Certificate of Analysis

LIQUILABS
Analytical services

Grail Formula B.V.
Grail Formula B.V.
Hingenderstraat 39
6111 AB Sint Joost
Netherlands
info@24peptides.com

Liquilabs s.r.o.
Inovační 122
252 41 Zlatníky-Hodkovice
Czechia
www.liquilabs.cz

Verify Results Online

Sample Identification

Sample Name	CJC-1295 5 mg + Ipamorelin 5 mg
Batch Number	GF-CJCIPA5/5-B242
Date Published	2026-09-10 08:18

Results for LYO-0667

Peptides	Result	Unit	Uncertainty	Acceptable Range
Ipamorelin Assay Peptide Screening 0.1% TFA	5.77	*mg*	[± 0.03]	
MOD GRF (1-29) Assay Peptide Screening 0.1% TFA	4.95	*mg*	[± 0.02]	
Ipamorelin Purity Peptide Screening 0.1% TFA	> 99.8	*%*		
MOD GRF (1-29) Purity Peptide Screening 0.1% TFA	> 99.8	*%*		
Ipamorelin Identification by Spectrum (FTIR) Peptide Screening 0.1% TFA	975		[± 5]	
MOD GRF (1-29) Identification by Spectrum (FTIR) Peptide Screening 0.1% TFA	988		[± 5]	
Ipamorelin Identification by RT Peptide Screening 0.1% TFA	0.999		[± 0.005]	
MOD GRF (1-29) Identification by RT Peptide Screening 0.1% TFA	0.999		[± 0.005]	

Microbiology	Result	Unit	Uncertainty	Acceptable Range
Total Aerobic Microbial Count USP <61>/Eur. Ph. 2.6.12. Plate Count Method	0	*CFU/g*	[±]	0 - 1000
Total Yeast and Mold Count USP <61>/Eur. Ph. 2.6.12. Plate Count Method	0	*CFU/g*	[±]	0 - 100
Bacterial Endotoxin Chromgenic USP<85>/ Eur. Ph. 2.6.14. Bacterial Endotoxin Chromgenic Test	0.006	*EU/mg*	[± 0]	0 - 0.5

Elemental Impurities	Result	Unit	Uncertainty	Acceptable Range
Arsenic Elemental Impurities screening USP ⟨232⟩ / Ph. Eur. 5.20 / 2.4.20	< 0.001	*ppm*		0 - 1.5
Cadmium Elemental Impurities screening USP ⟨232⟩ / Ph. Eur. 5.20 / 2.4.20	< 0.001	*ppm*		0 - 0.5
Quicksilver Elemental Impurities screening USP ⟨232⟩ / Ph. Eur. 5.20 / 2.4.20	< 0.001	*ppm*		0 - 1.5
Lead Elemental Impurities screening USP ⟨232⟩ / Ph. Eur. 5.20 / 2.4.20	< 0.001	*ppm*		0 - 1.5
Nickel Elemental Impurities screening USP ⟨232⟩ / Ph. Eur. 5.20 / 2.4.20	< 0.001	*ppm*		0 - 25
Vanadium Elemental Impurities screening USP ⟨232⟩ / Ph. Eur. 5.20 / 2.4.20	< 0.001	*ppm*		0 - 25
Cobalt Elemental Impurities screening USP ⟨232⟩ / Ph. Eur. 5.20 / 2.4.20	< 0.001	*ppm*		0 - 25

Mass Spectrometry	Result	Unit	Uncertainty	Acceptable Range
Molecular Ion Mass Identification (Ipamorelin) Mass Spectrometry Identity	< 1	*Da*		
Molecular Ion Mass Identification (MOD GRF 1-29) Mass Spectrometry Identity	3367	*Da*	[± 1]	
Molecular Ion Mass Identification (MS Deconvolution) Mass Spectrometry Identity	711	*Da*	[± 1]	

Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

LIQUILABS Analytical services	Method Specification	
Determination of identity, content and purity of Ipamorelin		
Document number IPA_008_2026	*Superseded document* -	*Number of pages* 4

