CONFIRM anti-Desmin (DE-R-11) Primary Antibody

REF 760-2513

05267005001

IVD Σ 50

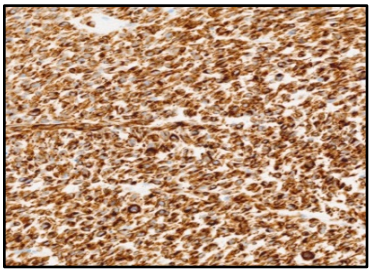

Figure 1. CONFIRM anti-Desmin (DE-R-11) antibody staining of leiomyosarcoma.

INTENDED USE

CONFIRM anti-Desmin (DE-R-11) is intended for laboratory use in the qualitative immunohistochemical detection of desmin by light microscopy in sections of formalin-fixed, paraffin-embedded tissue stained on a BenchMark IHC/ISH instrument.

This product should be interpreted by a qualified pathologist in conjunction with histological examination, relevant clinical information, and proper controls.

This antibody is intended for in vitro diagnostic (IVD) use.

SUMMARY AND EXPLANATION

Desmin, a 53 kDa type III intermediate filament protein encoded by the DES gene, is located on chromosome 2 (2q35) and is primarily expressed in muscle cells.[1,2,3] Desmin is among the earliest structural components of muscle to appear during myogenesis and is expressed at low levels in the myotome of the somites, modulating myogenic differentiation during embryogenesis.[2,3,4] Under normal physiologic conditions, differentiated muscle cells express desmin in the z-disks of skeletal muscle and the cytoplasmic dense bodies of smooth muscle.[2,3,4]

Neoplasms of myogenic lineage (i.e., smooth or skeletal muscle), including leiomyoma, leiomyosarcoma, and rhabdomyosarcoma, are among soft tissue neoplasms that generally express desmin.[1,5,6,7,8] In addition, some dedifferentiated liposarcomas, carcinomas, tumors with myofibroblastic features, and neoplasms with uncertain differentiation may variably express desmin due to entrapped reactive muscle cells.[1,5,6,8] Immunohistochemistry (IHC) is used to assess desmin expression in soft tissue neoplasms and to provide additional information regarding a tumor's lineage or origin.[1,5,6,7,8]

The detection of desmin by immunohistochemistry with the CONFIRM anti-Desmin (DE-R-11) Primary Antibody (CONFIRM anti-Desmin (DE-R-11) antibody) may be used to aid in the identification of neoplasms of myogenic origin. This antibody may be used as part of a panel of IHC studies. The cellular staining pattern for CONFIRM anti-Desmin (DE-R-11) antibody is cytoplasmic.

PRINCIPLE OF THE PROCEDURE

CONFIRM anti-Desmin (DE-R-11) antibody binds to desmin in formalin-fixed, paraffin-embedded (FFPE) tissue sections. This antibody can be visualized using OptiView DAB IHC Detection Kit (Cat. No. 760-700 / 06396500001) or *ultra*View Universal DAB Detection Kit (Cat. No. 760-500 / 05269806001). Refer to the respective method sheet for more information.

MATERIAL PROVIDED

CONFIRM anti-Desmin (DE-R-11) antibody contains sufficient reagent for 50 tests.

One 5 mL dispenser of CONFIRM anti-Desmin (DE-R-11) antibody contains approximately 25 µg of a mouse monoclonal antibody directed against desmin present in tissue.

The antibody is diluted in a buffer containing carrier protein and 0.10% ProClin 300, a preservative.

Specific antibody concentration is approximately 5 µg/mL. There is no known non-specific antibody reactivity observed in this product.

CONFIRM anti-Desmin (DE-R-11) antibody is a mouse monoclonal antibody produced as cell culture supernatant.

Refer to the appropriate VENTANA detection kit method sheet for detailed descriptions of: Principle of the Procedure, Material and Methods, Specimen Collection and Preparation for Analysis, Quality Control Procedures, Troubleshooting, Interpretation of Results, and Limitations.

MATERIALS REQUIRED BUT NOT PROVIDED

Staining reagents, such as VENTANA detection kits and ancillary components, including negative and positive tissue control slides, are not provided.

Not all products listed in the method sheet may be available in all geographies. Consult your local support representative.

