

EZ-Retriever® System

Pre-treatment and Antigen Retrieval System

A Complete Solution for pre-treatment
of tissue in Molecular Pathology



Instruction Manual

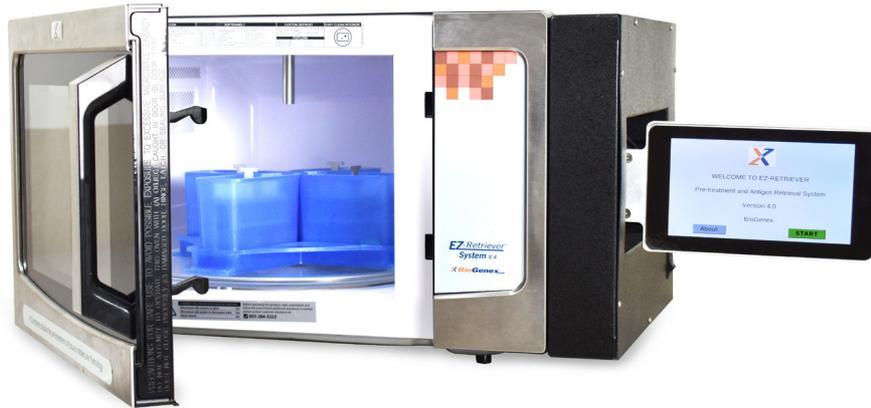
MW016-IR 110V System

EZ to Understand
EZ to USE
EZ to Rely on

BioGenex
Accelerating the pace of precision medicine

Instruction Manual

INSTRUCTION MANUAL



EZ-Retriever® System

Pre-treatment and Antigen Retrieval System

BioGenex

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REF

MW016-IR For Laboratory Use only

Explanation of Symbols



Catalogue number



Please consult instructions for use



Manufactured by:



Ground: This symbol indicates or identifies the location of earth grounding position on the instrument.



ATTENTION: Indicates special problems or important information. Read the accompanying text carefully.



Caution (refer to accompanying documents). Please refer to safety-related notes in the manual accompanying this instrument.



HIGH VOLTAGE: This symbol indicates or warns the operator that the line voltage is present in the area of the symbol and there is the potential for electric shock.

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Introduction

Antigen Retrieval is used in pre-treatment of samples in Molecular Pathology and helps in unmasking the target antigenic sites. The masking of antigenic epitopes happens during tissue fixation.

Two different methods used for the purpose are:

- (a) Heat Induced Epitope Retrieval (HIER)
- (b) Proteolytic Induced Epitope Retrieval (PIER)

Studies have revealed that the Antigen Retrieval heating method can distinctly enhance the results in Immunohistochemistry (IHC), in-situ hybridization (ISH) and FISH (fluorescence in situ hybridization) techniques, for tissues embedded in plastic embedding media, celloidin-embedded tissues, or non-embedded tissue slices, as well as in cell smear preparations fixed in non-cross linking fixatives.

The BioGenex EZ-Retriever® System V4.0 is intended for Dewaxing, Rehydration for all tissue preparations and Antigen retrieval and nucleic acid retrieval for formalin-fixed, paraffin-embedded tissue sections. For optimal results, the use of BioGenex Antigen Retrieval solutions is recommended.

Principle

Majority of the formalin fixed tissues requires an antigen retrieval step before immunohistochemical staining. This is due to the formation of methylene bridges during fixation, which cross link proteins and therefore mask antigenic sites. Antigen retrieval methods serve to break these methylene bridges to expose the antigenic sites in order to allow the antibodies to bind. The demonstration of many antigens can be significantly improved by the pretreatment of sample with the antigen retrieval reagents which assist in unmasking the hidden antigenic sites.

Microwave irradiation of formalin-fixed, paraffin-embedded specimens has been found to markedly enhance the retrieval of antigens that help to overcome false negative staining and thus provide a crystal clear image. In this technology, a magnetron converts electrical energy into microwaves that has shorter wavelength and greater frequency. The amount of microwave energy absorbed by a given specimen (or “load”) depends on the size of the load, its orientation with respect to the waves, and the dielectric and thermal properties of the material.

BioGenex ***EZ-Retriever® System V4.0*** is specifically designed to unmask the antigens on the tissue section based on Microwave technology. The thrust of the technology is based on the application of heat for varying lengths of time to formalin-fixed, paraffin-embedded (FFPE) tissue sections immersed in “Antigen Retrieval Solution” with a unique feature of temperature monitoring system.

Unique Features

- Programmable Time and Temperature Control
- DeWax, Rehydration & Antigen Retrieval in 30 minutes^ψ
- Contactless Temperature Sensing
- User-Friendly Interface
- User-Defined Protocols for Versatility
- Default Factory Protocols for Convenience and Consistency in results
- High Throughput
- Preserves the tissue morphology, resulting in effective staining.
- Valuable tool for Investigative Pathology wherein high quality of staining is required.

^ψTimings are subjected to ideal laboratory conditions

Specifications

General Specifications*	
Model	MW016-IR
Rated Voltage	110 V / 60 Hz
Rated Input power	1550 W
Rated Output power	900 W
Oven Capacity	1.2 cu-ft
External Dimensions (WxDxH) in inches	23" X 17.7" X 13" (width extends to 32.9" in display open mode)
Turntable Diameter	12.3"
Instrument weight	46.3 lbs (21 kg)
Factory supplied parts	P/N 6520-26628, Microwave Probe Tank (1)
	P/N 6520-26629, Microwave Tank (3)
	P/N 4730-20006, Slide Rack (4)
	P/N 6520-60152, Tank Holder (1)
	P/N 4271-00017, Turntable (1)
	P/N 4271-00015, Rotating Ring (1)
Environmental conditions	10 °C to 40°C
Technical Specifications	
Operations	Default Protocols and User Protocols
Heat Control	Through Microwaves
Temperature Monitor	By Contactless IR Temperature Sensor

* Specifications are subjected to change without prior information

† If the optional kit for compliance to clinical and Laboratory standards Institute (CLSI) guidelines is purchased

Equipment Checklist

- Carefully unpack the instrument.
- Preserve the box and packing materials for future use.
- Ensure that you have all the following items along with BioGenex EZ-Retriever® System V4.0 instrument user's manual.

