURCE - Mouse monoclonal

SPECIES REACTIVITY - Human; others not tested

CLONE- 3E2C1

ISOTYPE - IgG1

PROTEIN CONCENTRATION - Call forspecificIgconcentration

EPITOPE/ANTIGEN - Synthetic peptide corresponding to a 22 amino acid sequence derived from the C-terminal region of human Claudin-4

CELLULAR LOCALISATION - Cell membrane

POSITIVE TISSUE CONTROL - Colon carcinoma or breast carcinoma

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 95ºC followed by cooling at room temperature for 20 minutes.

SUPPLIED AS - Buffer with protein carrier and preservative

STORAGE AND STABILITY -
Store at 2ºC to 8ºC. 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 2ºC to 8ºC.

Materials required but not provided -

1) Positivetissuecontrol- Coloncarcinomaorbreastcarcinoma
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.