

# Certificate Of Analysis



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## Sample Identification

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**Sample Name** Sterile Water Solution **Batch Number** 2023159 **Date Published** 2025-09-13 10:11

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## Results for LIQ-0009

<b>Analysis of Peptide Identity, Content and Purity</b>	<b>Result</b>	<b>Unit</b>	<b>Uncertainty</b>	<b>Reporting Limit</b>
pH determination	6.90		[± 0.1]	5.5 - 7

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<b>Bioburden</b>	<b>Result</b>	<b>Unit</b>	<b>Uncertainty</b>	<b>Reporting Limit</b>
Total Aerobic Microbial Count USP <61> Plate Count Method	Not detected	CFU/g		<= 100
Total Yeast and Mold Count USP <61> Plate Count Method	Not detected	CFU/g		<= 10

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<b>Endotoxin Analysis</b>	<b>Result</b>	<b>Unit</b>	<b>Uncertainty</b>	<b>Reporting Limit</b>
Bacterial Endotoxin USP<85> Bacterial Endotoxin Chromgenic Test	Not detected	EU/mg		<= 0.25

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# Attachments for LIQ-0009

	<b>Method Specification</b>	
<b>Determination of bioburden of lyophilized samples</b>		
<i>Document number</i> MIC_001_2025	<i>Superseded document</i> -	<i>Number of pages</i> 2

## 1. Instrumentation and chemicals

### 1.1. Instruments used

- Sterile Syringe 2mL Luer
- Sterile needles
- Ready made PCA Plate ROTI Aquatest
- Ready made Sab4 Plate ROTI Aquatest

### 1.2. Chemicals

Sterile physiological solution (0.9% NaCl)

## 2. Sample preparation and inoculation

### 2.1 Sample preparation

1. Fresh sterile needle and syringe was used for measuring exactly 2 mL of sterile physiological solution.
2. Needle was changed and by new needle rubber top of peptide container was penetrated and 2 mL of sterile physiological solution was dispensed.
3. Content of container was completely dissolved and left for 5 minutes to settle potentially created bubbles.
4. This procedure is repeated for two vials.

### 2.2 Total Aerobic microbial count inoculation and cultivation

1. By sterile needle 1 mL of solution was filled into the sterile syringe.
2. Needle was placed above the flame for few seconds to sterilize.
3. Consequently 1 mL of solution was poured into the ready to use sterile petri dish filled with PCA agar and petri dish was closed.
4. Proces was repeated for two petri dishes.
5. With sterile needle, 1 mL of sterile physiological solution was filled into the sterile needle and was inoculated onto one sterile petri dish filled with PCA agar as negative control sample.
6. Samples and negative control sample were placed in incubator at temperature 37°C for 120h.

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Attachment for LIQ-0009  
Filename: Bioburden-images-0.jpg

### 2.3 Total Yeast and Mold count inoculation and cultivation

1. By sterile needle 1 mL of solution was filled into the sterile syringe.
2. Needle was placed above the flame for few seconds to sterilize.
3. Consequently 1 mL of solution was poured into the ready to use sterile petri dish filled with Sab4 agar and petri dish was closed.
4. Proces was repeated for two petri dishes.
5. With sterile needle, 1 mL of sterile physiological solution was filled into the sterile needle and was inoculated onto one sterile petri dish filled with Sab4 agar as negative control sample.
6. Samples and negative control sample were placed in incubator at temperature 25°C for 72h.

## 3. Evaluation of results

After incubation time, colonies are counted as cfu (colonies forming units) and result per 1g of sample is determined as:

$$CFU_{avg} = \frac{\sum CFU_n}{n}$$

$CFU_{avg}$  = average CFU counted from  $n$  inoculations

$CFU_n$  = CFU counted per inoculation

$n$  = number of inoculations


$$CFU \text{ per gram} = \frac{CFU_{avg}}{m_s} * DF$$

$CFU_{avg}$  = Average CFU counted from  $n$  inoculations

$m_s$  = mass of sample (mg)

$DF$  = Dilution factor

If negative control sample is evaluated as positive, process have to be repeated due to possible contamination in the process of inoculation or incubation.