<u>Catalogue Number</u>	<u>Description</u>	<u>Quantity</u>
P/N 6520-26628	Microwave Probe Tank	(1)
P/N 6520-26629	Microwave Tank	(3)
P/N 4730-20006	Slide Rack	(4)
P/N 6520-60152	Tank Holder	(1)
P/N 4271-000017	Turntable	(1)
P/N 4271-000015	Rotating Ring	(1)



The system may not function properly if you use items that are not preinstalled or distributed by BioGenex. If any of the items are missing or damaged, please contact us immediately.

Instrument Overview

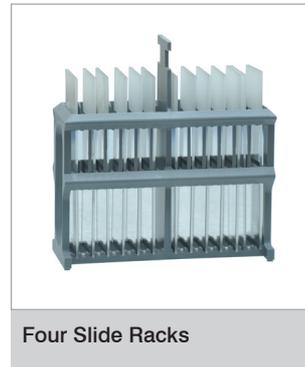
Figure1: EZ-Retriever® System V4.0 with all the components.



Microwavable Tank holder



Four Microwavable Holders



Four Slide Racks

Instrument Overview

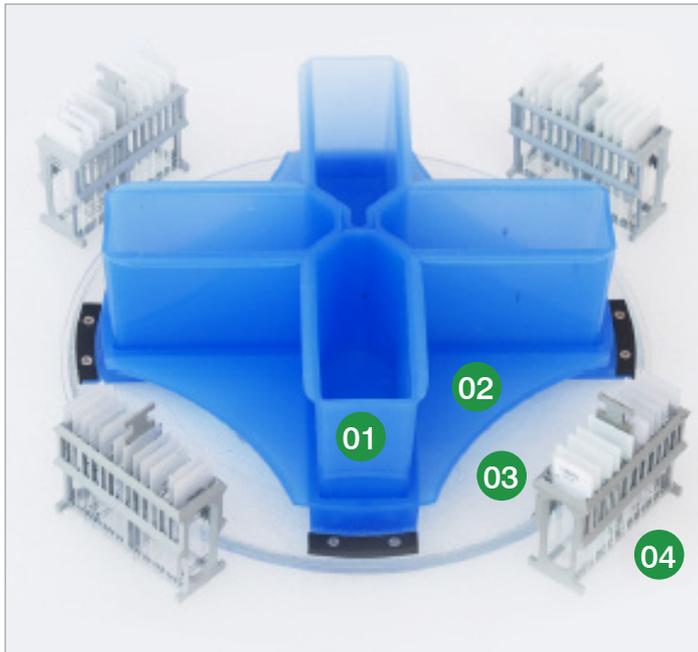
Figure 2: EZ-Retriever® System V4.0



1. Observation Window
2. Microwavable Tank
3. Safety Interlock System
4. Temperature Sensor
5. Turntable
6. Rotating Ring
7. Touch Screen Display
8. ON/OFF Switch

Instrument Overview

Figure 3: Top view of the microwavable tanks for retrieval solution, slide racks, microwavable tank holder and turntable which are placed inside the microwave.



1. Four Microwavable tanks for antigen retrieval solution. These tanks should always be filled with at least 280 ml. of retrieval solution.
2. Microwavable Tank Holder. Make sure that the tanks are kept centrally on tank holder.
3. Glass Turntable. Always keep both the glass turn table and rotating ring at the center of oven.
4. Slide Racks. Each slide rack can hold 24 slides. Slides shall be equally distributed among the tanks
5. Tanks setup needs to be done as per below images.



Quick Tour

- The **EZ-Retriever® System V4.0** has been designed for general laboratory use only.
- It is an effective Antigen Retrieval system for formalin-fixed, paraffin-embedded tissue sections.
- The instrument is provided with all the components such as Microwavable Tanks, Microwavable tank holder, slide racks, turntable and rotating ring.
- Each Microwavable tank can hold one slide rack and each slide rack can accommodate 24 slides.
- It is an effective Antigen Retrieval system for formalin-fixed, paraffin-embedded tissue sections.
- It is time and temperature controlled to ensure proper processing of the tissue sections during a single run.
- IR temperature sensor is used to measure the temperature of the solution.



Do not use a metal slide rack as it could produce arcing affect and damage the instrument. Use protective gloves or pads while removing the inner base from the instrument. To avoid fire, do not use this unit for any other purpose.

Temperature Control

The recommended temperature for Antigen Retrieval at higher temperatures is 95° –107°C. The temperature can be changed in increments of 1°C.



Make sure that there is sufficient reagent volume inside the Microwavable tanks while using higher temperatures for Antigen Retrieval as insufficient reagent volume could cause overheating of the components and possible damage to the instrument. Ensure that the Tank arrangement as per the slide capacity and instruction note.

Time Control

The recommended time for each heating cycle is 4 to 5 minutes when used in combination with High Temperature Antigen Retrieval solution.



Make sure that there is sufficient reagent volume inside the tanks while using long heating times. The maximum heating cycle allowed by the program is 15 minutes from the time the set point is reached. Make sure that the instrument is connected to a 16A switch on the main power supply.

Microwave Tank and Tank Holder

The Microwave tanks are made of microwavable material and can withstand high temperatures. Each tank can hold up to 24 slides and 280 ml of solution.



DO NOT attempt to install or remove the tank when there is power failure during the Run.

Safety Notices



It is recommended that EZ-Retriever® System V4.0 should be used by a qualified person only.

EZ-Retriever® can be safely used in a laboratory, provided that certain precautions are observed. The EZ-Retriever® presents no hazards to the user if operated according to the Instructions in this manual. Read the following safety precautions before operating this instrument. Read and follow the precautions described in the section titled “Precautions to Avoid Possible Exposure to Excessive Microwave Energy”. Clinical interpretation of any results from the EZ-Retriever® is solely the responsibility of the user. Use this instrument only for its intended use as described in this manual.

Following is the list of the safety measures:

1. This instrument MUST BE GROUNDED. Connect the instrument to properly grounded outlets of the specified voltage 

- Never place a conductive material (such as a metal container) inside the EZ-Retriever®
- Periodically inspect and clean the door seals and hinges
- Never heat food in EZ-Retriever®
- Never use toxic chemicals in EZ-Retriever® System V4.0
- Do not use flammable solvents in EZ-Retriever® System V4.0

2. In case of fire inside the instrument, DO NOT OPEN THE DOOR. Turn off the power and disconnect the power cord or shut down power at the fuse or circuit breaker panel.

