Certificate of Analysis

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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

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Sample Identification

Sample Name	Ilumineuro blend 48 mg
Batch Number	GF-ILLU48-B243
Date Published	2026-11-10 14:47

Results for LYO-1251

Peptides	Result	Unit	Uncertainty	Acceptable Range
N-Acetyl Selank Assay Peptide Screening 0.1% TFA	6.63	*mg*	[± 0.03]	
N-Acetyl Semax Assay Peptide Screening 0.1% TFA	21.2	*mg*	[± 0.1]	
PE-22-28 Assay Peptide Screening 0.1% TFA	10.36	*mg*	[± 0.05]	
Pinealon Assay Peptide Screening 0.1% TFA	15.41	*mg*	[± 0.08]	
N-Acetyl Selank Purity Peptide Screening 0.1% TFA	> 99.8	*%*		
N-Acetyl Semax Purity Peptide Screening 0.1% TFA	98.8	*%*	[± 0.5]	
PE-22-28 Purity Peptide Screening 0.1% TFA	> 99.8	*%*		
Pinealon Purity Peptide Screening 0.1% TFA	> 99.8	*%*		
N-Acetyl Selank Identification by Spectrum Peptide Screening 0.1% TFA	953		[± 5]	
N-Acetyl Semax Identification by Spectrum Peptide Screening 0.1% TFA	955		[± 5]	
PE-22-28 Identification by Spectrum Peptide Screening 0.1% TFA	957		[± 5]	
Pinealon Identification by Spectrum (FTIR) Peptide Screening 0.1% TFA	994		[± 5]	
N-Acetyl Selank Identification by RT Peptide Screening 0.1% TFA	0.993		[± 0.005]	
N-Acetyl Semax Identification by RT Peptide Screening 0.1% TFA	0.990		[± 0.005]	
PE-22-28 Identification by RT Peptide Screening 0.1% TFA	0.990		[± 0.005]	
Pinealon Identification by RT Peptide Screening 0.1% TFA	0.990		[± 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	0.002	*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

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Elemental Impurities	Result	Unit	Uncertainty	Acceptable Range
Cobalt Elemental Impurities screening USP ⟨232⟩ / Ph. Eur. 5.20 / 2.4.20	< 0.001	*ppm*		0 - 25

Counter Ion Analysis	Result	Unit	Uncertainty	Acceptable Range
Acetate Counter Ion Analysis	30.96	*ppm*	[± 0.62]	
Bromide Counter Ion Analysis	0.42	*ppm*	[± 0.01]	
Chloride Counter Ion Analysis	1.44	*ppm*	[± 0.03]	
Fluoride Counter Ion Analysis	0.00	*ppm*	[±]	
Nitrate Counter Ion Analysis	0.12	*ppm*	[± 0]	
Phosphate Counter Ion Analysis	0.00	*ppm*	[±]	
Sulphate Counter Ion Analysis	0.00	*ppm*	[±]	
TFA Counter Ion Analysis	0.79	*ppm*	[± 0.02]	

Excipients	Result	Unit	Uncertainty	Acceptable Range
Mannitol	132.14	*mg*	[± 2.64]	

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LIQUILABS Analytical services	Method Specification	
Determination of identity, content and purity of N-Acetyl Selank		
Document number NACSEL_010_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% DFA in Acetonitrile (HPLC, Gradient Grade)
Flow rate	0.4 mL/min
Program	Gradient elution
Injection volume	1 µL
Colum Temperature	60°C
Column	Waters ACQUITY CSH C18, 100x2.1mm 1.7µm
Detection wavelength	225nm

Gradient Program		
Time [min]	A [%]	B [%]
2	98	2
10	35	65
10.01	5	95
11	5	95
11.01	98	2
15	end	

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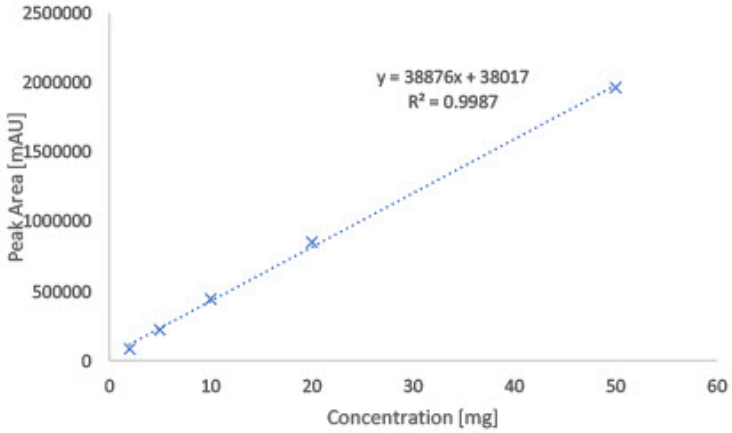
1.3. Sample preparation

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



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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% DFA in Acetonitrile (HPLC, Gradient Grade)
Flow rate	0.4 mL/min
Program	Gradient elution
Injection volume	1 µL
Colum Temperature	60°C
Column	Waters ACQUITY CSH C18, 100x2.1mm 1.7µm
Detection wavelength	225nm

Gradient Program		
Time [min]	A [%]	B [%]
2	98	2
10	35	65
10.01	5	95
11	5	95
11.01	98	2
15	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.

