CONFIRM anti-Cytokeratin 7 (SP52) Rabbit Monoclonal Primary Antibody

REF 790-4462

05986818001

IVD Σ 50

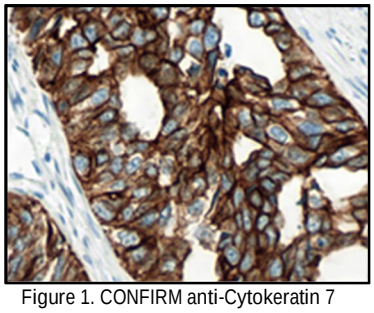

Figure 1. CONFIRM anti-Cytokeratin 7 (SP52) antibody staining lung carcinoma.

INTENDED USE

CONFIRM anti-Cytokeratin 7 (SP52) Rabbit Monoclonal Primary Antibody is intended for laboratory use in the qualitative immunohistochemical detection of cytokeratin 7 (CK7) 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

CONFIRM anti-Cytokeratin 7 (SP52) Rabbit Monoclonal Primary Antibody (CONFIRM anti-Cytokeratin 7 (SP52) antibody) detects CK7, a type II (basic/neutral) keratin encoded by the *KRT7* gene.[1,2] Expression of CK7 is typically found in many epithelia in organs such as the lung, breast, uterus, ovary, pancreas, thyroid, and bladder.[1-5] It is typically present in lung adenocarcinoma and carcinomas of the breast, uterus, and ovary.[1-4] Of note, the diagnostic utility of CK7 increases when used in conjunction with cytokeratin 20 (CK20).[1-4,6]

The detection of CK7 by immunohistochemistry (IHC) with the CONFIRM anti-Cytokeratin 7 (SP52) antibody may be used to aid in the identification of normal and neoplastic epithelial cells of the lung, breast, and female gynecologic tract (uterus, ovary, fallopian tube). The staining pattern is cytoplasmic.

PRINCIPLE OF THE PROCEDURE

CONFIRM anti-Cytokeratin 7 (SP52) antibody was raised against the carboxyl terminal region of the CK7 human protein spanning amino acids 451-469. CONFIRM anti-Cytokeratin 7 (SP52) antibody binds to CK7 protein in formalin-fixed, paraffin-embedded (FFPE) tissue sections and exhibits a cytoplasmic staining pattern. This antibody can be visualized using *ultra*View Universal DAB Detection Kit (Cat. No. 760-500 / 05269806001). Refer to the *ultra*View Universal DAB Detection Kit method sheet for further information.

MATERIAL PROVIDED

CONFIRM anti-Cytokeratin 7 (SP52) antibody contains sufficient reagent for 50 tests.

One 5 mL dispenser of CONFIRM anti-Cytokeratin 7 (SP52) antibody contains approximately 2.5 µg of a rabbit monoclonal antibody.

The antibody is diluted in Tris HCl with carrier protein and 0.10% ProClin 300, a preservative.

Specific antibody concentration is approximately 0.5 µg/mL. There is no known non-specific antibody reactivity observed in this product.

CONFIRM anti-Cytokeratin 7 (SP52) antibody is a recombinant rabbit monoclonal antibody produced as purified 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 for more products information.

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

1. Recommended control tissue
2. Microscope slides positively charged
3. Negative Control Rabbit Ig (Cat. No. 760-1029 / 05266238001)
4. *ultra*View Universal DAB Detection Kit (Cat. No. 760-500 / 05269806001)
5. Hematoxylin II (Cat. No. 790-2208 / 05277965001)
6. Reaction Buffer Concentrate (10X) (Cat No. 950-300 / 05353955001)
7. Cell Conditioning Solution (CC1) (Cat. No. 950-124 / 05279801001)
8. ULTRA Cell Conditioning Solution (ULTRA CC1) (Cat. No. 950-224 / 0524569001)
9. Antibody Diluent (Cat. No. 251-018 / 05261899001)
10. EZ Prep Concentrate (10X) (Cat. No. 950-102 / 05279771001)
11. LCS (Predilute) (Cat. No. 650-010 / 05264839001)
12. ULTRA LCS (Predilute) (Cat. No. 650-210 / 05424534001)
13. Bluing Reagent (Cat. No. 760-2037 / 05266769001)
14. General purpose laboratory equipment
15. 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.[7] 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. Ask your Roche representative for a copy of "Recommended Slide Storage and Handling" for more information

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. Do not use beyond the specified number of tests.
4. 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.
5. 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.
6. 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.[8,9]
7. Avoid contact of reagents with eyes and mucous membranes. If reagents come in contact with sensitive areas, wash with copious amounts of water.
8. Avoid microbial contamination of reagents as it may cause incorrect results.
9. 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 navifyportal.roche.com.
10. Consult local and/or state authorities with regard to recommended method of disposal.