3. The AC line cord provided with the unit is intended to ground the chassis to help prevent shock and injury to the personnel. The national and local electrical code requires a three-conductor AC outlet that connects the ground wire of the cord to the power ground.

4. DO NOT try to open the instrument covers as high voltage components can cause shock even if the instrument is disconnected from the power source.

Precautions to Avoid Possible Exposure to Excessive Microwave Energy



- DO NOT attempt to operate the instrument with the door open since this can result in harmful exposure to microwave energy. It is essential to use safety interlocks.
- DO NOT place any object in between the front end of the instrument and the door or allow soil or cleaner residue to accumulate on sealing surfaces.
- DO NOT operate this instrument if it is damaged. It is essential to check that the instrument door is closed properly and there is no damage to the
 - DOOR (Dent)
 - HINGES AND LATCHES (broken or loosened)
 - DOOR SEALS AND SEALING SURFACES
- DO NOT bypass, defeat or tamper with any of the safety interlocks.
- DO NOT operate the instrument with insufficient reagent as it could cause overheating of the components. This can result in microwave leakage from the instrument and possible damage to the EZ-Retriever[®]
- The instrument must be serviced ONLY by qualified service personnel.
- There are no user serviceable parts inside the instrument therefore DO NOT try to open the instrument.
- High voltage can cause shock even if the instrument is disconnected from the power source. 

General Precautions



To reduce the risk of fire, electric shock, injury, or exposure to excessive microwave energy follow the general precautions described below. Install or locate this instrument **ONLY** in accordance with the instructions of this manual.

1. Place the instrument on a flat surface, in a location that provides adequate ventilation.
2. DO NOT cover or block any openings of the instrument.
3. Use ONLY the accessories supplied by BioGenex.
4. To avoid the false temperature sensing, use only the tank holder and tanks provided with the instrument. Ensure that the tanks are always filled with at least 280 ml. of solution.
5. DO NOT use EZ-Retriever® in an atmosphere where flammable or corrosive vapors may be present. Operating AC-line-powered equipment in such an environment may cause an explosion.
6. Keep the cord away from heated surfaces and DO NOT let the cord hang over table or counter.
7. DO NOT operate with a damaged power cord or immerse the cord or plug in water.
8. DO NOT operate EZ-Retriever® empty.
9. The turntable and the rotating ring must be in the oven during the RUN time.
10. DO NOT set the instrument to run at temperatures higher than 95° C, if the tanks are filled with distilled water or other aqueous solution.
11. DO NOT try to remove or install the tank holder when there is power failure
12. Always wait for the tanks and the tank holder inside the microwave to cool before removing them from the microwave.
13. Please ensure that there is no boiling due to excessive heating while performing the desired protocol.

14. The instrument has several built-in safety switches to ensure that the power remains off when the door is open. Do not tamper with these switches.
15. Failure to maintain the instrument in a clean condition leads to deterioration of the surface that could adversely affect the life of the instrument and possibly result in a hazardous situation.
16. DO NOT use the instrument cavity for storage purposes when not in use.

Do not store this instrument outside. For long term storage, instrument may be stored in its original shipping container in a dry location.

EZ-Retriever® does not facilitate active cooling from higher to lower temperature. Therefore, in case of 2-cycle run, the temperature of the first cycle should be set lower than or equal to the temperature of 2nd cycle. If antibody protocol specifies lower temperature for the 2nd cycle, all solutions in tanks should be replaced.

Installation Instructions



Warning: To ensure proper operation of the instrument, read BioGenex EZ-Retriever® instrument Instruction Manual carefully before installation.



Warning Attention: If your instrument has been exposed to marked changes in temperature or humidity, wait for it to acclimatize sufficiently before operating.



Warning Attention: Upon receipt, check the contents of the BioGenex EZ-Retriever® System V4.0 box for completeness. If the contents have suffered from any damage in transport, contact BioGenex Service representative immediately.

Grounding Installation

Remove all packing material and accessories. Examine the instrument for any damage such as dents or broken door. Do not install if instrument is damaged.

This instrument must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electrical shock by providing an escape wire for the electric current. This instrument is equipped with a cord having a grounding wire with a grounding plug. The instrument must be plugged into an outlet that is properly installed and grounded.

Consult a qualified electrician or serviceman if the grounding instructions are not completely understood or if doubt arises as to whether the instrument is properly grounded. If it is necessary to use an extension cord, use only a 3- wire extension cord.



Warning: Improper use of the grounding can result in electric shock. Do not plug into an outlet until instrument is properly installed and grounded.



Danger: Electric shocks Hazard touching some of the internal components can cause serious personal injury or death. Do not disassemble this instrument.

Instrument installation

Select a level surface that provides enough open space for the intake or outlet vents and suitable location for the instrument.

A minimum clearance of 3.0 inch (7.5 cm) is required between the instrument and any adjacent wall. One side must be open.

Leave a minimum clearance of 12 inch (30.0 cm) above the instrument.

Blocking the intake and/or outlet openings can damage the instrument.

Ensure that the socket outlet must be easily accessible and nearer to the instrument to disconnect the plug.

The back, top and sides of the instrument require a minimum of 2-inch clearance from walls to allow adequate ventilation. Allow at least 3 inches from door front to edge of bench top to avoid accidental tipping of the instrument.

EZ-Retriever[®] instrument is designed to be placed on a standard lab bench or on a suitable desktop.

The lab bench must be able to safely support the weight of the machine and support equipment.

The EZ-Retriever[®] may be handled by 1 person but 2 persons are recommended. The instrument may be safely lifted anywhere around the bottom perimeter by the base plate.

The rotating ring and turntable must be properly centered and engaged with the drive cog. This is very important, so check this before each run.

Make sure that both the turntable and the tank holder with all microwave tanks are centered.

Important Note:

For installation :

The Instrument should be plugged into a separate circuit with the electrical rating of 16 Amp on the main power supply.

Operating Instructions



Operations

Switch ON the EZ-Retriever® by plugging in the instrument into a standard laboratory outlet. Be sure that the voltage and frequency are same as mentioned on the rating label.

As soon as EZ-Retriever® is ON you can see display showing the logo “Welcome to EZ-Retriever® Version 4.0 BioGenex “.

Make sure that the turntable ring and turntable are placed centrally inside the EZ-Retriever®.