The following reagents and materials may be required for staining but are not provided:

1. Negative Control (Monoclonal) (Cat. No. 760-2014 / 05266670001)
2. Microscope slides, positively charged
3. OptiView DAB IHC Detection Kit (Cat. No. 760-700 / 06396500001)
4. *ultra*View Universal DAB Detection Kit (Cat. No. 760-500 / 05269806001)
5. EZ Prep Concentrate (10X) (Cat. No. 950-102 / 05279771001)
6. Reaction Buffer Concentrate (10X) (Cat. No. 950-300 / 05353955001)
7. LCS (Predilute) (Cat. No. 650-010 / 05264839001)
8. ULTRA LCS (Predilute) (Cat. No. 650-210 / 05424534001)
9. Cell Conditioning Solution (CC1) (Cat. No. 950-124 / 05279801001)
10. ULTRA Cell Conditioning Solution (ULTRA CC1) (Cat. No. 950-224 / 05424569001)
11. Hematoxylin II (Cat. No. 790-2208 / 05277965001)
12. Bluing Reagent (Cat. No. 760-2037 / 05266769001)
13. General purpose laboratory equipment
14. BenchMark IHC/ISH instrument

STORAGE AND STABILITY

Upon receipt and when not in use, store at 2-8° C. Do not freeze.

To ensure proper reagent delivery and the stability of the antibody, replace the dispenser cap after every use and immediately place the dispenser in the refrigerator in an upright position.

Every antibody dispenser is expiration dated. When properly stored, the reagent is stable to the date indicated on the label. Do not use reagent beyond the expiration date.

SPECIMEN PREPARATION

Routinely processed FFPE tissues are suitable for use with this primary antibody when used with VENTANA detection kits and BenchMark IHC/ISH instruments. The recommended tissue fixative is 10% neutral buffered formalin.[9] Sections should be cut at approximately 4 µm in thickness and mounted on positively charged slides. Slides should be stained immediately, as antigenicity of cut tissue sections may diminish over time.

It is recommended that positive and negative controls be run simultaneously with unknown specimens.

WARNINGS AND PRECAUTIONS

1. For in vitro diagnostic (IVD) use.
2. For professional use only.
3. **CAUTION**: In the United States, Federal law restricts this device to sale by or on the order of a physician. (Rx Only)
4. Do not use beyond the specified number of tests.
5. ProClin 300 solution is used as a preservative in this reagent. It is classified as an irritant and may cause sensitization through skin contact. Take reasonable precautions when handling. Avoid contact of reagents with eyes, skin, and mucous membranes. Use protective clothing and gloves.
6. Positively charged slides may be susceptible to environmental stresses resulting in inappropriate staining. Ask your Roche representative for more information on how to use these types of slides.
7. Materials of human or animal origin should be handled as biohazardous materials and disposed of with proper precautions. In the event of exposure, the health directives of the responsible authorities should be followed.[10,11]
8. Avoid contact of reagents with eyes and mucous membranes. If reagents come in contact with sensitive areas, wash with copious amounts of water.
9. Avoid microbial contamination of reagents as it may cause incorrect results.

10. For further information on the use of this device, refer to the BenchMark IHC/ISH instrument User Guide, and instructions for use of all necessary components located at dialog.roche.com.
11. Consult local and/or state authorities with regard to recommended method of disposal.
12. Product safety labeling primarily follows EU GHS guidance. Safety data sheet available for professional user on request.
13. To report suspected serious incidents related to this device, contact the local Roche representative and the competent authority of the Member State or Country in which the user is established.

This product contains components classified as follows in accordance with the Regulation (EC) No. 1272/2008:

Table 1. Hazard information.

Hazard	Code	Statement
Warning 	H317	May cause an allergic skin reaction.
	H412	Harmful to aquatic life with long lasting effects.
	P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
	P273	Avoid release into the environment.
	P280	Wear protective gloves.
	P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
	P362 + P364	Take off contaminated clothing and wash it before reuse.
	P501	Dispose of contents/ container to an approved waste disposal plant.

This product contains CAS # 55965-84-9, reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1).