	<b>Method Specification</b>	
<b>Determination of bacterial endotoxin content of lyophilized samples</b>		
<i>Document number</i> ENDOTOX_002_2025	<i>Superseded document</i> ENDOTOX_001_2025	<i>Number of pages</i> 2

## 1. Chromgenic LAL Assay Determination of Bacterial Endotoxin content of sample

### 1.1. Instrumentation

- Pipette set 1-1000 µL
- Thermostatically controlled water bath
- UV VIS spectrometer ( Shimadzu UV-1601)
- GenScript ToxinSensor Chromgenic LAL Endotoxin Assay kit

### 1.2. Chemicals

- LAL Reagent water (endotoxin free)
- Limulus Amoebocyte Lysate
- LAL Substrate
- Color Stabilizer #1
- Color Stabilizer #2
- Color Stabilizer #3
- 35% HCl (p.a.)

### 1.3. Sample preparation

1. Sample container was weighed prior to dissolution and measured weight was marked.
2. Sample was completely dissolved in its container by 2 mL of LAL Reagent water.
3. 100 µL of the sample was aliquoted for analysis.
4. After analysis container was emptied and dried.
5. Dry mass of container was measured and exact weight of dissolved content was determined as:

$$m_{dc} = m_{sample} - m_{container}$$

### 1.4. Toxin sensor Chromgenic LAL Endotoxin Assay kit preparation

Procedures regarding preparation of reaction solutions possible to find in:

[https://www.genscript.com/site2/document/5292\\_20080806231827.PDF](https://www.genscript.com/site2/document/5292_20080806231827.PDF)

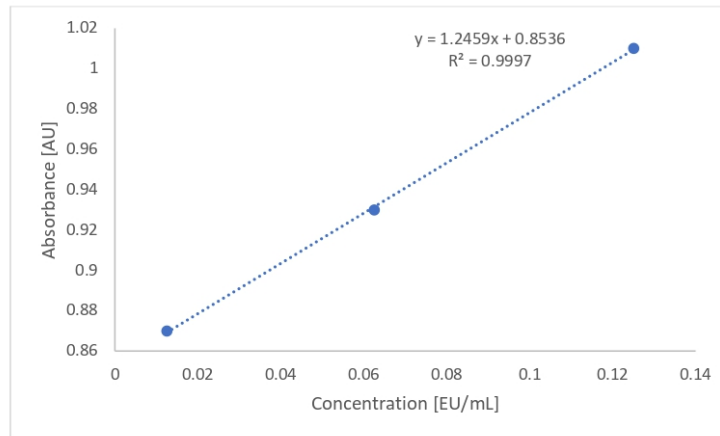
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Attachment for LIQ-0009  
Filename: Endotoxin\_072025\_1\_page-0001.jpg

1.5. Measurement procedure

	Standards	Samples	Blank
Standards (mL)	0.1	-	-
Samples (mL)	-	0.1	-
LAL Reagent Water (mL)	-	-	0.1
LAL Solution (mL)	0.1	0.1	0.1
Mix well and incubate at 37°C for 27 min			
Substrate solution (mL)	0.1	0.1	0.1
Mix well and incubate at 37°C for 6 min			
Color Stabilizer #1 solution	0.5	0.5	0.5
Color Stabilizer #2 solution	0.5	0.5	0.5
Color Stabilizer #3 solution	0.5	0.5	0.5
Mix well and read the absorbance at 545nm			

1.6. Calibration curve



1.7. Calculation of endotoxin content

Endotoxin content of the sample was calculated from the calibration curve as:

$$Endotox[EU/mg] = \frac{\left(\frac{ABS_{sample}}{S_{calib}}\right) * 20}{m_{sample}}$$

$ABS_{sample}$  = Measured absorbance of sample

$S_{calib}$  = Slope of calibration curve

$m_{sample}$  = real measured mass of sample

20 = dilution factor of measured sample



**Mr. Ján Galbavý**  
Founder/Manager

Analysis results relate only to the samples tested.

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