

Product Information

MONOCLONAL ANTI-PAN CYTOKERATIN FITC CONJUGATE

Clone C-11

Purified Antibody

Product Number **F 3418**

Product Description

Monoclonal Anti-Pan Cytokeratin (mouse IgG1 isotype) is derived from the C-11 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from immunized BALB/c mice. A keratin-enriched preparation from cultured human epidermoid carcinoma cell line A431 was used as the immunogen. The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2). Protein A purified immunoglobulin from mouse ascites fluid is conjugated to FITC (isomer I) and then purified by gel filtration to remove free FITC.

FITC Monoclonal Anti-Pan Cytokeratin, clone C-11, recognizes human cytokeratins 4,5,6,8,10,13, and 18 in immunoblotting.^{1,2,3} The C-11 antibody is a broad spectrum antibody which reacts specifically with a wide variety of normal, reactive and neoplastic epithelial tissues. The antibody reacts with simple, cornifying and non-cornifying squamous epithelia and pseudostratified epithelia. It does not react with non-epithelial normal human tissues.⁴ This antibody can be applied to methanol- or acetone-fixed frozen sections, and to formalin-fixed, paraffin-embedded human tissues.⁵ Increased staining intensity is seen following proteolytic treatment of tested tissue (protease 'unmasking').^{1,2} Similarly embedded methacarn-fixed material is also suitable for cytokeratin demonstration. Anti-Pan Cytokeratin exhibits a wide interspecies cross-reactivity down to *xenopus laevis* (e.g., human, bovine, rat, and frog).

FITC Monoclonal Anti-Pan Cytokeratin conjugate may be used for the localization of cytokeratins using various immunochemical assays including direct immunofluorescence using frozen or fixed tissue sections or cultured cells. It may also be used in flow cytometry of normal and neoplastic epithelial cells. Intermediate-sized filaments are abundant cytoplasmic structural proteins in most vertebrate cells.

Cytokeratins, a group comprising at least 29 different proteins are characteristic of epithelial and trichocytic cells.⁵ Cytokeratins 4,5,6 and 8 are members of the type II neutral-to-basic subfamily. Cytokeratin peptide 4 (59 kDa) is the secondary type II keratin expressed in non-cornified stratified squamous epithelia. Cytokeratin peptide 5 (58 kDa) is the primary type II keratin in stratified epithelia, while cytokeratin type 8 (52 kDa) is a major type II keratin in simple epithelia. Cytokeratin 6 (56 kDa) is a 'hyperproliferation' cytokeratin expressed in tissues with natural or pathological high turnover. Cytokeratins 10, 13, and 18 are members of the type I acidic subfamily. Cytokeratin peptide 10 (56 kDa) is the secondary type I keratin expressed in cornified epithelia. Cytokeratin 13 (54 kDa) is the secondary type I keratin expressed in non-cornified stratified squamous epithelia. Cytokeratin 18 (45 kDa) is the primary type I keratin expressed in simple epithelial cells. Monoclonal anti-cytokeratins are specific markers of epithelial cell differentiation and have been widely used as tools in tumor identification and classification. Monoclonal Anti-Pan Cytokeratin is a broadly reactive group type antibody that recognizes an epitope present in most human epithelial tissues. It facilitates typing of normal, metaplastic and neoplastic cells. It may aid in the discrimination of carcinomas and non epithelial tumors such as sarcomas, lymphomas and neural tumors. It is also useful in detecting micrometastases in lymph nodes, bone marrow⁴ and other tissues and for determining the origin of poorly differentiated tumors.^{5,6}

Reagents

The conjugate is provided as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Precautions and Disclaimer

Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

Product Profile

1. An minimum antibody titer of 1:50 is determined by direct immunofluorescent staining of intermediate filaments in cultured PtK₂ cells.
2. When assayed by flow cytometric analysis, 20 µl of a minimum dilution of 1:500 is sufficient to stain 1 x 10⁷ ethanol-fixed cultured PtK₂ cells.

In order to obtain best results, it is recommended that each user determine the optimal working dilution for individual applications by titration assay.

References

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5. Lane, E., and Alexander, C., Sem. Canc. Biol., **1**, 165 (1990).
6. Moll, R., et al, Cell, **31**, 11 (1982).

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