STAINING PROCEDURE

VENTANA primary antibodies have been developed for use on BenchMark IHC/ISH instruments in combination with VENTANA detection kits and accessories. Refer to the tables below for recommended staining protocols.

This antibody has been optimized for specific incubation times but the user must validate results obtained with this reagent.

The parameters for the automated procedures can be displayed, printed and edited according to the procedure in the instrument User Guide. Refer to the appropriate VENTANA detection kit method sheet for more details regarding immunohistochemistry staining procedures.

For more details on the proper use of this device, refer to the inline dispenser method sheet associated with P/N 760-2513.

Table 2. Recommended staining protocol for CONFIRM anti-Desmin (DE-R-11) antibody with OptiView DAB IHC Detection Kit on BenchMark IHC/ISH instruments.

Procedure Type	Method		
	GX	XT	ULTRA or ULTRA PLUS [a]
Deparaffinization	Selected	Selected	Selected
Cell Conditioning (Antigen Unmasking)	CC1, 32 minutes,	CC1, 32 minutes,	ULTRA CC1 32 minutes, 100 °C
Pre-Primary Peroxidase Inhibitor	Selected	Selected	Selected
Antibody (Primary)	8 minutes, 37 °C	12 minutes, 37 °C	12 minutes, 36 °C
OptiView HQ Linker	8 minutes (default)		
OptiView HRP Multimer	8 minutes (default)		
Counterstain	Hematoxylin II, 4 minutes		
Post Counterstain	Bluing, 4 minutes		

[a] Concordance was demonstrated between BenchMark ULTRA and BenchMark ULTRA PLUS instruments using representative assays.

Table 3. Recommended staining protocol for CONFIRM anti-Desmin (DE-R-11) antibody with *ultra*View Universal Detection Kit on BenchMark IHC/ISH instruments.

Procedure Type	Method		
	GX	XT	ULTRA or ULTRA PLUS[a]
Deparaffinization	Selected	Selected	Selected
Cell Conditioning (Antigen Unmasking)	CC1, Mild	CC1, Mild	ULTRA CC1 36 minutes, 95 °C (Mild)
Antibody (Primary)	16 minutes, 37 °C	16 minutes, 37 °C	36 minutes, 36 °C
Counterstain	Hematoxylin II, 4 minutes		
Post Counterstain	Bluing, 4 minutes		

[a] Concordance was demonstrated between BenchMark ULTRA and BenchMark ULTRA PLUS instruments using representative assays.

Due to variation in tissue fixation and processing, as well as general lab instrument and environmental conditions, it may be necessary to increase or decrease the primary antibody incubation, cell conditioning or protease pretreatment based on individual specimens, detection used, and reader preference. For further information on fixation variables, refer to "Immunohistochemistry Principles and Advances."[12]

NEGATIVE REAGENT CONTROL

In addition to staining with CONFIRM anti-Desmin (DE-R-11) antibody, a second slide should be stained with the appropriate negative control reagent.

POSITIVE TISSUE CONTROL

A tissue control must be included with each staining run. Optimal laboratory practice is to include a positive control section on the same slide as the test tissue. This helps identify any failures applying reagents to the slide. Tissue with weak positive staining is best suited for quality control. Control tissue may contain both positive and negative staining elements and serve as both the positive and negative control. Control tissue should be fresh autopsy, biopsy or surgical specimen, prepared or fixed as soon as possible in a manner identical to the test sections.

Known positive tissue controls should be utilized only for monitoring the performance of reagents and instruments, not as an aid in determining a specific diagnosis of test samples. If the positive tissue controls fail to demonstrate positive staining, results with the test specimen should be considered invalid.

An example of a positive control for this antibody is smooth muscle of the colon. The positive staining tissue components (myocytes) are used to confirm that the antibody was applied and the instrument functioned properly.

STAINING INTERPRETATION / EXPECTED RESULTS

The cellular staining pattern for CONFIRM anti-Desmin (DE-R-11) antibody is cytoplasmic.

This antibody may demonstrate staining of smooth muscle, myofibroblastic, myoid, and reticulum cells in normal and neoplastic tissues.

SPECIFIC LIMITATIONS

OptiView detection system is generally more sensitive than *ultra*View detection system. The user must validate the results obtained with this reagent and detection systems.