To make the antigen retrieval process more consistent, have all the microwave tanks filled with antigen retrieval solutions or buffers and the slides ready before starting the run

Fill each tank with at least 280 ml of antigen retrieval solution. At least 1 tank is required for each run. The two tanks must be in opposing positions in the Tank Holder in order to balance each other during the antigen retrieval process. In case of insufficient sample load you can fill the additional tank with equal slide capacity.

Keep the Tank Holder with microwave tanks having antigen retrieval solution with slides to be processed at the center of the turntable.

EZ-Retriever® instrument has got two modes of selecting the protocol for antigen retrieval process i.e.

Default Protocols

User-Protocols

To select any of these protocols close the EZ-Retriever® instrument door and click on the Start button. Follow instructions appearing on the display to enter applications or to create protocols.

Operation of Default Protocols

The EZ-Retriever[®] has been installed with three different default protocols. These default protocols are designed based on the most ideal conditions required for antigen retrieval process.

<u>Catalogue Number</u>	<u>Temperature</u>	<u>Time</u>	<u>Number of Cycles</u>
Protocol - 1	95° C	5 Min	1
	95° C	5 Min	1
Protocol - 2	95° C	5 Min	1
	107° C	5 Min	1
Protocol - 3	60° C	5 Min	1
	90° C	5 Min	1

Operational Procedure for EZRT Application:

Below are the steps to launch and use the EZRT application.

1. As soon as the instrument is switched ON, this screen is displayed on the touch panel.



1.1 Clicking on “About” will show the information about EZRT System

About EZRT System

System Version - 4.0 && Software Version - 1.0
EZ-Retriever® System is a microwave-based antigen retrieval pre-treatment system invented by BioGenex. It is used for dewaxing, rehydration and antigen retrieval of FFPE tissue sections to enhance exposure of antigenic epitopes. This system resolves the issues of inconsistency due to different types of antigen retrieval methods with varying maximum microwave power levels, solution volumes, and heating time. It facilitates the standardization of dewaxing and antigen retrieval protocols to produce high quality and reproducible stains. It is also user-friendly and high throughput (96 slides in 30 minutes)

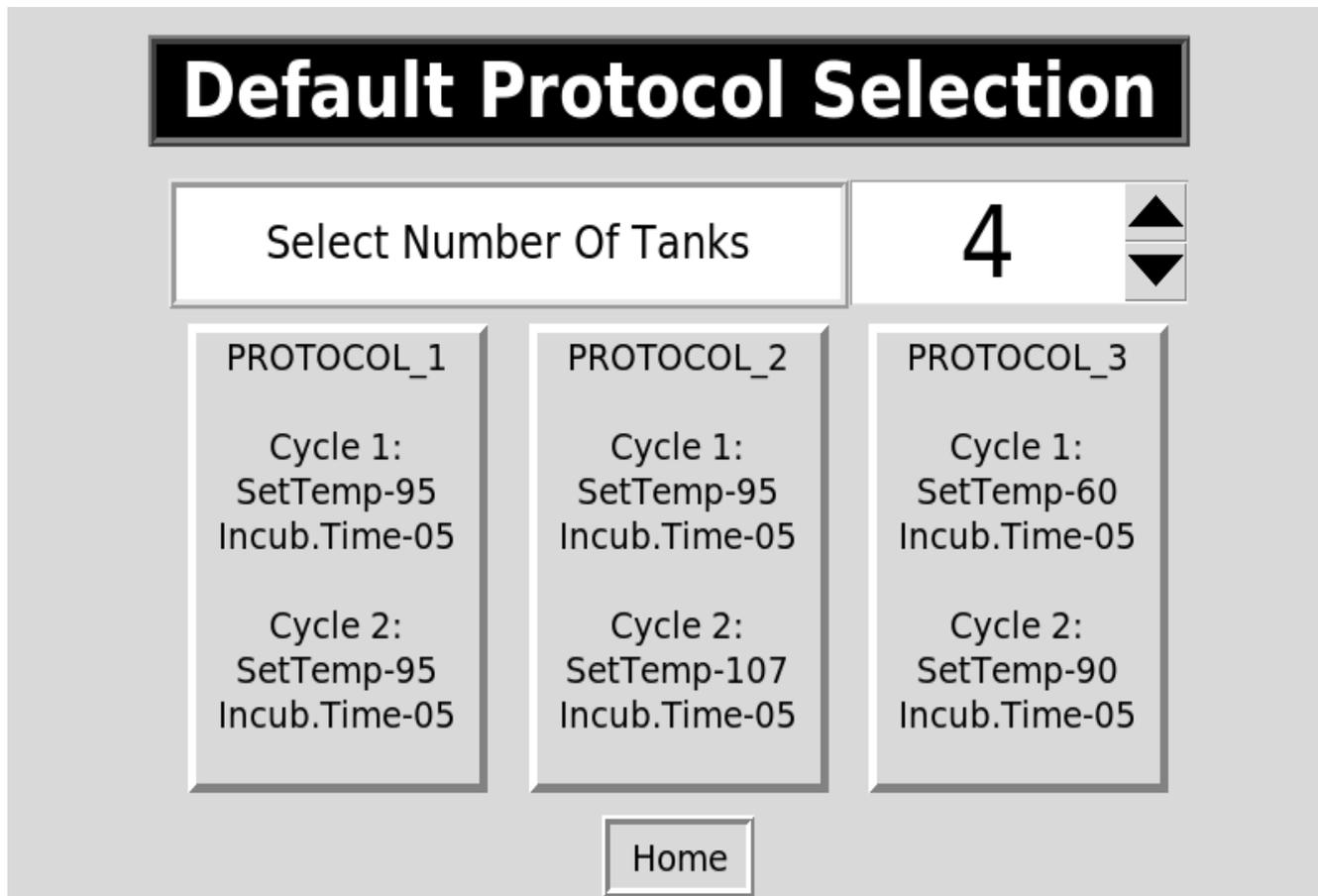
Home

click on “Home” to navigate in to welcome screen.