1. Content Assesment

1.1. Instrumentation

Module	Name	Serial Number
System Controller	Shimadzu CBM-40 Lite	L221226351398
Degassing Unit	Shimadzu DGU-403	NA
Pump	Shimadzu LC-40B XR	L22146350580
Autosampler	Shimadzu SIL-40C XR	L22216351622
Colum Thermostat	Shimadzu CTO-40S	L22236351602
PDA Detector	Shimadzu SPD-M40	L22276352808
SQ MS Detector	Shimadzu LCMS-2050	O12476200760

1.2. Chromatographic conditions

Chromatographic conditions	
Eluent A	0.1% DFA in Water (HPLC, Gradient Grade)
Eluent B	0.1% DFAin Acetonitrile (HPLC, Gradient Grade)
Flow rate	0.8 mL/min
Program	Gradient elution
Injection volume	2 µL
Colum Temperature	60°C
Column	Waters XSelect CSH C18, 100x2.1mm 2.5µm
Detection wavelength	280nm

Gradient Program		
Time [min]	A [%]	B [%]
1	98	2
13.99	35	65
14	5	95
15	5	95
15.01	98	2
19	end	

1

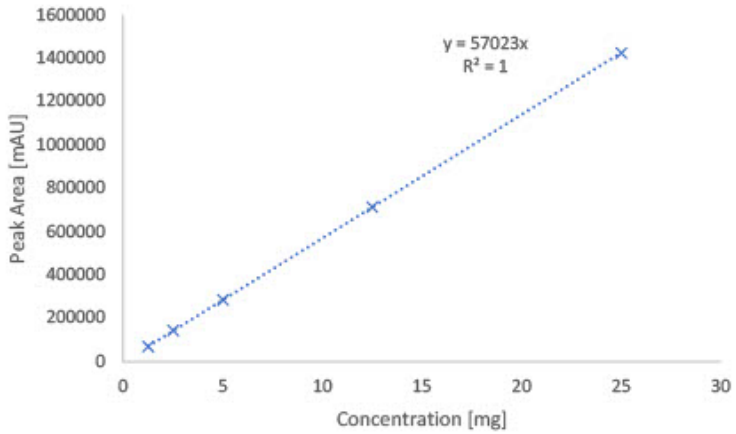
Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

1.3. Sample preparation

Whole amount of container was dissolved in 2mL of water (LCMS Grade). 100 µL of sample was transferred to HPLC vial and diluted by 900 µL water (LCMS Grade) and submitted for analysis.

1.4. Calibration curve

Calibration curve detail	
Quantitative method	External Standard
Calibration Type	Linear
Number of calibration points	5
Force through Zero	Enabled
Weighting Method	None



2

Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

2. Purity assessment

2.1 Instrumentation

Module	Name	Serial Number
System Controller	Shimadzu CBM-40 Lite	L221226351398
Degassing Unit	Shimadzu DGU-403	NA
Pump	Shimadzu LC-40B XR	L22146350580
Autosampler	Shimadzu SIL-40C XR	L22216351622
Colum Thermostat	Shimadzu CTO-40S	L22236351602
PDA Detector	Shimadzu SPD-M40	L22276352808
SQ MS Detector	Shimadzu LCMS-2050	O12476200760

2.2 Chromatographic conditions

Chromatographic conditions	
Eluent A	0.1% DFA in Water (HPLC, Gradient Grade)
Eluent B	0.1% DFAin Acetonitrile (HPLC, Gradient Grade)
Flow rate	0.8 mL/min
Program	Gradient elution
Injection volume	2 µL
Colum Temperature	60°C
Column	Waters XSelect CSH C18, 100x2.1mm 2.5µm
Detection wavelength	225nm

Gradient Program		
Time [min]	A [%]	B [%]
1	98	2
13.99	35	65
14	5	95
15	5	95
15.01	98	2
19	end	

2.3 Purity assesment

Purity of compound assesed by area normalization method, comparing area of each peak to sum of area of all peaks detected at wavelenght of 225 nm.

Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

3. Identity Assessment

3.1 Instrumentation

Module	Name	Serial Number
System Controller	Shimadzu CBM-40 Lite	L221226351398
Degassing Unit	Shimadzu DGU-403	NA
Pump	Shimadzu LC-40B XR	L22146350580
Autosampler	Shimadzu SIL-40C XR	L22216351622
Colum Thermostat	Shimadzu CTO-40S	L22236351602
PDA Detector	Shimadzu SPD-M40	L22276352808
SQ MS Detector	Shimadzu LCMS-2050	O12476200760

3.2 Chromatographic conditions

Chromatographic conditions	
Eluent A	0.1% DFA in Water (HPLC, Gradient Grade)
Eluent B	0.1% DFAin Acetonitrile (HPLC, Gradient Grade)
Flow rate	0.8 mL/min
Program	Gradient elution
Injection volume	2 µL
Colum Temperature	60ºC
Column	Waters XSelect CSH C18, 100x2.1mm 2.5µm
Detection	MS 220-2000 Da

Gradient Program		
Time [min]	A [%]	B [%]
1	98	2
13.99	35	65
14	5	95
15	5	95
15.01	98	2
19	end	

3.3 Molecular Ion Mass evaluation

Molecular ion mass was determined by deconvolution of multiply charged ESI-MS spectra to calculate the average neutral (zero-charge) molecular mass by equation:

$$M(neutral) = (z_i((mz_i) - H)) - ME$$

Where:
mz_i - Measured mass of charged particle
z_i - charge
H - proton mass (1.0076 Da)
ME – mass error

Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

LIQUILABS Analytical services	Method Specification	
Determination of identity, content and purity of MOD GRF 1-29		
Document number MOD_008_2026	*Superseded document* -	*Number of pages* 4

1. Content Assesment

1.1. Instrumentation

Module	Name	Serial Number
System Controller	Shimadzu CBM-40 Lite	L221226351398
Degassing Unit	Shimadzu DGU-403	NA
Pump	Shimadzu LC-40B XR	L22146350580
Autosampler	Shimadzu SIL-40C XR	L22216351622
Colum Thermostat	Shimadzu CTO-40S	L22236351602
PDA Detector	Shimadzu SPD-M40	L22276352808
SQ MS Detector	Shimadzu LCMS-2050	O12476200760

1.2. Chromatographic conditions

Chromatographic conditions	
Eluent A	0.1% DFA in Water (HPLC, Gradient Grade)
Eluent B	0.1% DFAin Acetonitrile (HPLC, Gradient Grade)
Flow rate	0.8 mL/min
Program	Gradient elution
Injection volume	2 µL
Colum Temperature	60°C
Column	Waters XSelect CSH C18, 100x2.1mm 2.5µm
Detection wavelength	225nm

Gradient Program		
Time [min]	A [%]	B [%]
1	98	2
13.99	35	65
14	5	95
15	5	95
15.01	98	2
19	end	

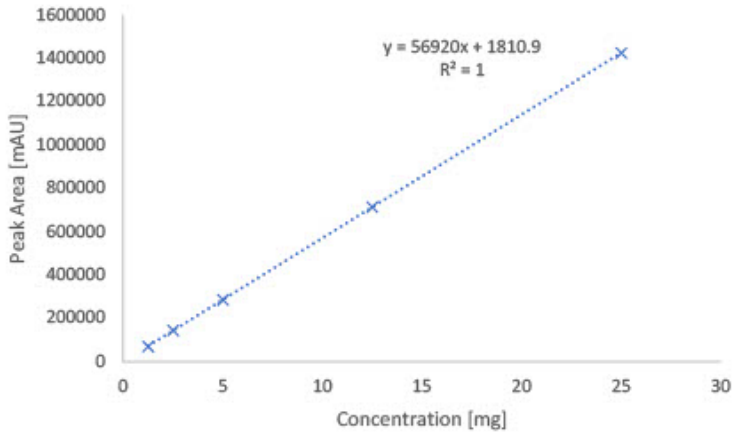
Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

1.3. Sample preparation

Whole amount of container was dissolved in 2mL of water (LCMS Grade). 100 µL of sample was transferred to HPLC vial and diluted by 900 µL water (LCMS Grade) and submitted for analysis.