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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% DFA in Acetonitrile (HPLC, Gradient Grade)
Flow rate	0.4 mL/min
Program	Gradient elution
Injection volume	1 µL
Colum Temperature	60°C
Column	Waters ACQUITY CSH C18, 100x2.1mm 1.7µm
Detection	MS 220-2000 Da

Gradient Program		
Time [min]	A [%]	B [%]
2	98	2
10	35	65
10.01	5	95
11	5	95
11.01	98	2
15	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:

$$M(neutral) = (z_t((mz_t) - H)) - ME$$

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

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LIQUILABS Analytical services	Method Specification	
Determination of identity, content and purity of N-Acetyl Semax		
Document number NACESEM_010_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% DFA in Acetonitrile (HPLC, Gradient Grade)
Flow rate	0.4 mL/min
Program	Gradient elution
Injection volume	1 µL
Colum Temperature	60°C
Column	Waters ACQUITY CSH C18, 100x2.1mm 1.7µm
Detection wavelength	280nm

Gradient Program		
Time [min]	A [%]	B [%]
2	98	2
10	35	65
10.01	5	95
11	5	95
11.01	98	2
15	end	

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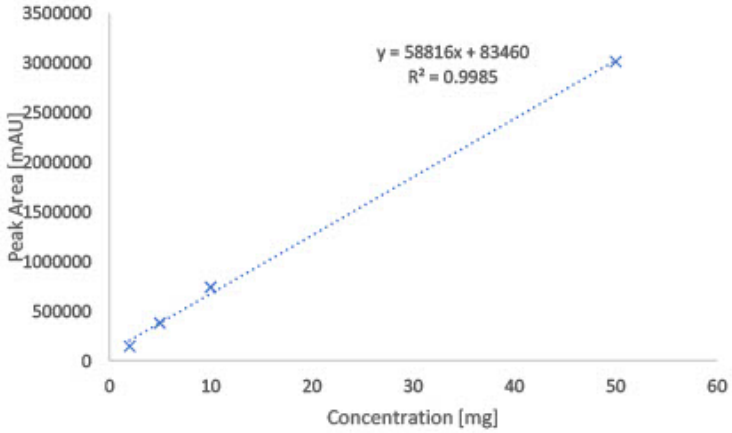
1.3. Sample preparation

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



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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	0.4 mL/min
Program	Gradient elution
Injection volume	1 µL
Colum Temperature	60°C
Column	Waters ACQUITY CSH C18, 100x2.1mm 1.7µm
Detection wavelength	225nm

Gradient Program		
Time [min]	A [%]	B [%]
2	98	2
10	35	65
10.01	5	95
11	5	95
11.01	98	2
15	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.

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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% DFA in Acetonitrile (HPLC, Gradient Grade)
Flow rate	0.4 mL/min
Program	Gradient elution
Injection volume	1 µL
Colum Temperature	60°C
Column	Waters ACQUITY CSH C18, 100x2.1mm 1.7µm
Detection	MS 220-2000 Da

Gradient Program		
Time [min]	A [%]	B [%]
2	98	2
10	35	65
10.01	5	95
11	5	95
11.01	98	2
15	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:

$$M(neutral) = (z_t((mz_t) - H)) - ME$$

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

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LIQUILABS Analytical services	Method Specification	
Determination of identity, content and purity of PE-22-28		
Document number PE2228_010_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% DFA in Acetonitrile (HPLC, Gradient Grade)
Flow rate	0.4 mL/min
Program	Gradient elution
Injection volume	1 µL
Colum Temperature	60°C
Column	Waters ACQUITY CSH C18, 100x2.1mm 1.7µm
Detection wavelength	280nm

Gradient Program		
Time [min]	A [%]	B [%]
2	98	2
10	35	65
10.01	5	95
11	5	95
11.01	98	2
15	end	

