

## Anti-CA-IX

Catalog No.	Description
AMC19-5M	6 ml of Ready-to-Use Antibody for use with BioGenex Super Sensitive™ Detection Systems OR equivalent detection system
AMC19-10M	10 ml of Ready-to-Use Antibody in a barcode labeled vial for use with BioGenex Super Sensitive™ Detection Systems and i6000™ Automated Staining Systems
MUC19-UC	1 ml of Concentrated Antibody for use with BioGenex Super Sensitive™ Detection Systems OR equivalent detection system
MUC19-5UC	0.5 ml of Concentrated Antibody for use with BioGenex Super Sensitive™ Detection Systems OR equivalent detection system
AXC19-YCD	Ready-to-Use Antibody in Barcode labeled vial for use on the Xmatrx® Elite Staining System, 160 tests
AXC19-50D	Ready-to-Use Antibody in Barcode labeled vial for use on the Xmatrx® Elite Staining System, 50 tests
AXC19-4M	Ready-to-Use Antibody in Barcode labeled vial for use on the NanoVIP® Staining System, 50 tests
VMC19-5M	6 ml of Ready-to-Use Antibody for use with BioGenex / equivalent Detection systems on third party automation.

Clone	Species	Ig Class
H-11	Mouse	IgG2a

### Intended Use

**For In Vitro Diagnostic Use.** This antibody is designed for the specific localization of human CA-IX in formalin-fixed, paraffin-embedded (FFPE) tissue sections. Evaluation must be performed by a qualified pathologist.

### Summary and Explanation

Carbonic anhydrase IX (CA-IX) is a cell surface transmembrane protein, belongs to the monomeric alpha class of zinc metalloenzymes called as Carbonic anhydrases. These enzymes catalyze the rapid hydration of carbon dioxide and water into carbonic acid, bicarbonate ions and protons. CAIX also participates in cellular pH regulation across the membrane by cooperating with sodium bicarbonate co-transporters (NBC), sodium/hydrogen exchanger (NHE) and lactate and proton exporting monocarboxylic acid transporters (MCT). It is predominantly expressed in the all clear-cell renal cell carcinomas, common epithelial tumors such as carcinomas of the esophagus, lung, colon, kidney, cervix, non-small cell lung carcinoma, gastrointestinal tract and gallbladder but is not detected in most of the normal tissues. Hence it is known to be one of tumor-associated carbonic anhydrase isoenzyme.

### Storage and Handling

**Store at 2-8°C.** Fresh dilutions, if required, should be prepared prior to use and are stable and steady for up to one day at room temperature (20-26°C). Diluted antibody preparations can be refrigerated or frozen for extended shelf life.

### Principles of the Procedure

Antigen detection by immunohistochemistry (IHC) is a two-step process wherein the primary antibody binds to the antigen of interest and that binding is detected by a chromogen. The [primary antibody](#) may be used in IHC using manual techniques or BioGenex Automated Staining System. Positive and negative controls should always be run simultaneously with all patient specimens.

### Reagents Provided

Mouse Monoclonal Antibody to human CA-IX is affinity purified and diluted in PBS, pH 7.2, containing 1% BSA and 0.09% sodium azide.

### Dilution of Primary Antibody

BioGenex Ready-to-Use antibodies have been optimized for use with the recommended BioGenex Detection System and should not require further dilution.

BioGenex concentrated antibodies must be diluted in accordance with the recommended protocol when used with the recommended BioGenex Detection System.

### Recommended Protocol

Refer to the following table for conditions specifically recommended for this antibody. Refer to the BioGenex website for guidance on specific staining protocols or other requirements.

Parameter	BioGenex Recommendations
Control Tissue	GIST tissue as available with Biogenex FB-C19M* & FG-C19M*
Recommended Dilution for Concentrated Antibody	<b>1:20-50 in HK941</b>
Recommended Pretreatment (Manual/i6000)**	EZ-AR2 Elegance (HK547-XAK)
Recommended Pretreatment (Xmatrx & NanoVIP)	EZ-AR2 Elegance (HX032-YCD & HX046-08XN)
Antibody Incubation (Manual/i6000)	30-60 Min at RT
Antibody Incubation (Xmatrx & NanoVIP)	30-60 Min at 25°C
Detection System for Manual, Xmatrx, NanoVIP & i6000 systems***	Use BioGenex Two-Step <b>OR</b> One-Step Super Sensitive™ Polymer-HRP IHC Detection System/DAB; see p. 2 for more information

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\*FB: positive control micro chamber slides, FG: positive control microscopic slides. Xmatrx & NanoVIP requires micro chamber slides.