1.4. Calibration curve

Calibration curve detail	
Quantitative method	External Standard
Calibration Type	Linear
Number of calibration points	5
Force through Zero	Enabled
Weighting Method	None



2

Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

2. Purity assessment

2.1 Instrumentation

Module	Name	Serial Number
System Controller	Shimadzu CBM-40 Lite	L221226351398
Degassing Unit	Shimadzu DGU-403	NA
Pump	Shimadzu LC-40B XR	L22146350580
Autosampler	Shimadzu SIL-40C XR	L22216351622
Colum Thermostat	Shimadzu CTO-40S	L22236351602
PDA Detector	Shimadzu SPD-M40	L22276352808
SQ MS Detector	Shimadzu LCMS-2050	O12476200760

2.2 Chromatographic conditions

Chromatographic conditions	
Eluent A	0.1% DFA in Water (HPLC, Gradient Grade)
Eluent B	0.1% DFAin Acetonitrile (HPLC, Gradient Grade)
Flow rate	0.8 mL/min
Program	Gradient elution
Injection volume	2 µL
Colum Temperature	60°C
Column	Waters XSelect CSH C18, 100x2.1mm 2.5µm
Detection wavelength	225nm

Gradient Program		
Time [min]	A [%]	B [%]
1	98	2
13.99	35	65
14	5	95
15	5	95
15.01	98	2
19	end	

2.3 Purity assesment

Purity of compound assesed by area normalization method, comparing area of each peak to sum of area of all peaks detected at wavelenght of 225 nm.

3

Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

3. Identity Assessment

3.1 Instrumentation

Module	Name	Serial Number
System Controller	Shimadzu CBM-40 Lite	L221226351398
Degassing Unit	Shimadzu DGU-403	NA
Pump	Shimadzu LC-40B XR	L22146350580
Autosampler	Shimadzu SIL-40C XR	L22216351622
Colum Thermostat	Shimadzu CTO-40S	L22236351602
PDA Detector	Shimadzu SPD-M40	L22276352808
SQ MS Detector	Shimadzu LCMS-2050	O12476200760

3.2 Chromatographic conditions

Chromatographic conditions	
Eluent A	0.1% DFA in Water (HPLC, Gradient Grade)
Eluent B	0.1% DFAin Acetonitrile (HPLC, Gradient Grade)
Flow rate	0.8 mL/min
Program	Gradient elution
Injection volume	2 µL
Colum Temperature	60ºC
Column	Waters XSelect CSH C18, 100x2.1mm 2.5µm
Detection	MS 220-2000 Da

Gradient Program		
Time [min]	A [%]	B [%]
1	98	2
13.99	35	65
14	5	95
15	5	95
15.01	98	2
19	end	

3.3 Molecular Ion Mass evaluation

Molecular ion mass was determined by deconvolution of multiply charged ESI-MS spectra to calculate the average neutral (zero-charge) molecular mass by equation:

$$M(neutral) = (z_i((mz_i) - H)) - ME$$

Where:
mz_i - Measured mass of charged particle
z_i - charge
H - proton mass (1.0076 Da)
ME – mass error

Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

Analysis Report

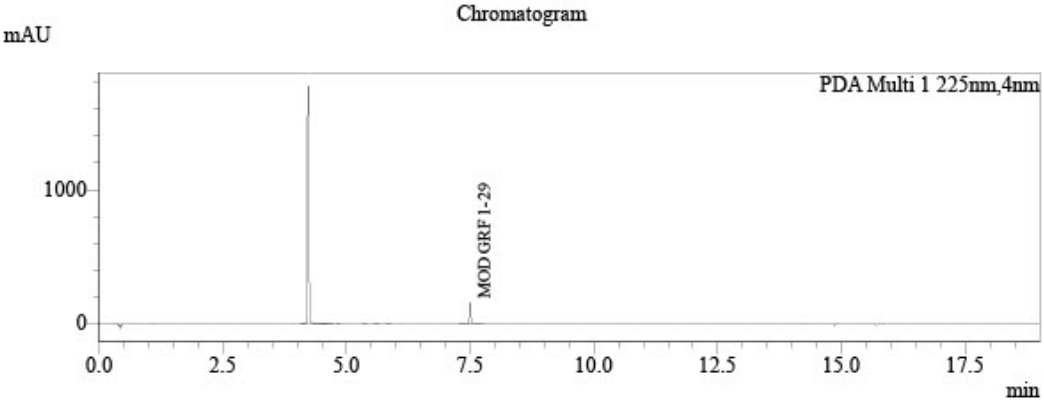
LIQUILABS Analytical services

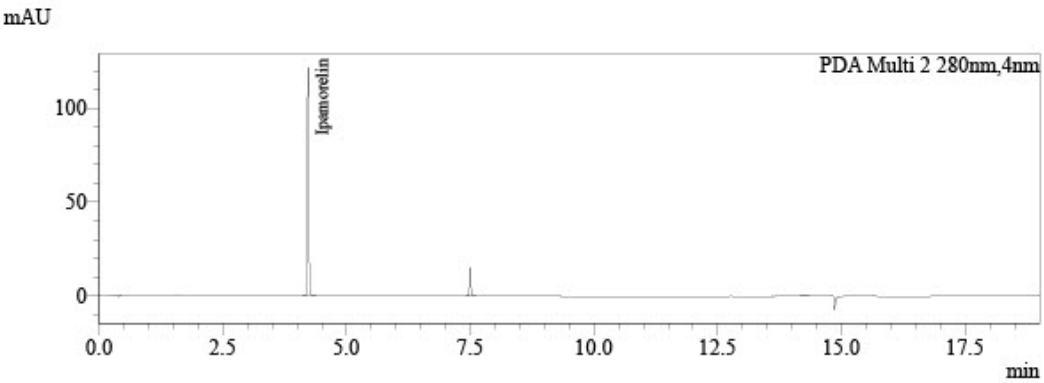
Analysis of quantity of active ingredient by UHPLC with MS detection

Sample Information

Injection Volume	: 2
Data File	: LYO-0667__010.lcd
Method File	: Peptide Screening_DFA_Group B.lcm
Date Acquired	: 8/25/2026 3:27:11 PM

Chromatogram





Peak Table

PDA Ch1 225nm

Peak#	Name	Ret. Time	Area	Area%	Conc.	Unit
1		4.132	225	0.006	0.000	
2		4.222	3579654	92.555	0.000	
3		4.397	185	0.005	0.000	
4		4.488	847	0.022	0.000	
5		4.571	157	0.004	0.000	
6		4.702	336	0.009	0.000	
7		4.840	324	0.008	0.000	
8		5.374	1548	0.040	0.000	
9		5.601	372	0.010	0.000	
10		5.867	317	0.008	0.000	
11	MOD GRF 1-29	7.495	283615	7.333	4.951	mg
Total			3867581	100.000		

Peak Table

PDA Ch2 280nm

Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

Peak#	Name	Ret. Time	Area	Area%	Conc.	Unit
1	Ipamorelin	4.221	230098	88.889	5.769	mg
2		7.495	27322	10.555	0.000	
3		14.232	1439	0.556	0.000	
Total			258859	100.000		

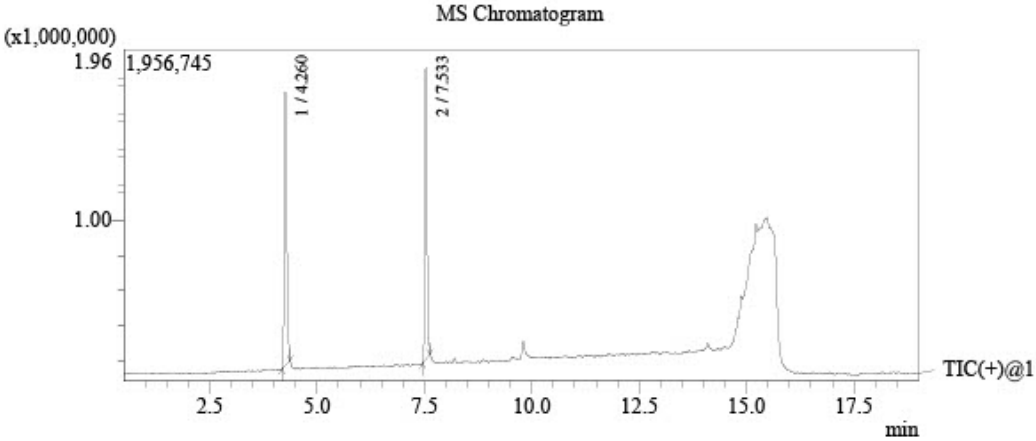
Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

