Monoclonal Mouse
Anti-Human Cytokeratin 19
Clone RCK108
Code No. M 0888
Lot 013, Edition 11.02.03

Intended use
For in vitro diagnostic use.

This antibody is intended for laboratory use to identify qualitatively, by light microscopy, cells expressing cytokeratin 19, using immunocytochemical test methods. Interpretation must be made within the context of the patient's clinical history and other diagnostic tests by a qualified pathologist.

Introduction
Human cytokeratins comprise a multigene family of 20 intermediate filament proteins, catalogued by Moll et al (1, 2), depending on molecular mass and isoelectric pH. Cytokeratin 19 has a molecular mass of 40 kDa and belongs to the type I cytokeratins (neutral or basic). Cytokeratin 19 is the smallest cytokeratin detected and classified so far.

Cytokeratin 19 is expressed in a wide variety of both normal and malignant epithelial cell types (1, 3-5) and like other cytokeratins cytokeratin 19 is rarely expressed by cells of non-epithelial origin (4, 5).

Presentation
Monoclonal mouse antibody supplied in liquid form as tissue culture supernatant (RPMI 1640 medium containing fetal calf serum) dialysed against 0.05 mol/L Tris/HCl, pH 7.2 containing 15 mmol/L NaN3.

Mouse Ig concentration: 50 mg/L.

Isotype: IgG1, kappa.

Total protein concentration: 9.44 g/L.

Storage
2-8 °C.

Clone
RCK108. (5).

Immunogen
Total cell extract from human bladder cancer cell line T24.

Specificity/reactivity
Anti-cytokeratin, RCK108 reacts with the 40 kDa cytokeratin intermediate filament protein as demonstrated by immunoblotting of cytoskeletal preparations of several human cell lines (T24, RT4, HeLa, EPLC65). One and two-dimensional immunoblotting of cytoskeleton preparations from the three human cell lines, T24, RT4 and HaCaT, established the identity of the RCK108 antibody as an anti-cytokeratin 19. Immunohistochemical testing of a number of human tissues showed that the anti-cytokeratin 19, RCK108 exclusively stained epithelia. Tissues known not to contain cytokeratin 19 were consistently negative on immunostaining. In a recent publication (5) a detailed description of the reactivity patterns of anti-cytokeratin, RCK108 in formalin-fixed and paraffin-embedded normal and malignant tissues is presented. The antibody does not recognize other intermediate filament proteins.

Normal cells: The DAKO antibody reacts with a large number of epithelial cell types including many ductal and glandular epithelia (5). A mosaic of positive and negative cells is found among mammary gland luminal cells, prostate epithelia, and some other epithelia (4). A complex heterogeneous pattern is seen in non-keratinizing squamous epithelia and hair follicles with the basal layer being the most strongly or sometimes exclusively stained (4). Stratified squamous epithelium of the epidermis, sebaceous glands, liver hepatocytes, some testicular cell types, and the cells of some endocrine glands are not stained. The basal cell layer of several stratified epithelia does, however, contain cytokeratin 19 (6).

Tumour cells: The antibody reacts with many benign and malignant epithelial lesions (7-10). Benign tumours of the breast show a heterogeneous staining pattern with a high proportion of unstained cells, whereas malignant breast tumours and other epithelial tumours show a positive homogeneous staining with the antibody (9-11). Non-epithelial tumours, basalcellomas and seminomas are in general not stained (10-11). Cervical squamous cell carcinomas, both keratinizing and non-keratinizing, as well as adenocarcinomas of the cervix are strongly positive (12).

Staining procedures
Formalin-fixed and paraffin-embedded sections

Can be used on formalin-fixed, paraffin-embedded tissue sections. To improve the staining pattern, antigen retrieval, such as by heating in 10 mmol/L citrate buffer, pH 6.0 or in DAKO Target Retrieval Solution, code No. S 1703, can be used. The slides should not be allowed to dry out during this treatment or during the following immunohistochemical staining procedure.

For tissue sections sensitive staining techniques are recommended, such as the LSAB®+ or the EnVision™+ systems.

The antibody may be used at a dilution of 1:50-1:100 with the LSAB®+ system when tested on formalin-fixed, paraffin-embedded sections of human breast.
Frozen sections and cell smears

Can be used for labelling acetone-fixed cryostat sections or for fixed cell smears. For staining cell smears, the APAAP method is recommended.

The antibody may be used at a dilution at 1:50-1:100 in the APAAP technique, when tested on acetone-fixed cryostat sections of human breast.

These are guidelines only; optimal dilutions should be determined by the individual laboratory.

Automation: The antibody can be used on automated immunostaining systems.

References