\*\*Pretreatment times will vary based on individual microwave power.

\*\*\*For automation systems (Xmatrx-Elite, NanoVIP & i6000 Diagnostics), refer to the factory protocols provided with the instrument.

Detection System	Two-Step HRP Kit	One-Step HRP Kit	Link and Label Kit
Manual	QD440-XAKEN (1000 Test)	QD630-XAKEN (1000 Test)	QP300-XAKE (1000 Test)
	QD430-XAKEN (1000 Test)		
	QD420-YIKEN (500 Test)	QD620-XAKEN (500 Test)	QP900-9LE (500 Test)
	QD400-60KEN (60 Test)		
Xmatrx - Automation	QD550-YCDEN (200 Test)	QD610-YADEN (200 Test)	N/A
NanoVIP- Automation	QD551-YCDEN (100 Test)	QD611-YADEN (100 Test)	N/A
i6000 - Automation	QD410-YAXEN (200 Test)	QD610-YAXEN (200 Test)	N/A
For more information, visit <a href="http://www.biogenex.com">www.biogenex.com</a> .			

### Precautions

This product contains sodium azide at concentrations of less than 0.1%. Sodium azide is not classified as a hazardous chemical at the product concentrations, but proper handling protocols should be observed. For more information, a Safety Data Sheet (SDS) for sodium azide is available upon request. Dispose of unused reagents according to Local, State and Federal Regulations. Wear suitable Personal Protective Equipment, do not pipette reagents by mouth, and avoid contact of reagents and specimens with skin and mucous membranes. If reagents or specimens come in contact with sensitive area, wash with copious amounts of water.

### Quality Control

Refer to BioGenex detection system documents for guidance on general quality control procedures.

### Troubleshooting

Refer to the troubleshooting section in the documentation for BioGenex Detection Systems (or equivalent detection systems) for remedial actions on detection system related issues, or

contact BioGenex Technical Support Department at 1-800-421-4149 or [support@biogenex.com](mailto:support@biogenex.com) or your local distributor to report unusual staining.

### Expected Results

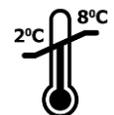
This antibody stains membrane in positive cells in formalin-fixed, paraffin embedded tissue sections. An example image of a tissue section stained with this antibody can be found on the product page on the BioGenex website. Interpretation of the staining result is solely the responsibility of the user. Experimental results should be confirmed by a medically-established diagnostic product or procedure.

### Limitations of the Procedure

Improper tissue handling and processing prior to immunostaining can lead to inconsistent results. Variations in embedding and fixation or the nature of the tissue may lead to variations in results. Endogenous peroxidase activity or pseudo peroxidase activity in erythrocytes and tissue biotin may result in non-specific staining based on the detection system employed. Tissues containing Hepatitis B Surface Antigen (HBsAg) may give false positive with horseradish peroxidase systems. Improper counterstaining and mounting may compromise the interpretation of results.

### Bibliography

1. Tripp, B. C., Smith, K., & Ferry, J. G. (2001). Carbonic Anhydrase: New Insights for an Ancient Enzyme. *Journal of Biological Chemistry*.
2. Nishimori, I., & Onishi, S. (2001). Carbonic anhydrase isozymes in the human pancreas. *Digestive and Liver Disease*.
3. Zavadova, Z., & Zavada, J. (2005). Carbonic anhydrase IX (CA IX) mediates tumor cell interactions with microenvironment. *Oncology Reports*.
4. Pastorekova, S., & Gillies, R. J. (2019). The role of carbonic anhydrase IX in cancer development: links to hypoxia, acidosis, and beyond. *Cancer and Metastasis Reviews*.

	Temperature Limitation		In Vitro Diagnostic Medical Device
	Use By Date		Batch Code
	Non-Sterile		Consult Instructions for Use
	Representative in the European Community		Manufacturer

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