1

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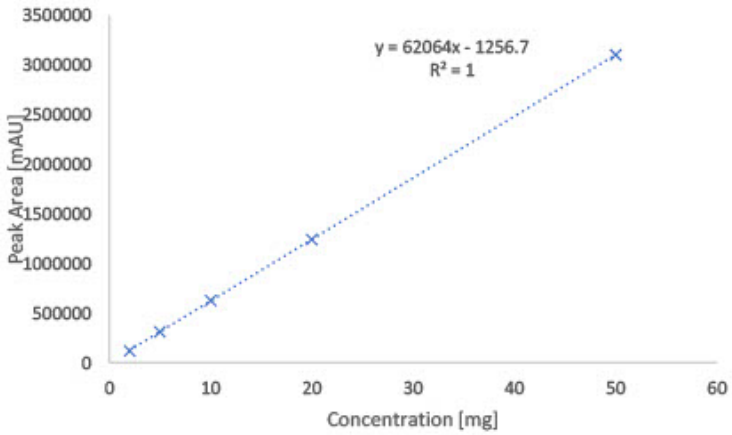
1.3. Sample preparation

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



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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	0.4 mL/min
Program	Gradient elution
Injection volume	1 µL
Colum Temperature	60°C
Column	Waters ACQUITY CSH C18, 100x2.1mm 1.7µm
Detection wavelength	225nm

Gradient Program		
Time [min]	A [%]	B [%]
2	98	2
10	35	65
10.01	5	95
11	5	95
11.01	98	2
15	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.

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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% DFA in Acetonitrile (HPLC, Gradient Grade)
Flow rate	0.4 mL/min
Program	Gradient elution
Injection volume	1 µL
Colum Temperature	60°C
Column	Waters ACQUITY CSH C18, 100x2.1mm 1.7µm
Mass spectrometry	MS 220-2000 Da

Gradient Program		
Time [min]	A [%]	B [%]
2	98	2
10	35	65
10.01	5	95
11	5	95
11.01	98	2
15	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:

$$M(neutral) = (z_t((mz_t) - H)) - ME$$

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

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LIQUILABS Analytical services	Method Specification	
Determination of identity, content and purity of Pinealon		
Document number PINE_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	10 mM Ammonium Formate in ACN (HPLC, Gradient Grade)
Eluent B	10 mM Ammonium Formate in Water (HPLC, Gradient Grade)
Flow rate	0.6 mL/min
Program	Gradient elution
Injection volume	2 µL
Colum Temperature	40°C
Column	Merck SeQuant ZIC-HILIC 150x2.1mm 3.5µm
Detection wavelength	225nm

Gradient Program		
Time [min]	A [%]	B [%]
2	100	0
18	5	95
20	5	95
22	100	0
30	end	

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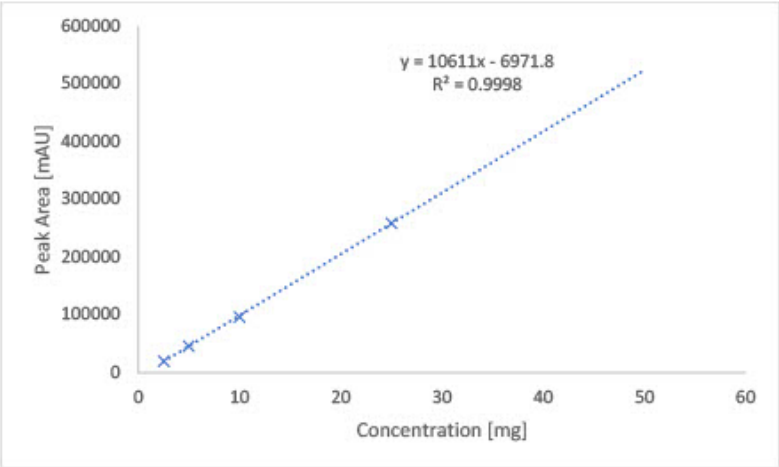
1.3. Sample preparation

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	4
Force through Zero	Disabled
Weighting Method	None



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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	10 mM Ammonium Formate in ACN (HPLC, Gradient Grade)
Eluent B	10 mM Ammonium Formate in Water (HPLC, Gradient Grade)
Flow rate	0.6 mL/min
Program	Gradient elution
Injection volume	2 µL
Colum Temperature	40°C
Column	Merck SeQuant ZIC-HILIC 150x2.1mm 3.5µm
Detection wavelength	225nm

Gradient Program		
Time [min]	A [%]	B [%]
2	100	0
18	5	95
20	5	95
22	100	0
30	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.