2. After clicking on start you get the protocol selection screen. Select the protocol you want to go with

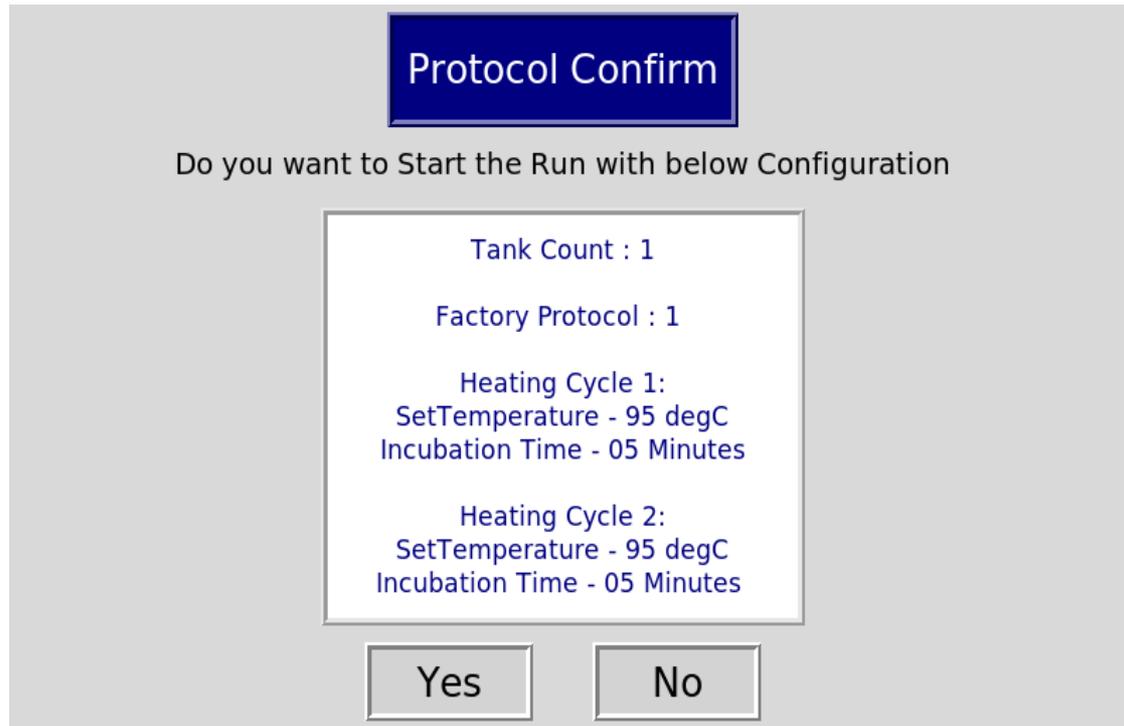


3. To select any of the default protocols press the 'Factory Protocol' key on the touch panel. All three protocols with temperature, time and number of cycles present in each protocol will be displayed on the touch panel.



Note: To return to the main screen press the key corresponding to 'Home'.

4. A protocol confirmation is shown where it summarizes all the settings selected by the user. Start the run by pressing 'Yes'. The user can go back to the previous screen by selecting 'No'.



Note: Please hold for a few seconds after clicking on "Yes"

5. Heat cycle 1 starts after clicking yes and followed by it the successive heat cycles are executed.

The screenshot displays a control interface for a heating cycle. At the top, a green box with white text reads "Heating Cycle: 1". Below this, the interface is organized into two columns. The left column contains two large white boxes with black text: "Current Temperature" and "Incubation Time left". The right column contains several smaller white boxes: "Set Temperature : 95 degC" at the top, followed by a box showing "96" and another showing "degC", then a row of four boxes showing "4", "Mins", "54", and "Secs". Below these, the left column shows "Set Tank Count : 2" and the right column shows "Set Incubation Time : 5 Minute(s)". At the bottom, there are two buttons: "Stop" on the left and "Pause" on the right.

Heating Cycle: 1

Set Cycle Count: 2 Set Temperature : 95 degC

Current Temperature 96 degC

Incubation Time left 4 Mins 54 Secs

Set Tank Count : 2 Set Incubation Time : 5 Minute(s)

Stop Pause

Note: The Run can be paused or stopped anytime during the process by pressing the corresponding keys on the touch panel.

6. If user want to go with custom protocol, then user should select custom protocol in protocol selection screen which will navigate to the 'Run configuration' screen on the touch panel. Now select the number of cycles and tanks required for the run and confirm the selection by selecting the 'Continue' button which will lead to the next screen.

The image shows a 'Run Configuration' screen with a black title bar at the top containing the text 'Run Configuration' in white. Below the title bar are two rows of input fields. The first row is labeled 'Select Heating Cycles' and contains the number '1'. The second row is labeled 'Select Number Of Tanks' and also contains the number '1'. To the right of each number are two arrow buttons (up and down) for navigation. At the bottom of the screen are two buttons: 'Home' on the left and 'Continue' on the right.

Note: This screen will accept a maximum of 2 cycles and will ignore any number above 2. Only 1, 2 and 4 tanks can be selected by up and down keys.

7. 'Configure Cycle 1' screen opens up.

Set the temperature in degrees C (between 40 to 107)

Set the incubation time in minutes (between 1 to 15)

Confirm the selection by selecting the 'Continue' button.

The screenshot displays a configuration screen titled "Configure Cycle: 1". It features two input fields for setting parameters. The first field is labeled "Set Temperature (degC)" and shows a value of 90, with up and down arrow buttons to its right. The second field is labeled "Set Incubation Time (min)" and shows a value of 5, also with up and down arrow buttons to its right. At the bottom of the screen, there are two buttons: "Back" on the left and "Continue" on the right.

Parameter	Value
Set Temperature (degC)	90
Set Incubation Time (min)	5

8. 'Configure cycle 2' screen is displayed on the touch panel.

Set the temperature in degrees C (between 40 to 107)

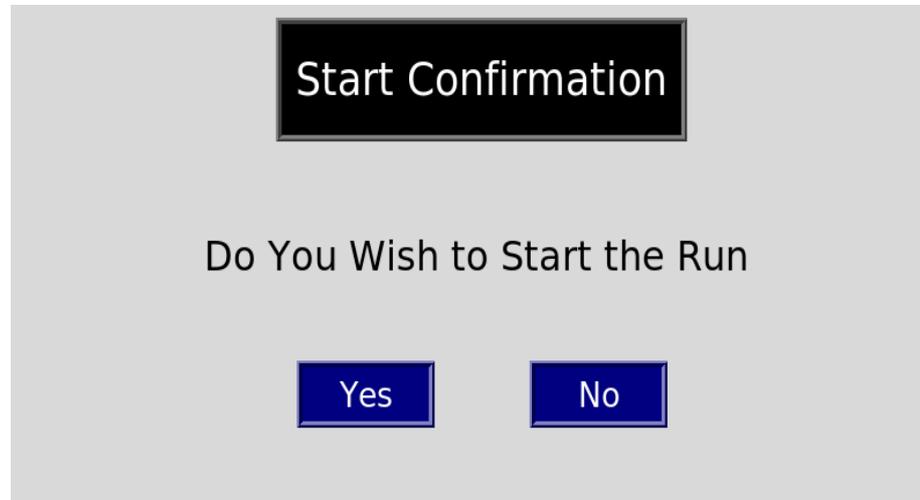
Set the incubation time in minutes (between 1 to 15)

Confirm the selection by selecting the 'Continue' button.