Analysis Report

LIQUILABS Analytical services

Identification of active ingredient by UHPLC Mass Spectrometr

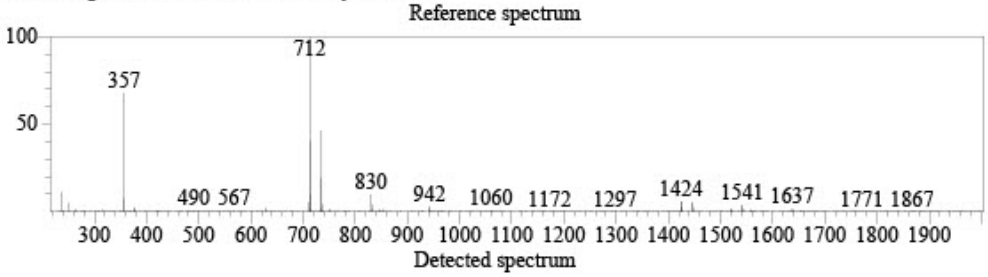
MS Chromatogram



Library Search

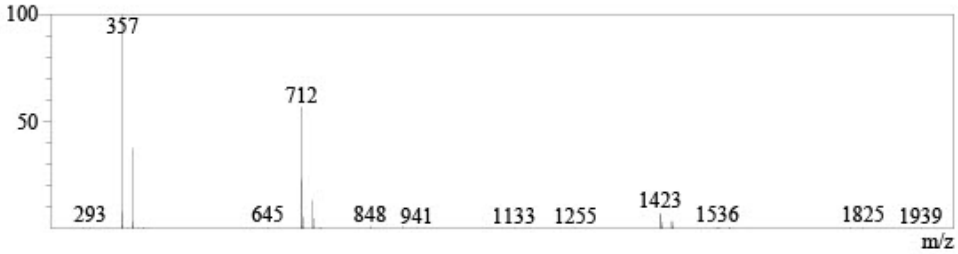
Base Peak: 712(368275)
Scan Range: 220.00 - 2000.00 Porality: Positive

Reference spectrum



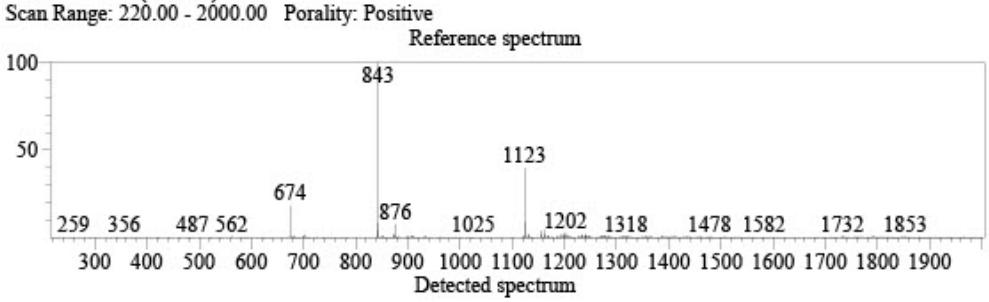
Detected spectrum

Library: Peptide screening.lib
Formula: C38H49N9O5 CAS: 170851-70-4 Mol.Weight: 711(0!=)
Compound Name: Ipamorelin

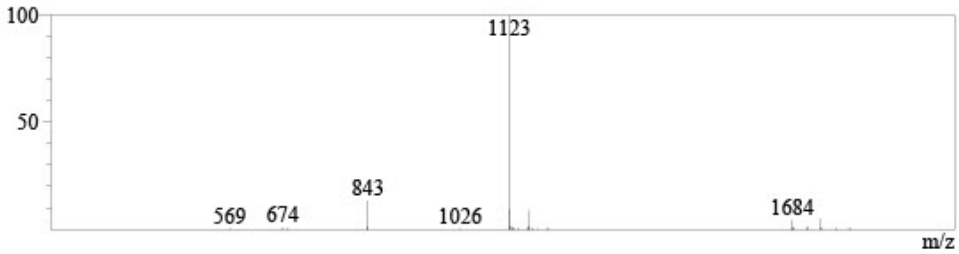


Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

Base Peak: 843(563896)
Scan Range: 220.00 - 2000.00 Porality: Positive



Library: Peptide screening.lib
Formula: C152H252N44O42 CAS: 863288-34-0 Mol.Weight: 3367(0!=)
Compound Name: MOD GRF (1-29) (CJC-1295)