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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	10 mM Ammonium Formate in ACN (HPLC, Gradient Grade)
Eluent B	10 mM Ammonium Formate in Water (HPLC, Gradient Grade)
Flow rate	0.6 mL/min
Program	Gradient elution
Injection volume	2 µL
Colum Temperature	40°C
Column	Merck SeQuant ZIC-HILIC 150x2.1mm 3.5µm
Detection w	MS 155-2000 Da

Gradient Program		
Time [min]	A [%]	B [%]
2	100	0
18	5	95
20	5	95
22	100	0
30	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

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Analysis Report

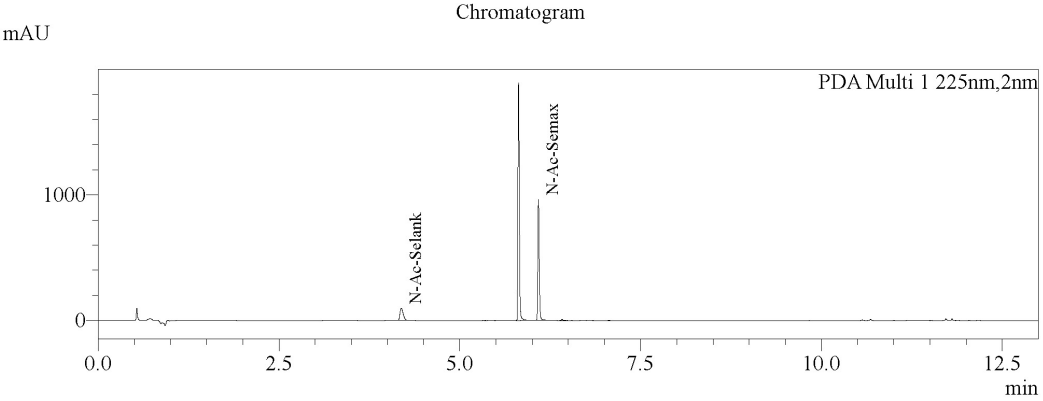
LIQUILABS Analytical services

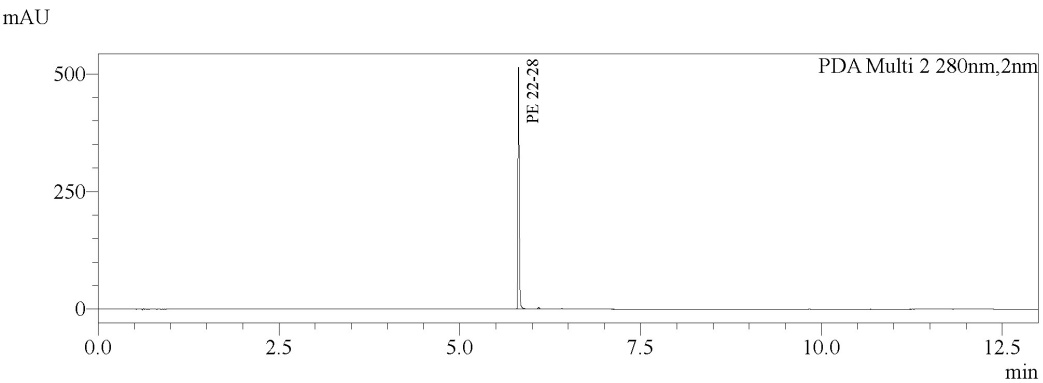
Analysis of quantity of active ingredient by UHPLC with MS detection

Sample Information

Injection Volume	: 1
Data File	: LYO-1251__021.lcd
Method File	: Peptide Screening_DFA_V2_C.lcm
Date Acquired	: 11/2/2026 10:44:58 PM

Chromatogram





Peak Table

PDA Ch1 225nm

Peak#	Name	Ret. Time	Area	Area%	Conc.	Unit
1	N-Ac-Selank	4.191	303085	7.235	6.631	mg
2		5.814	2515215	60.045	0.000	
3	N-Ac-Semax	6.089	1354738	32.341	21.190	mg
4		6.172	1176	0.028	0.000	
5		6.413	13539	0.323	0.000	
6		7.067	1146	0.027	0.000	
Total			4188899	100.000		

Peak Table

PDA Ch2 280nm

Peak#	Name	Ret. Time	Area	Area%	Conc.	Unit
1	PE 22-28	5.813	641939	100.000	10.363	mg
Total			641939	100.000		

