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## Product Information

### Monoclonal Anti-Pan Cytokeratin

#### Clone C-11

Purified Mouse Immunoglobulin

Product Number **P 2871**

#### 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 BALB/c mice immunized with a keratin-enriched preparation from cultured human epidermoid carcinoma cell line A431.<sup>1</sup> The isotype is determined using the Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal Anti-Pan Cytokeratin (Clone C-11) recognizes human cytokeratins 4, 5, 6, 8, 10, 13 and 18 in immunoblotting.<sup>1-3</sup> It 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.<sup>4</sup> This antibody can be applied to methanol or acetone-fixed frozen sections and to formalin-fixed, paraffin-embedded human tissues.<sup>5</sup> Increased staining intensity is seen following proteolytic treatment of formalin-fixed tissue.<sup>1,2</sup> Similarly, methacarn-fixed material is also suitable for cytokeratin demonstration. Monoclonal Anti-Pan Cytokeratin exhibits a wide interspecies cross-reactivity (e.g., human,<sup>7-10</sup> bovine, rat,<sup>8</sup> mouse,<sup>9</sup> and frog). It is also useful for staining of cultured epithelial cell lines.

Monoclonal Anti-Pan Cytokeratin may be used for the localization of cytokeratins using various immunochemical assays such as immunoblotting, dot blotting, immunohistochemistry,<sup>8-9</sup> and immunocytochemistry<sup>7-10</sup> (immunofluorescence and immunoenzymatic staining).

Intermediate-sized filaments are abundant cytoplasmic structural proteins in most vertebrate cells. Cytokeratins, a group of at least 29 different proteins, are characteristic of epithelial and trichocytic cells.<sup>5</sup>

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 broad-spectrum antibody, which recognizes an epitope present in most human epithelial tissues. The antibody 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. The antibody can also be used in detecting micrometastases in lymph nodes, bone marrow, and other tissues,<sup>4</sup> and for determining the origin of poorly differentiated tumors.<sup>5,6</sup>

#### Reagent

Monoclonal Anti-Pan Cytokeratin is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: Approx. 2 mg/ml

#### Precautions and Disclaimer

Due to the sodium azide content a material safety data 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. Working dilution samples should be discarded if not used within 12 hours.

### Product Profile

A minimum working concentration of 15-30 µg/ml is recommended by immunocytochemistry staining of methanol/acetone fixed PTK-2 cells and immunohistology of formalin-fixed, paraffin-embedded sections of human skin.

In order to obtain the best results in various techniques and preparations, we recommend determining optimal working concentrations by titration.

### References

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