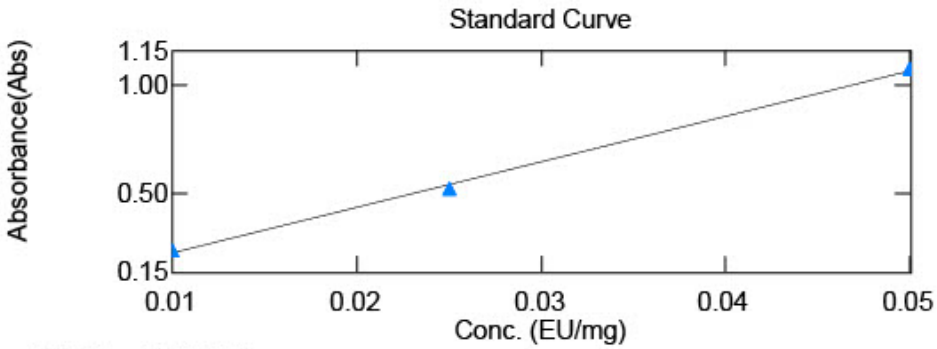


Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

Endotoxin Determination Report

File Information
Filename: C:\UVVis-Data\Data\File_260825_112353.vqud
Date/Time: 08/25/2026 12:17:16 PM

Instrument Information
Instrument Type: UV-1900 Series
Model (S/N): UV-1900i (A12536253123)



y = 20.7814 x + 0.0235192
r2 = 0.99830

	Sample Name	Conc	Raw_WL545.0	Dilution Rate
1	LYO-0660	0.367	0.4049	20.00
2	LYO-0661	0.125	0.1530	20.00
3	LYO-0662	0.084	0.1111	20.00
4	LYO-0663	2.058	1.0927	40.00
5	LYO-0664	0.196	0.2275	20.00
6	LYO-0666	0.101	0.1284	20.00
7	LYO-0667	0.068	0.0942	20.00
8	LYO-0668	0.080	0.1066	20.00
9	LYO-0669	1.030	0.5587	40.00
10	LYO-0672	0.113	0.1411	20.00
11	LYO-0671	0.311	0.1529	50.00
12	LYO-0672	2.514	0.5459	100.00
13	LYO-0673	0.066	0.0925	20.00
14	LYO-0674	2.276	0.6147	80.00
15	LYO-0675	0.074	0.1001	20.00
16	LYO-0676	0.059	0.0845	20.00
17	LYO-0677	0.136	0.1649	20.00
18	LYO-0678	3.182	0.8502	80.00

Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

LIQUILABS Analytical services	Method Specification	
Determination of bioburden of lyophilized samples		
Document number MIC_001_2025	*Superseded document* -	*Number of pages* 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 innoculation

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 containter 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 innoculation 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 sterilze.
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 innoculated 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.

Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

2.3 Total Yeast and Mold count innoculation 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 sterilze.
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 innoculated 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:

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

$$CFU_{avg} = average\ CFU\ counted\ form\ n\ innoculations$$
$$CFU_n = CFU\ counted\ per\ innoculation$$
$$n = number\ of\ innoculations$$

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

$$CFU_{avg} = Average\ CFU\ counted\ from\ n\ innoculations$$
$$m_s = mass\ of\ sample\ (mg)$$
$$DF = Dilution\ factor$$

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

2

Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz

Responsibles

Mr. Ján Galbavý
CEO

Analysis results relate only to the samples tested.
This document shall not be reproduced except in full, without the written approval of Liquilabs s.r.o.

Liquilabs s.r.o. • Inovační 122 • 252 41 Zlatníky-Hodkovice • Czechia
Phone : +420 608 444 727 • Fax : • jan.galbavy@liquilabs.cz • www.liquilabs.cz