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Analysis Report

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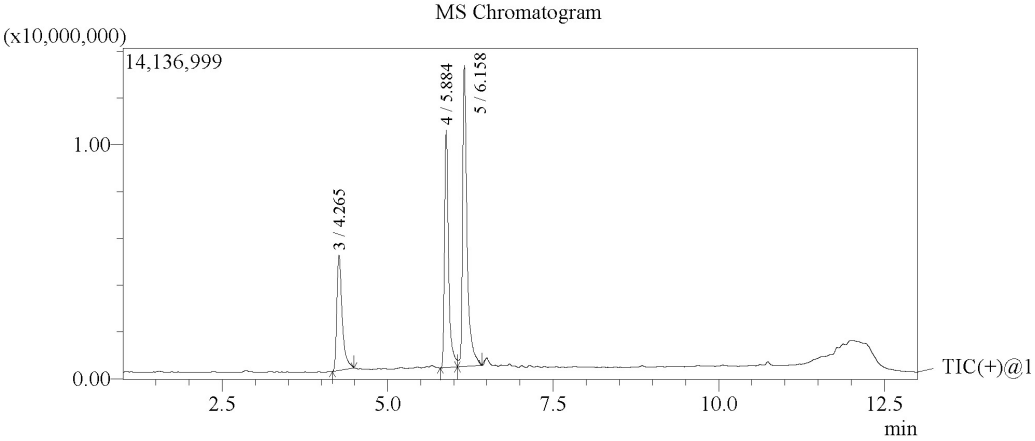
Identification of active ingredient by UHPLC Mass Spectrometr

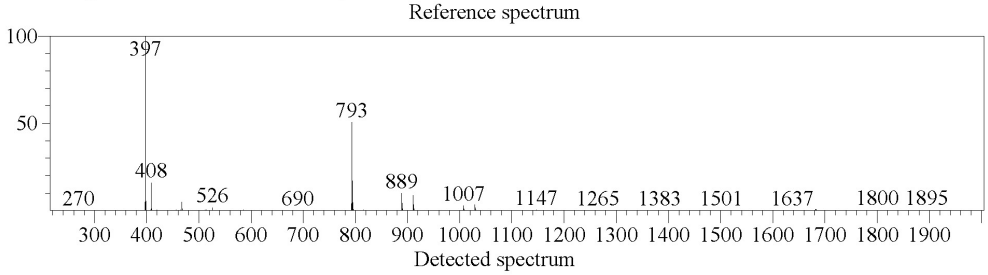
MS Chromatogram



Library Search

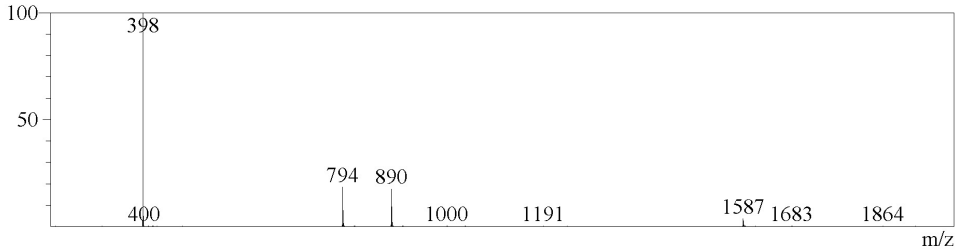
Base Peak: 397(2029346)
Scan Range: 220.00 - 2000.00 Porality: Positive

Reference spectrum



Detected spectrum

Library: Peptide Screening_DFA.lib
Formula: C35H59N11O10 CAS: 129954-34-3 Mol.Weight: 793(0!=)
Compound Name: N-Ac-Selank



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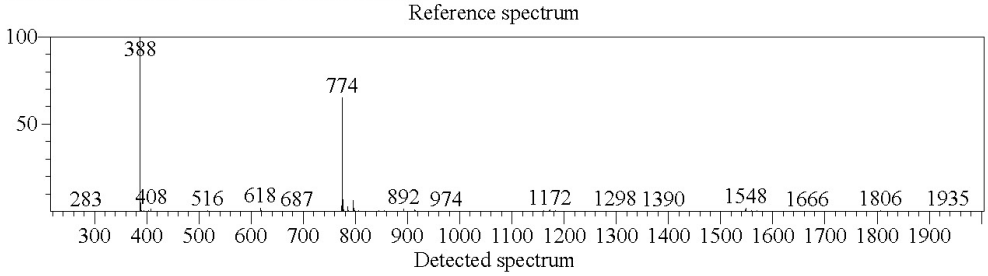
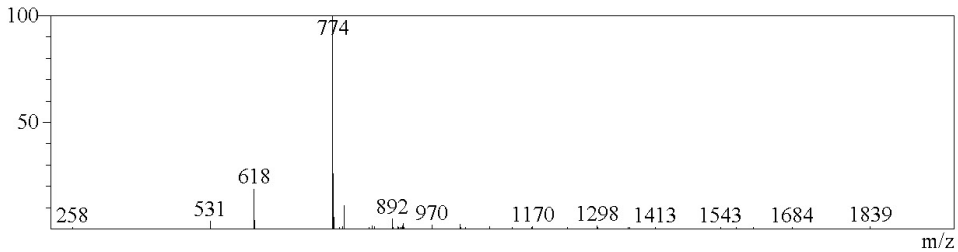
Base Peak: 388(4387124)
Scan Range: 220.00 - 2000.00 Porality: Positive