11. Product safety labeling primarily follows EU GHS guidance. Safety data sheet available for professional user on request.
12. 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.
13. 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 mist or vapours.
	P273	Avoid release to 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 Table 2 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 790-4462.

Table 2. Recommended staining protocol for CONFIRM anti-Cytokeratin 7 (SP52) antibody with *ultra*View Universal DAB Detection Kit on BenchMark IHC/ISH instruments.

Procedure Type	Method	
	XT	ULTRA or ULTRA PLUS[a]
Deparaffinization	Selected	Selected
Cell Conditioning (Antigen Unmasking)	CC1, Standard	ULTRA CC1, 64 minutes, 95°C
Antibody (Primary)	16 minutes, 37°C	20 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."[10]

NEGATIVE CONTROL REAGENT

In addition to staining with CONFIRM anti-Cytokeratin 7 (SP52) antibody, a second slide should be stained with the appropriate negative control reagent.

POSITIVE TISSUE CONTROL

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 test sections.

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

Examples of positive control tissues for this antibody are the epithelia of lung, salivary gland, and breast tissues.

STAINING INTERPRETATION / EXPECTED RESULTS

The cellular staining pattern for CONFIRM anti-Cytokeratin 7 (SP52) antibody is cytoplasmic.

SPECIFIC LIMITATIONS

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

Table 3. Sensitivity/Specificity of CONFIRM anti-Cytokeratin 7 (SP52) antibody was determined by testing FFPE normal tissues.

Tissue	# positive / total cases	Tissue	# positive / total cases
Cerebrum	0/4	Small intestine	0/3
Cerebellum	0/4	Colon	1/4
Adrenal gland	0/3	Rectum	0/1
Ovary[a]	14/22	Liver	4/4
Pancreas	4/4	Salivary gland	4/4
Lymph Node	0/1	Kidney	4/4
Pituitary gland	2/3	Bladder	1/1
Testis	0/4	Prostate	4/4
Thyroid	4/4	Parathyroid gland	3/3
Breast[b]	9/9	Endometrium[d]	12/14
Spleen	0/3	Cervix	2/9
Tonsil	3/3	Fallopian tube[c]	4/4
Thymus	1/3	Vulva	1/7
Bone marrow	0/3	Skeletal muscle	0/3
Lung[c]	21/24	Skin	0/4
Heart	0/3	Nerve	0/3
Esophagus	0/3	Mesothelium	3/3

Tissue	# positive / total cases	Tissue	# positive / total cases
Stomach	1/4		

[a] Positive tissues exhibited staining in the ovarian surface epithelium.

[b] Tissues evaluated include normal and hyperplasia.

[c] Tissues evaluated include normal and chronic inflammation.

[d] Tissues evaluated include normal, hyperplasia and chronic inflammation.

Table 4. Sensitivity/Specificity of CONFIRM anti-Cytokeratin 7 (SP52) antibody was determined by testing a variety of FFPE neoplastic tissues.