All assays might not be registered on every instrument. Please contact your local Roche representative for more information.

PERFORMANCE CHARACTERISTICS

ANALYTICAL PERFORMANCE

Staining tests for sensitivity, specificity, and precision were conducted and the results are listed below.

Sensitivity and Specificity

Cases of neoplastic tissues are only considered positive if neoplastic cells stain positive. Smooth muscle staining in neoplastic cases was not used to assess positive or negative status. In non-neoplastic cases, smooth muscle staining was only used to determine positive or negative status if the smooth muscle is a significant part of the tissue type being assessed (i.e., smooth muscle is a large and/or distinct component expected for the tissue type).

Table 4. Sensitivity/Specificity of CONFIRM anti-Desmin (DE-R-11) antibody was determined by testing FFPE normal tissues.

Tissue	# positive / total cases	Tissue	# positive / total cases
Cerebrum	0/3	Heart	3/3
Cerebellum	0/3	Esophagus [a]	3/3
Adrenal gland [a]	0/4	Stomach [a]	3/3
Ovary [a]	3/3	Small intestine [a]	4/4
Pancreas [a]	0/3	Colon [a]	3/3
Lymph node [a]	0/3	Appendix [a]	3/3
Parathyroid gland [a]	0/3	Liver [a]	0/3
Pituitary gland [a]	0/3	Salivary gland [a]	0/4
Testis [a,b]	3/3	Kidney [a,c]	0/3
Thyroid	0/3	Prostate [a]	4/4
Breast [c]	0/4	Bladder [a]	3/3
Spleen [a]	0/3	Endometrium	0/3
Tonsil [a]	0/6	Cervix [a]	0/3
Thymus [a]	0/3	Skeletal muscle	3/3
Bone marrow	0/3	Skin [a]	0/3
Larynx [a]	0/2	Nerve [a]	0/3
Lung [a,c]	0/3	Mesothelium [a,d]	3/4

[a] Case(s) exhibited smooth muscle staining

[b] Peritubular myoid cells

[c] Tissues evaluated includes normal and benign processes

[d] Mesothelial cells

Table 5. Sensitivity/Specificity of CONFIRM anti-Desmin (DE-R-11) antibody was determined by testing FFPE neoplastic tissues.

Pathology	# positive / total cases
Glioblastoma (Cerebrum)	1/1
Ependymoma (Cerebrum)	0/1
Meningioma (Cerebrum)	0/1
Oligodendroglioma (Cerebrum)	0/1
Adenocarcinoma (Sinus)	1/1
Squamous cell carcinoma (Sinus)	0/1
Fibrolipoma (Head and neck)	0/1
Ameloblastoma (Head and neck)	0/2
Adenoma (Adrenal gland)	0/1
Pheochromocytoma (Adrenal gland)	0/1
Adult granulosa cell tumor (Ovary)	0/1
Serous carcinoma (Ovary)	1/1
Teratoma (Ovary)	1/1
Neuroendocrine neoplasm (Pancreas)	0/1
Ductal adenocarcinoma (Pancreas)	0/1
Embryonal carcinoma (Testis)	1/1
Seminoma (Testis)	0/1
Follicular carcinoma (Thyroid)	0/1
Ductal carcinoma in situ (DCIS) (Breast)	0/1
Invasive ductal carcinoma (Breast)	0/1
Invasive lobular carcinoma (Breast)	0/1
Diffuse large B-Cell Lymphoma (Spleen)	0/1
Adenocarcinoma (Lung)	0/1
Small cell carcinoma (Lung)	0/1
Squamous cell carcinoma (Lung)	0/1
Solitary fibrous tumor (Pleura)	0/1
Myxoma (Heart)	0/1
Sarcoma (Pericardium)	1/1
Squamous cell carcinoma (Esophagus)	0/1
Adenocarcinoma (Esophagus)	0/1
Adenocarcinoma (Stomach)	0/1
Gastrointestinal stromal tumor (GIST) (Stomach)	3/3
Mesothelioma (Stomach)	1/1
Adenocarcinoma (Small intestine)	0/1
Gastrointestinal stromal tumor (GIST) (Small intestine)	0/4
Well-differentiated neuroendocrine tumor (Appendix)	0/1
Adenocarcinoma (Colon)	0/1