Reference spectrum



Detected spectrum

Library: Peptide Screening_DFA.lib
Formula: C35H55N11O9 CAS: 181959-12-5 Mol.Weight: 773(0!=)
Compound Name: PE 22-08



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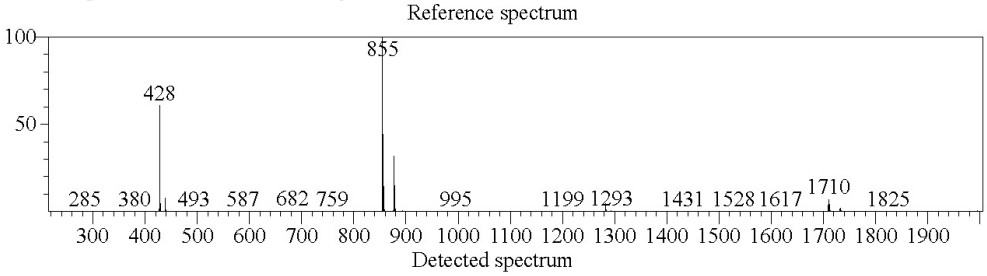
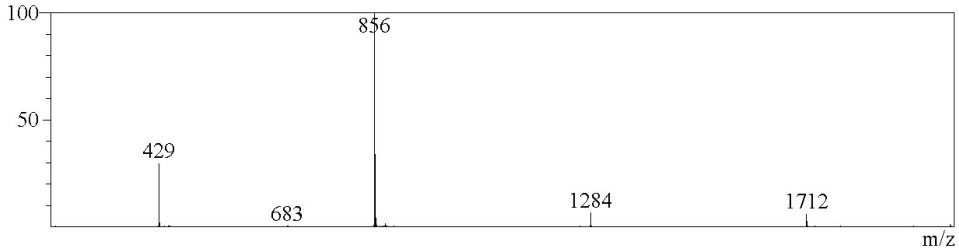
Base Peak: 855(4258346)
Scan Range: 220.00 - 2000.00 Porality: Positive

Reference spectrum



Detected spectrum

Library: Peptide Screening_DFA.lib
Formula: C39H54N10O10S CAS: 292938-90-3 Mol.Weight: 854(0!=)
Compound Name: N-Ac-Semax



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Analysis Report

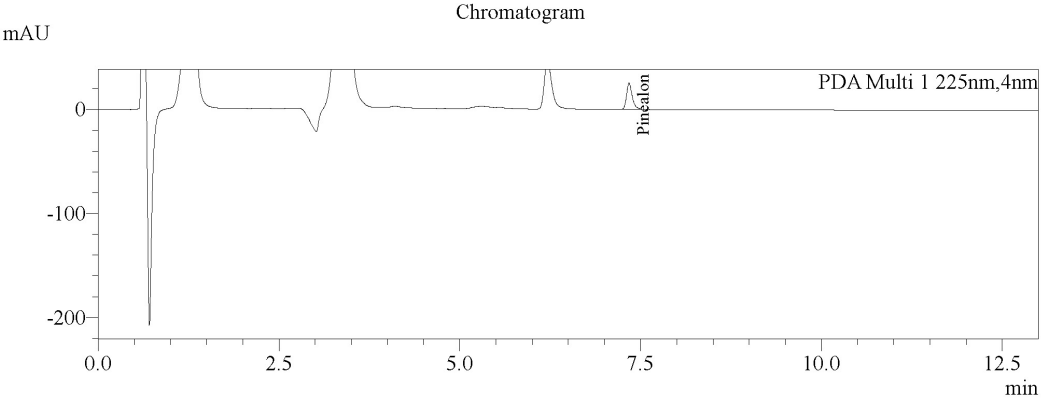
LIQUILABS Analytical services

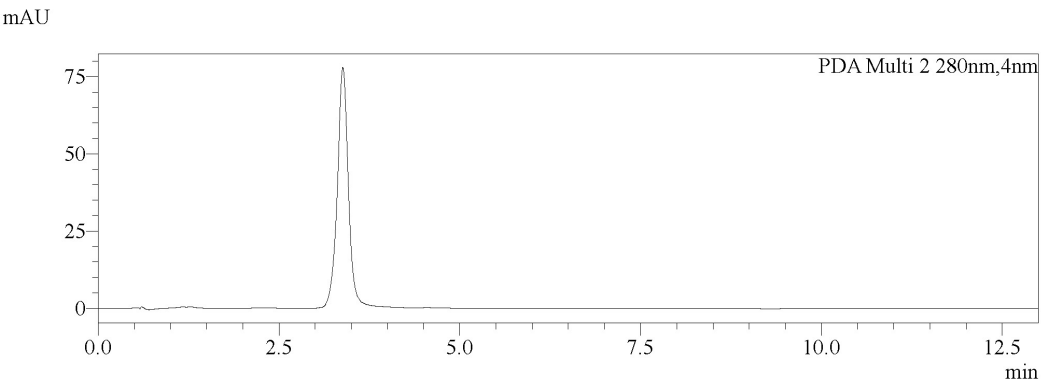
Analysis of quantity of active ingredient by UHPLC with MS detection