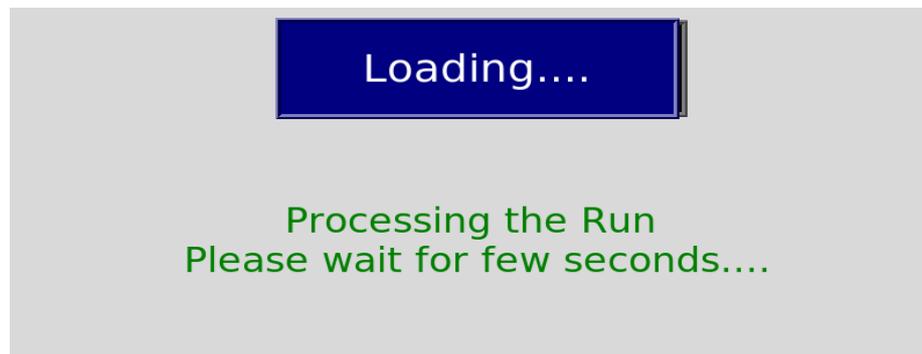
The screenshot shows a touch panel interface for configuring cycle 2. At the top, a black box with white text reads "Configure Cycle: 2". Below this, there are two rows of input fields. The first row is labeled "Set Temperature (degC)" and shows the value "90" with up and down arrow buttons to its right. The second row is labeled "Set Incubation Time (min)" and shows the value "5" with up and down arrow buttons to its right. At the bottom of the screen, there are two buttons: "Back" on the left and "Continue" on the right.

Note: The Configure cycle selection depends on the number of cycles the user has selected.

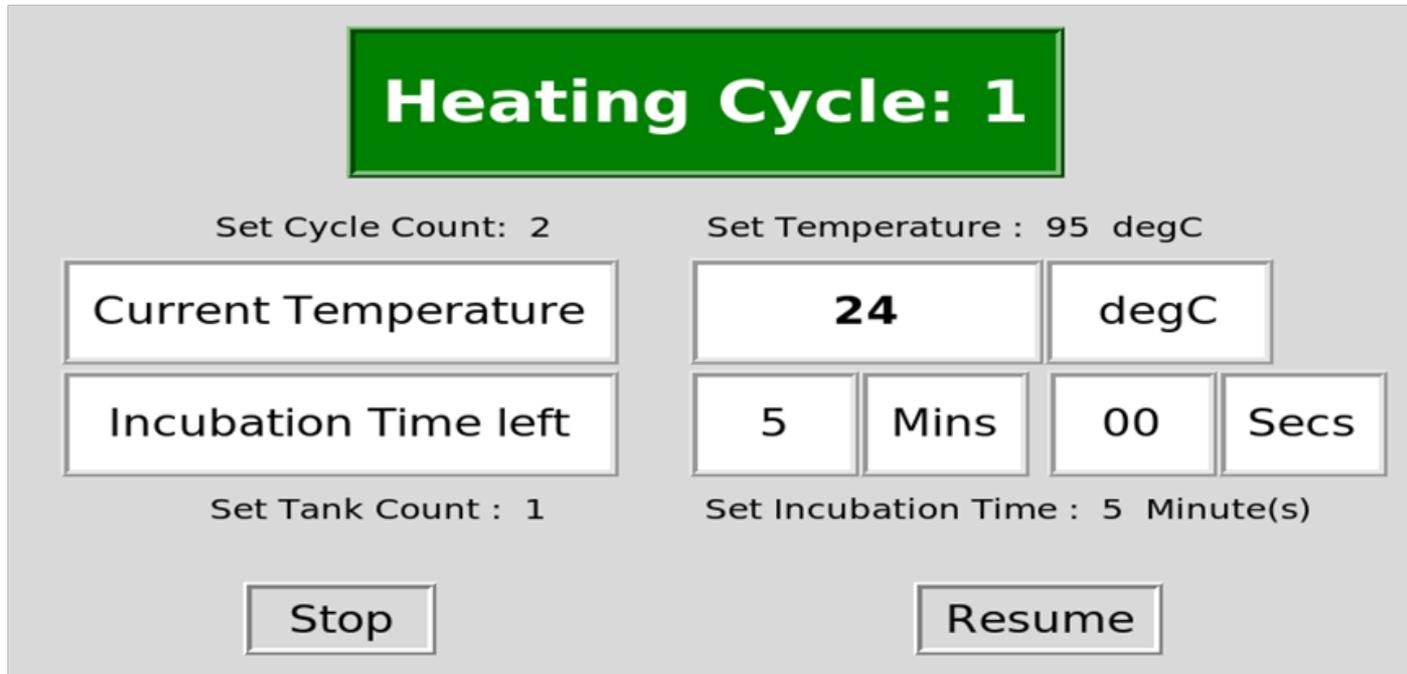
8.1 Start the run by pressing 'Yes'. The user can go back to the previous screen by selecting the 'No' button.



8.2 After clicking on run it takes a few seconds to process the necessary settings. Do not interrupt while the process is running.



9. 'Heating cycle 1' starts to execute. The user should place only the selected number of tanks mentioned in the run configuration. Then the heat cycles start to execute successively one after the other depending upon the number of cycles selected by the user in the run configuration.



