Certificate of Analysis

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Analytical services

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Liquilabs s.r.o.
Inovační 122
252 41 Zlatníky-Hodkovice
Czechia
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Verify Results Online

Sample Identification

Sample Name	KPV 10 mg
Batch Number	KPV102610
Date Published	2026-09-23 06:05

Results for LYO-0959

Peptides	Result	Unit	Uncertainty	Acceptable Range
KPV Assay Peptide Screening 0.1% TFA	10.12	*mg*	[± 0.05]	
KPV Purity Peptide Screening 0.1% TFA	> 99.8	*%*		
KPV Identification by Spectrum (FTIR) Peptide Screening 0.1% TFA	994		[± 5]	
KPV Identification by RT Peptide Screening 0.1% TFA	0.995		[± 0.005]	

Microbiology	Result	Unit	Uncertainty	Acceptable Range
Bacterial Endotoxin Chromgenic USP<85>/ Eur. Ph. 2.6.14. Bacterial Endotoxin Chromgenic Test	0.395	*EU/mg*	[± 0.008]	

Mass Spectrometry	Result	Unit	Uncertainty	Acceptable Range
Molecular Ion Mass Identification (MS Deconvolution) Mass Spectrometry Identity	342	*Da*	[± 1]	

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LIQUILABS Analytical services	Method Specification	
Determination of identity, content and purity of KPV		
Document number KPV_008_2026	*Superseded document* -	*Number of pages* 4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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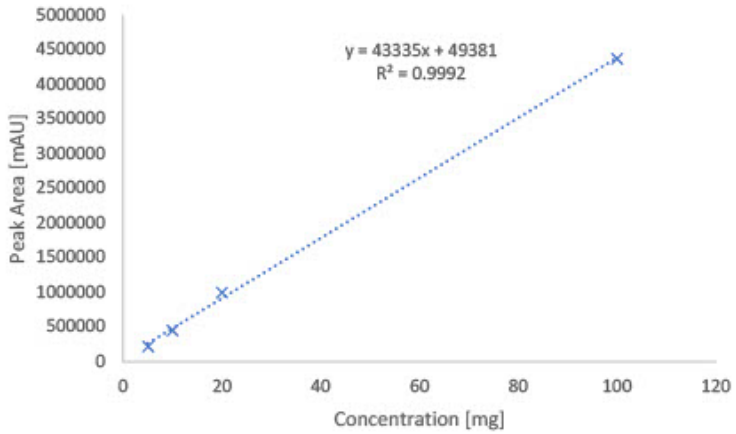
1.3. Sample preparation

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

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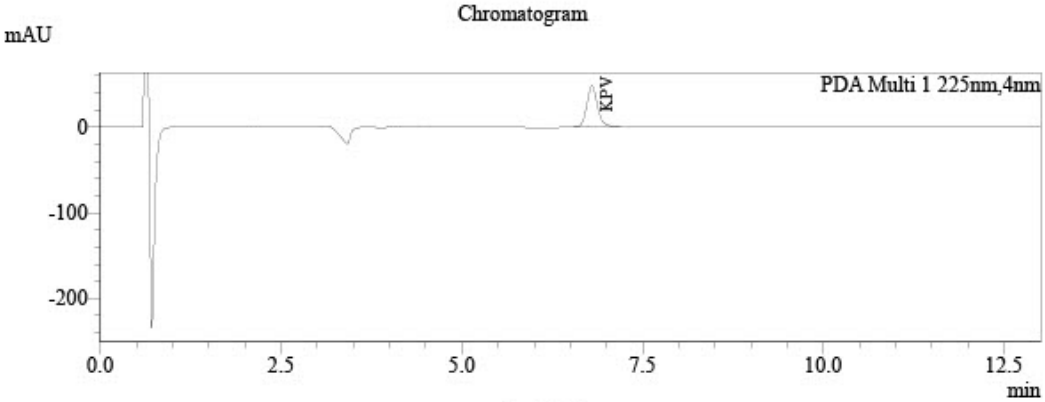
Analysis of quantity of active ingredient by UHPLC with MS detection

Sample Information

Injection Volume	: 2
Data File	: LYO-0959__005.lcd
Method File	: Peptides HILIC_A.lcm
Date Acquired	: 9/21/2026 3:40:53 PM