Sample Information

Injection Volume	: 2
Data File	: LYO-1251_polar__001.lcd
Method File	: Peptides HILIC_B.lcm
Date Acquired	: 11/2/2026 11:55:33 AM

Chromatogram





Peak Table

PDA Ch1 225nm

Peak#	Name	Ret. Time	Area	Area%	Conc.	Unit
1	Pinealon	7.340	139012	100.000	15.414	mg
Total			139012	100.000		

Peak Table

PDA Ch2 280nm

Peak#	Name	Ret. Time	Area	Area%	Conc.	Unit
Total						

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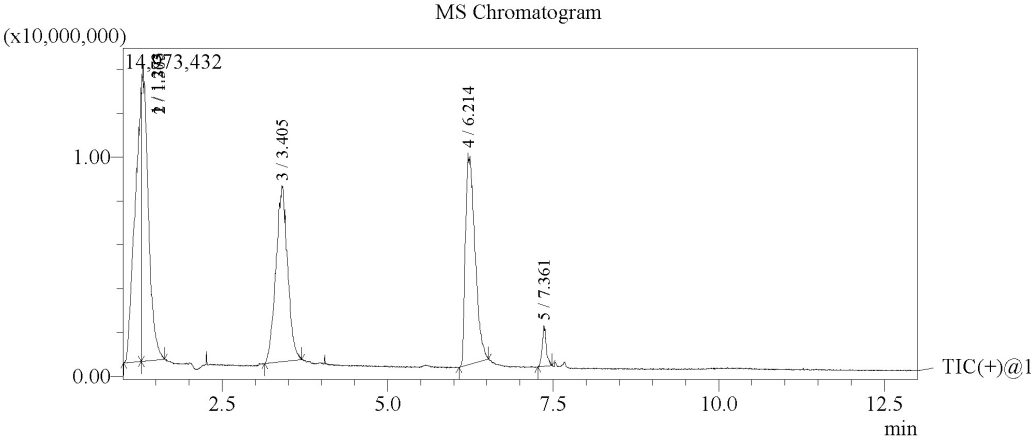
Analysis Report

LIQUILABS Analytical services

Identification of active ingredient by UHPLC Mass Spectrometr

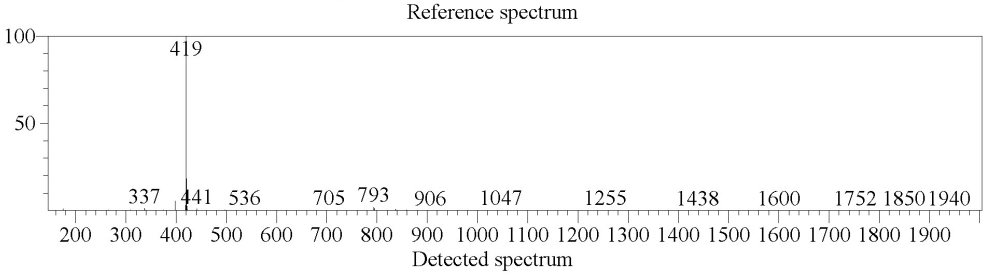
MS Chromatogram



Library Search

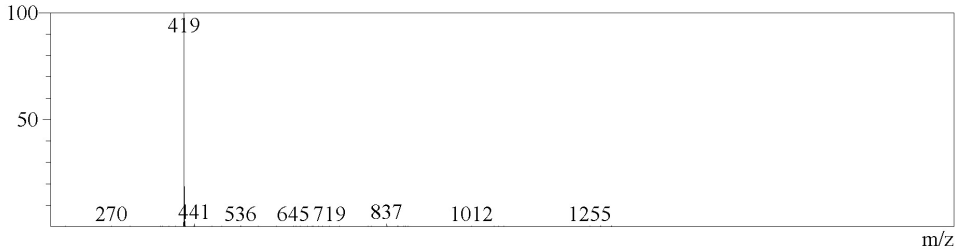
Base Peak: 419(421092)
Scan Range: 155.00 - 2000.00 Porality: Positive