Heating Cycle: 1

Set Cycle Count: 2

Set Temperature : 95 degC

Current Temperature

24 degC

Incubation Time left

5 Mins 00 Secs

Set Tank Count : 1

Set Incubation Time : 5 Minute(s)

Stop Resume

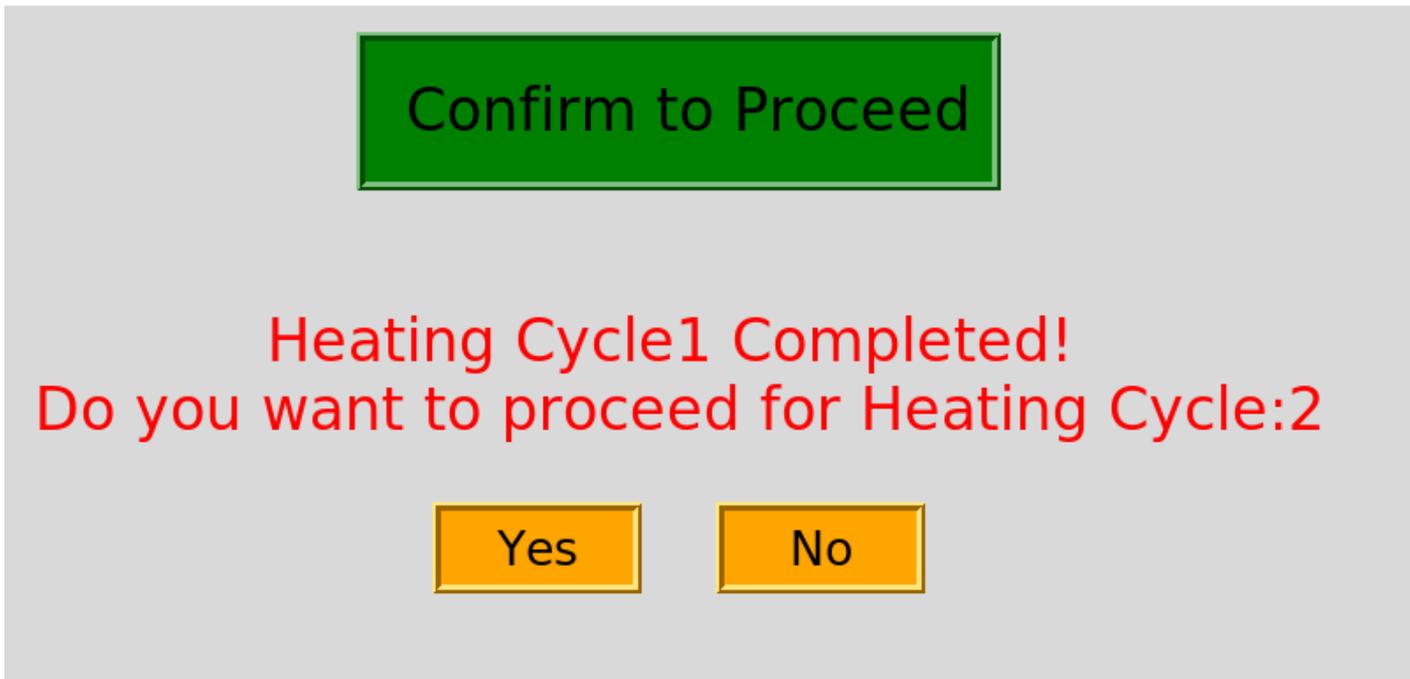
The image shows a control panel for 'Heating Cycle: 1'. At the top, a green box contains the text 'Heating Cycle: 1'. Below this, there are two columns of information. The left column shows 'Set Cycle Count: 2', a box for 'Current Temperature', and a box for 'Incubation Time left'. The right column shows 'Set Temperature : 95 degC', a box with '24' and 'degC', and a box with '5 Mins' and '00 Secs'. Below these are 'Set Tank Count : 1' and 'Set Incubation Time : 5 Minute(s)'. At the bottom, there are two buttons: 'Stop' and 'Resume'.

Note: Make sure that the door is closed properly. If not application throws an error message note, stating to close the door.
Once door closes, application will navigate to Run progress window where user need to click on “resume” to start the heating cycle.

Error Note

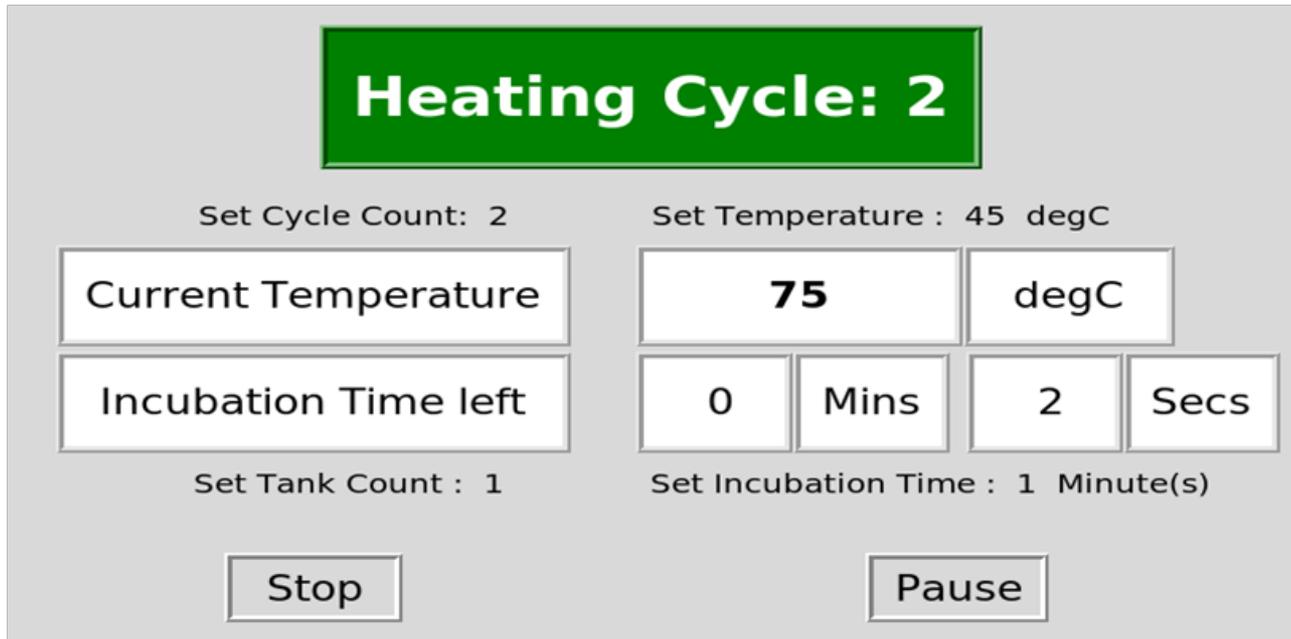
**Please Close the Door
and
Click on Resume to Start the Run
(or)
Click on Stop to halt the Run**

10. After the completion of Heating cycle 1, a 'Confirm to proceed' message is displayed with alarming buzzer sound. Now, open the door and check the buffer level and change the solution if required and close the door. Then select 'Yes' to proceed for Heating cycle 2.



