Monoclonal Mouse Anti-Human Desmin
Clone D33
Code No. M 0760
Lot 091. Edition 05.09.01

Intended use
For in vitro diagnostic use.
DAKO Monoclonal Mouse Anti-Human Desmin, Clone D33, is intended for use in immunocytochemistry. The antibody labels smooth and striated muscle cells as well as mesothelial cells, and is a useful tool for the identification of rhabdomyosarcomas (1, 2), leiomyomas, (3, 4) and mesotheliomas (5). Differential identification is aided by the results from a panel of antibodies. Interpretation must be made within the context of the patient’s clinical history and other diagnostic tests by a qualified pathologist.

Introduction
Desmin belongs to the class III of intermediate filaments, constituting part of the cytoskeleton, and is the characteristic intermediate filament of all three types of muscle cells (skeletal, cardiac and smooth muscle). Desmin is a 53-kDa protein corresponding to nine exons of a gene located at 2q35. Desmin forms a cytoskeletal network across the muscle fibre bordering at the plasma and nuclear membrane and is particularly localized to the subplasmalemmal region and the Z-band (6).

Reagent provided
Monoclonal mouse antibody provided in liquid form as cell culture supernatant dialysed against 0.05 mol/L Tris/HCl, pH 7.2, and containing 15 mmol/L NaN3.
Clone: D33. Isotype: IgG1, kappa.
Mouse IgG concentration: 230 mg/L. Total protein concentration: 18.2 g/L.

Immunogen
Desmin purified from human muscle.

Specificity
In Western blotting of cytoskeletal preparations of MCF-7 cells, SCC-4 cells RT-112 cells, skin epidermis, primary culture of renal carcinoma cells, leiomyoma, fetal heart, and crude extract from human white matter of brain, the antibody labels only a ~53 kDa band in the leiomyoma and fetal heart preparations, proving the reactivity with desmin, and demonstrating the absence of reactivity with other types of intermediate filaments tested (7).

Precautions
1. For in vitro diagnostic use.
2. The NaN3 used as a preservative is toxic if ingested. NaN3 may react with lead and copper plumbing to form highly explosive metal azides. Upon disposal, flush with large volumes of water to prevent azide build-up in plumbing.

Storage
Store at 2-8 °C. Do not use after expiration date stamped on vial. If reagents are stored under any conditions other than those specified, the user must verify the conditions. There are no obvious signs to indicate instability of this product. Therefore, positive and negative controls should be run simultaneously with patient specimens. If unexpected staining is observed which cannot be explained by variations in laboratory procedures and a problem with the antibody is suspected, contact DAKO Technical Services.

Specimen preparation
Paraffin sections: The antibody can be used for labelling paraffin-embedded tissue sections fixed in formalin or B-5 (1). Pre-treatment of tissues with heat-induced epitope retrieval in 10 mmol/L citrate buffer, pH 6.0, or in DAKO Target Retrieval Solution, code No. S 1700, is recommended. The tissue sections should not dry out during the treatment or during the following immunocytochemical staining procedure.
Frozen sections and cell preparations: The antibody can be used on frozen sections (7) and fixed cell smears (1, 5).

Staining procedure
Dilution: DAKO Monoclonal Mouse Anti-Human Desmin, code No. M 0760, may be used at a dilution range of 1:50-1:100 when applied on formalin-fixed, paraffin-embedded sections of human colon and using 15 minutes heat-induced epitope retrieval in 10 mmol/L citrate buffer, pH 6.0, and 30 minutes incubation at room temperature with the primary antibody. Optimal conditions may vary depending on specimen and preparation method, and should be determined by each individual laboratory. As negative control, DAKO Mouse IgG1, code No. X 0931, diluted to the same mouse IgG concentration as the primary antibody, is recommended.
Visualization: DAKO LSAB®+/HRP kit, code No. K 0679, and DAKO EnVision™+ /HRP kits, code Nos. K 4004 and K 4006, are recommended. For frozen sections and cell preparations, the DAKO APAAP kit, code No. K 0670, is a good alternative if endogenous peroxidase staining is a concern. Follow the procedure enclosed with the selected visualization kit.
Automation: The antibody is well-suited for immunocytochemical staining using automated platforms, such as the DAKO Autostainer.
Performance characteristics

Cells labelled by the antibody display a cytoplasmic staining pattern. The staining may show a fibrillar aspect (7).

Normal tissues: The antibody labels vascular smooth muscle cells and esophageal smooth muscle cells (3). In 8/10 fixed tissues, the antibody labelled mesothelial cells (5). Except for cells of muscle origin, normal bone marrow, kidney, breast, prostate gland, brain (gray matter), jejunum, thyroid gland, lung, colon, stomach, ureter and tonsil are negative (1). In fetal frozen tissues, the antibody labels smooth muscle cells in blood vessels and the small intestine, skeletal muscle cells in the tongue, cardiac muscle cells, stromal cells of the medulla of the kidney, the decidua, placental villi and the umbilical cord, submesothelial stromal cells of the pericardium, as well as mesothelial cells (7).

Abnormal tissues: Of human rhabdomyosarcomas, the antibody labelled 4/4 tumours (1). In the human esophagus the antibody labelled 35/35 leiomyomas, 1/3 leiomyosarcomas and 3/17 stromal tumours (3). In addition, the antibody labelled 33/33 highly cellular leiomyomas of the uterus (4). Also, 8/16 malignant, diffuse mesotheliomas of the pleura, were labelled by the antibody (5). In human vaginal and endocervical polyps, the antibody labelled both background stromal cells and the atypical stromal cells within the subepithelial zone (6).

The antibody showed no labelling in 10 cases each of neuroblastoma, lymphoma, Wilm’s tumour, primitive neuroectodermal tumour, and retinoblastoma (2), nor did it label 4 cases of small-cell carcinoma of lung, 3 cases of Ewing’s sarcoma (1), and 6 cases of endometrial stromal nodules (4).

References


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