Reference spectrum



Detected spectrum

Library: Peptide HILIC.lib
Formula: C15H26N6O8 CAS: 175175-23-2 Mol.Weight: 418(0!=)
Compound Name: Pinealon



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Analysis Report

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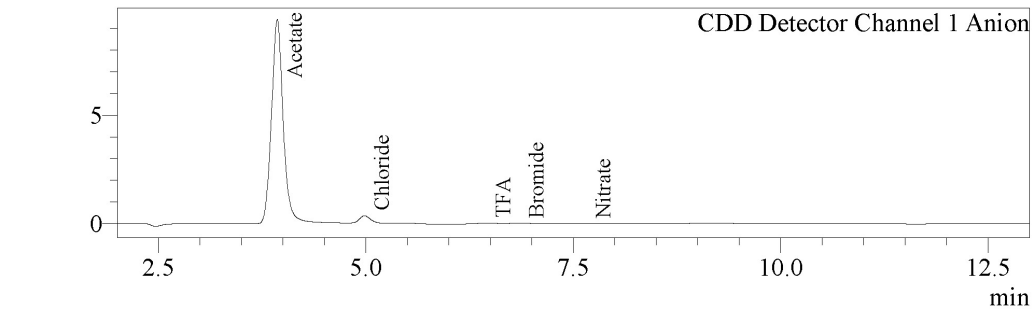
Analytical services

Determination of anions and cations in peptide sample

Sample Information

Injection Volume	: 10
Data File	: LYO-1251__009.lcd
Method File	: Anions+Cations.lcm
Date Acquired	: 11/3/2026 4:09:19 PM

Chromatogram



Peak Table

CDD Detector Channel 1 Anion

Name	Ret. Time	Area	Conc.	Unit
Acetate	3.930	93671	30.964	ppm
Chloride	4.980	3077	1.435	ppm
TFA	6.443	392	0.791	ppm
Bromide	6.843	335	0.417	ppm
Nitrate	7.650	76	0.115	ppm
		97552		

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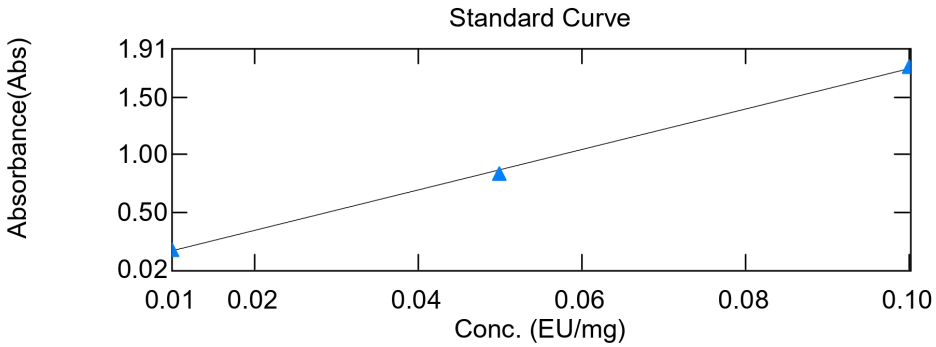
Endotoxin Determination Report

File Information
Filename: C:\UVVis-Data\Data\File_261102_102508.vqud
Date/Time: 11/02/2026 11:13:25 AM

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



y = 17.4393 x - 5.62824e-004
r2 = 0.99905

	Sample Name	Conc	Raw_WL545.0	Dilution Rate
1	LYO-1225	3.258	1.4198	40.00
2	LYO-1226	0.098	0.0845	20.00
3	LYO-1174	0.492	0.4285	20.00
4	LYO-1175	0.162	0.1403	20.00
5	LYO-1176	0.093	0.0806	20.00
6	LYO-1177	0.108	0.0934	20.00
7	LYO-1178	0.114	0.0987	20.00
8	LYO-1179	0.116	0.1004	20.00
9	LYO-1251	0.101	0.0876	20.00
10	LYO-1252	0.441	0.3839	20.00
11	LYO-1253	0.105	0.0907	20.00
12	LYO-1254	0.147	0.1279	20.00
13	LYO-1224	0.095	0.0823	20.00
14	RAW-0013	0.127	0.1098	20.00
15	RAW-0014	0.167	0.1452	20.00
16	LIQ-0101	0.004	0.0759	1.00
17	LIQ-0102	0.014	0.2467	1.00
18	LIQ-0103	0.009	0.1590	1.00
19	LIQ-0104	0.006	0.1026	1.00
20	LIQ-0105	0.006	0.1044	1.00

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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.

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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.

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Responsibles



Mr. Ján Galbavý
CEO

Analysis results relate only to the samples tested.
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