11. Heating cycle 2 will be executed.

In this way, successive heating cycles will run one after the other based on the number of cycles selected by the user in the run configuration.



The image shows a control panel for a heating cycle. At the top, a green box with white text reads "Heating Cycle: 2". Below this, the panel is divided into two columns. The left column has a label "Set Cycle Count: 2" above a "Current Temperature" display showing "75" and an "Incubation Time left" display showing "0 Mins 2 Secs". The right column has a label "Set Temperature : 45 degC" above a "degC" display showing "75" and a "Set Incubation Time : 1 Minute(s)" label above a "0 Mins 2 Secs" display. At the bottom, there are two buttons: "Stop" on the left and "Pause" on the right.

Heating Cycle: 2			
Set Cycle Count: 2		Set Temperature : 45 degC	
Current Temperature	75	degC	
Incubation Time left	0	Mins	2 Secs
Set Tank Count : 1	Set Incubation Time : 1 Minute(s)		
Stop	Pause		

12. When the time has elapsed for the programmed heating cycles, the touch panel displays a 'Run completed' screen with a message indicating that the run is completed successfully and alarms buzzer sound.

Run Completed

Heating Cycles Completed Successfully!

Please Click on Ok to turn off the Alarm

OK

Cleaning and Maintenance

Daily Cleaning and Maintenance

The EZ-Retriever® requires nominal cleaning to ensure consistent results, to eliminate potential contamination, and enhance the longevity of the instrument. The following procedure should be performed each day at the end of the final run.

Remove the microwave tanks, tank holder and turntable from the instrument.

Rinse them with tap water.

Allow the turntable to cool before cleaning.

Wipe the interior, exterior and door seals of the instrument with a soft damp cloth and mild soap if needed. DO NOT use abrasive cleaners, strong detergents, alcohol, ammonia or organic solvents to clean either the inside or outside of the instrument.

Dry the instrument with a clean soft cloth.

Inspect the door, door sealing surfaces and power cord for damage. Do not use a damaged instrument.

Monthly Cleaning and maintenance

Check for obstructions along the intake and discharge louvers located at the bottom and at the back of the instrument. Clean with a damp cloth to ensure proper airflow. Dry thoroughly.

Troubleshooting

<u>TROUBLE</u>	<u>CAUSE</u>	<u>SOLUTION</u>
Instrument cannot be started	Power cord may not be plugged in. No power to the Power Socket.	Plug the power cord into the appropriate grounded power source. Check the main fuse or circuit breaker.
Instrument cannot be started even though the power is available at Power Socket	Safety fuse may be blown out.	Authorized service personnel must replace the fuse.
The Display is blank or incorrect but power is on.	The controller may need to be reset.	Unplug instrument, wait 10 sec. and plug back in.
Program is running but temperature on display is incorrect	IR sensor sensing area might be covered. No liquid in the tank	Make sure IR sensor is not covered and cleaned, when the instrument is operational. Make sure a minimum of 280 ml. liquid is in all tanks when operating.
Instrument operates intermittently	Air vents may be blocked	Check air vents for blockage.
Instrument unable to start the heating cycle	USB connection might be lost	Ensure USB is connected to touch display.

Checking the Safety Fuses

The EZ-Retriever® System V4.0 has 1-safety fuse that cannot be changed by the operator.

20 Amp fuse protects the microwave heating system. Contact BioGenex Technical Support for repairs.

Limitations of Liability

Services:

BioGenex would provide Limited warranty for the products subject to the Customer's compliance with the terms.

The liability of BioGenex under this Warranty is limited, at BioGenex's option, solely to repair the Product (parts, labor, and shipping charges included), or to send a refurbished replacement Product for the product returned to BioGenex, once the Customer has

- (1) Notified BioGenex that the Product, to the best of their belief, contains defects in materials or workmanship, and
- (2) Obtained a Return Material Authorization ("RMA") number from BioGenex.

BioGenex has the option to ship a replacement product that is refurbished with the specifications that are equivalent to that of the Product received from the Customer. Upon receipt of the Product at the authorized repair depot as specified by BioGenex in the RMA, BioGenex, or its Service Provider, will use commercially reasonable efforts to repair or replace the defective Product within a reasonable period of time.

Replacement of parts will be provided on an exchange (refurbished) or new part basis, at BioGenex's option. Replaced parts become BioGenex's property.

Customer's Obligations

Customer must notify BioGenex of any product defects promptly, and request a RMA number from BioGenex before returning the Product. All returned Products must be sent to BioGenex. When requesting Services, Customer must provide the Product Serial Number.

EXCLUSIONS

BioGenex shall have no obligations to provide Services for the Product that

- (a) Has been altered, damaged or modified;
- (b) Has been used in a manner not specified in the applicable Operator's manual;
- (c) Has been damaged by accessories, attachments or other similar devices;
- (d) Has been damaged as a result of accident, natural disaster or other force majeure;
- (e) Has been damaged by negligence, misuse, misapplication, or other causes beyond the reasonable control of BioGenex; or
- (f) Has been serviced, or attempted to be serviced, by anyone other than BioGenex or its authorized agents.

SERVICE CHARGES

BioGenex may charge to the customer its standard service rates for services, or may decline to provide the services required to correct a malfunction caused by customer's failure to fulfill its responsibilities hereunder, the failure of anyone other than BioGenex or its service contractor to comply with its written instructions or recommendations, the combination of the System(s) with an incompatible third party product, the alteration or improper storage, handling, use or maintenance of any part of the System(s) by anyone other than BioGenex or its service contractor, any factor external to the System(s) or beyond BioGenex reasonable control.

NO ADDITIONAL WARRANTY

The Services provided here under are provided “AS IS” and are without warranty of any kind. Without limiting the foregoing, BioGenex disclaims all express and implied warranties, including the implied warranties of title, merchantability, non-infringement and fitness for a particular purpose. The foregoing disclaimer does not modify any warranties provided in the End User Agreement.

TECHNICAL SERVICE

If you have any questions after reading this manual or for any technical assistance, please contact our Technical Support team.

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