Pathology	# positive / total cases
Astrocytoma (Cerebrum)	0/3
Meningioma (Cerebrum)	0/3
Ependymoma (Cerebrum)	0/1
Oligodendroglioma (Cerebrum)	0/1
Serous adenocarcinoma (Ovary)	6/6
Mucinous adenocarcinoma (Ovary)	1/1
Mature teratoma (Ovary)	1/2
Adenocarcinoma (Fallopian tube)	3/3
Neuroendocrine neoplasm (Pancreas)	0/1
Adenocarcinoma (Pancreas)	1/1
Seminoma (Testis)	0/3
Embryonal carcinoma (Testis)	0/1
Medullary carcinoma (Thyroid)	1/1
Papillary carcinoma (Thyroid)	1/1
Adenocarcinoma (Thyroid)	2/2
Ductal carcinoma (Breast)	5/5
Lobular carcinoma (Breast)	1/1
Adenocarcinoma (Breast)	3/3
Fibroadenoma (Breast)	1/1
Small cell carcinoma (Lung)	4/12
Large cell carcinoma (Lung)	5/5
Inflammatory myofibroblastic tumor (Lung)	5/5
Squamous cell carcinoma (Lung)	4/10
Adenocarcinoma (Lung)	17/17
Squamous cell carcinoma (Esophagus)	2/4
Adenocarcinoma (Esophagus)	1/1
Adenocarcinoma (Stomach)	4/4
Adenocarcinoma (Small intestine)	0/2
Gastrointestinal stromal tumor (GIST) (Small intestine)	0/1
Adenocarcinoma (Colon)	1/4
GIST (Colon)	0/1
Adenocarcinoma (Rectum)	1/4
GIST (Rectum)	0/1
Melanoma (Rectum)	0/1
Hepatocellular carcinoma (Liver)	3/5
Hepatoblastoma (Liver)	0/1
Clear cell carcinoma (Kidney)	0/2
Adenocarcinoma (Prostate)	1/3
Urothelial carcinoma (Prostatic Urethra)	1/1
Leiomyoma (Uterus)	0/3
Adenocarcinoma (Uterus)	6/6
Clear cell carcinoma (Uterus)	1/1
Intraepithelial neoplasia (Cervix)	2/2
Squamous cell carcinoma (Cervix)	5/7
Condyloma acuminatum (Vulva)	0/1
Squamous cell carcinoma (Vulva)	0/2
Embryonal rhabdomyosarcoma (Striated muscle)	0/1
Melanoma (Skin)	0/1
Basal cell carcinoma (Skin)	1/1
Squamous cell carcinoma (Skin)	0/2
Neurofibroma (Lumbar)	0/1
Neuroblastoma (Retroperitoneum)	0/1
Spindle cell rhabdomyosarcoma (Retroperitoneum)	0/1
Mesothelioma (Peritoneum)	1/1
B-cell lymphoma, NOS	0/2
T-cell lymphoma, NOS	0/1
Lymphoma, NOS	0/3
Hodgkin Lymphoma	0/2
Urothelial carcinoma (Bladder)	3/3
Leiomyosarcoma	0/5
Chondrosarcoma (Bone)	0/2
Pleomorphic adenoma (Salivary gland)	1/1
Nasopharyngeal carcinoma (Nasopharynx)	1/1
Colon carcinoma (Metastatic)	1/1
Breast carcinoma (Metastatic)	1/1
Lung carcinoma (Metastatic)	7/10
Gastric carcinoma (Metastatic)	1/1

Precision

Precision studies for CONFIRM anti-Cytokeratin 7 (SP52) antibody were completed to demonstrate:

- Between lot precision of the antibody.
- Within run and between day precision on BenchMark XT instrument.
- Between instrument precision on the BenchMark XT and BenchMark ULTRA instrument.
- Between platform precision between the 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-Cytokeratin 7 (SP52) antibody were assessed by systematic review of the literature. The data gathered support the use of the device in accordance with its intended purpose.

REFERENCES

1. Dabbs DJ. Diagnostic Immunohistochemistry: Theranostic and Genomic Applications, 5th Edition. Amsterdam, Netherlands: Elsevier; 2018.
2. Chu PG, Weiss LM. Keratin Expression in Human Tissues and Neoplasms. Histopathology. 2002;40(5):403-439.
3. Karantza V. Keratins in Health and Cancer: More Than Mere Epithelial Cell Markers. Oncogene. 2011;30(2):127-138.
4. Moll R, Divo M, Langbein L. The Human Keratins: Biology and Pathology. Histochem Cell Biol. 2008;129(6):705-733.
5. Kumar A, Jagannathan N. Cytokeratin: A Review on Current Concepts. International Journal of Orofacial Biology. 2018;2(1).
6. Bahrami A et al. Undifferentiated tumor: true identity by immunohistochemistry. Arch. Pathol. Lab Med. 2008;132(3):326-48.
7. Carson FL, Cappellano C. Histotechnology; A Self-Instructional Text, 5th edition. American Society for Clinical Pathology Press; 2020, 2022.
8. Occupational Safety and Health Standards: Occupational exposure to hazardous chemicals in laboratories. (29 CFR Part 1910.1450). Fed. Register.
9. Directive 2000/54/EC of the European Parliament and Council of 24 June 2020 on the protection of workers from risks related to exposure to biological agents at work.
10. Roche PC, Hsi ED. Immunohistochemistry-Principles and Advances. Manual of Clinical Laboratory Immunology, 6th edition. In: NR Rose, ed. ASM Press; 2002.

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 elabdoc.roche.com/symbols for more information).

GTIN	Global Trade Item Number
Rx only	For USA: Caution: Federal law restricts this device to sale by or on the order of a physician.

REVISION HISTORY

Rev	Updates
E	Updates to Warnings and Precautions section. Updated to current template.

INTELLECTUAL PROPERTY

For USA: Rx only

CONTACT INFORMATION

Ventana Medical Systems, Inc.
1910 E. Innovation Park Drive
Tucson, AZ 85755
USA
+1 520 887 2155
+1 800 227 2155 (USA)

www.roche.com

EC REP

Roche Diagnostics GmbH
Sandhofer Strasse 116
68305 Mannheim
Germany
+800 5505 6606

CE 0123