Chromatogram



Peak Table

PDA Ch1 225nm

Peak#	Name	Ret. Time	Area	Area%	Conc.	Unit
1	KPV	6.800	487985	100.000	10.121	mg/L
Total			487985	100.000		

Peak Table

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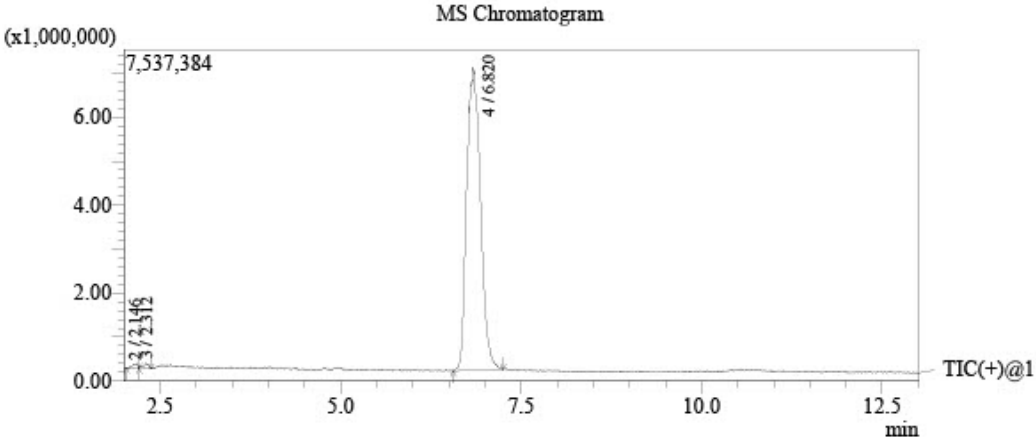
Analysis Report

LIQUILABS Analytical services

Identification of active ingredient by UHPLC Mass Spectrometr

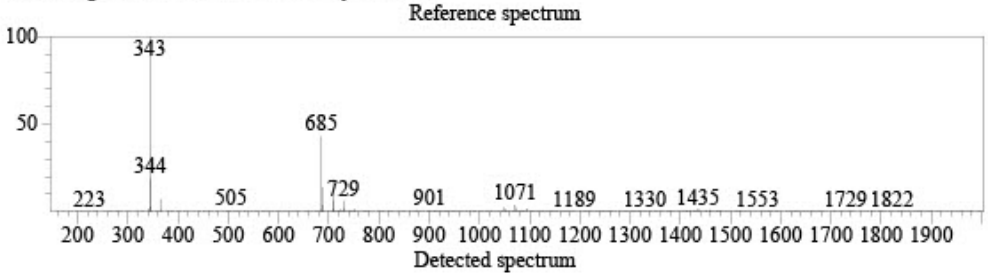
MS Chromatogram



Library Search

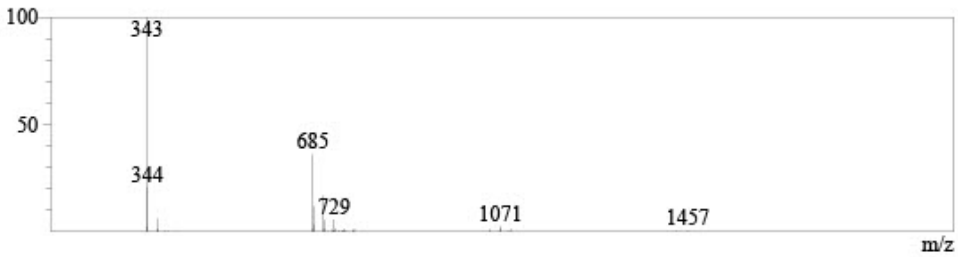
Base Peak: 343(770117)
Scan Range: 155.00 - 2000.00 Porality: Positive

Reference spectrum



Detected spectrum

Library: Peptide HILIC.lib
Formula: C16H30N4O4 CAS: 67727-97-3 Mol.Weight: 342(0!=)
Compound Name: KPV



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Responsibles



Mr. Ján Galbavý
CEO

Analysis results relate only to the samples tested.
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