Pathology	# positive / total cases
Adenosquamous carcinoma (Colon)	0/1
Cholangiocarcinoma (Liver)	0/1
Hepatocellular carcinoma (Liver)	0/1
Pleomorphic adenoma (Salivary gland)	0/1
Warthin Tumor (Salivary gland)	0/1
Papillary adenoma (Kidney)	0/1
Renal cell carcinoma (Kidney)	0/1
Adenocarcinoma (Prostate)	0/2
Squamous cell carcinoma (Bladder)	0/1
Urothelial carcinoma (Bladder)	0/1
Clear cell carcinoma (Uterus)	0/1
Adenocarcinoma (Uterus)	0/1
Adenocarcinoma (Cervix)	0/1
Squamous cell carcinoma (Cervix)	0/1
Basal cell carcinoma (Skin)	0/1
Melanoma (Skin)	0/1
Squamous cell carcinoma (Skin)	0/1
Schwannoma (Spinal cord)	0/1
Epithelioid sarcoma (Soft tissue)	0/3
Angiosarcoma (Soft tissue)	0/1
Angioleiomyoma (Soft tissue)	1/1
Solitary fibrous tumor (Soft tissue)	0/1
Lipoma (Soft tissue)	0/1
Clear cell sarcoma (Soft tissue)	0/1
Anaplastic large cell lymphoma (Lymph node)	0/1
Follicular lymphoma (Lymph node)	0/1
Hodgkin lymphoma (Lymph node)	0/1
Pleomorphic rhabdomyosarcoma	1/2
Alveolar rhabdomyosarcoma	3/5
Embryonal rhabdomyosarcoma	3/3
Rhabdomyosarcoma	5/8
Liposarcoma	7/19
Leiomyoma	5/5
Leiomyosarcoma	19/25
Fibrosarcoma	5/28
Fibroma	2/3
Hemangioma	0/2

Pathology	# positive / total cases
Chondrosarcoma	1/7
Synovial sarcoma	0/5
Undifferentiated high grade pleomorphic sarcoma	2/8
Dermatofibrosarcoma protuberans	0/5
Giant cell tumor (Bone)	2/11
Multiple myeloma (Bone marrow)	0/1
Osteosarcoma	1/5
Sarcoma (Peritoneal cavity)	1/1
Carcinosarcoma (Malignant mixed Mullerian tumor, MMMT) (Peritoneal cavity)	1/1
Metastatic carcinoma	0/4
Metastatic adenocarcinoma	0/1

Precision

Precision studies for CONFIRM anti-Desmin (DE-R-11) antibody were completed to demonstrate:

- Between lot precision of the antibody.
- Within run and between day precision on a BenchMark ULTRA instrument.
- Between instrument precision on the BenchMark GX, BenchMark XT, and BenchMark ULTRA instrument.
- Between platform precision between the BenchMark GX, BenchMark XT, and BenchMark ULTRA instrument.

All studies met their acceptance criteria.

Precision on the BenchMark ULTRA PLUS instrument was demonstrated using representative assays. Studies included Within-run Repeatability, Between-day and Between-run Intermediate Precision. All studies met their acceptance criteria.

CLINICAL PERFORMANCE

Clinical performance data relevant to the intended purpose of CONFIRM anti-Desmin (DE-R-11) antibody were assessed by systematic review of the literature. The data gathered support the use of the device in accordance with its intended purpose.

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NOTE: A point (period/stop) is always used in this document as the decimal separator to mark the border between the integral and the fractional parts of a decimal numeral. Separators for thousands are not used.

The summary of safety and performance can be found here:

https://ec.europa.eu/tools/eudamed

Symbols

Ventana uses the following symbols and signs in addition to those listed in the ISO 15223-1 standard (for USA: see dialog.roche.com for definition of symbols used):

GTIN	Global Trade Item Number
UDI	Unique Device Identification
	Indicates the entity importing the medical device into the European Union

REVISION HISTORY

Rev	Updates
E	Updates to Intended Use (minor error corrected), Warnings and Precautions, Staining Procedure, Analytical Performance, and Intellectual Property sections. Added BenchMark ULTRA PLUS instrument.

INTELLECTUAL PROPERTY

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