

ANALYTICAL CERTIFICATE

Page 1/8

Sample name	Tesamorelin
Batch No.	2024203
Sample No.	01
Sequence	Trans-3-Hexenoyl-Tyr-Ala-Asp-Ala-Ile-Phe-Thr-Asn-Ser-Tyr-Arg-Lys-Val-Leu-Gly-Gln-Leu-Ser-Ala-Arg-Lys-Leu-Leu-Gln-Asp-Ile-Met-Ser-Arg-Gln-Gln-Gly-Glu-Ser-Asn-Gln-Glu-Arg-Gly-Ala-Arg-Ala-Arg-Leu-NH ₂
Manufacturing date	NA
Submitter of analytical request	Particle s.r.o., Slovakia

1. Peptide content by HPLC/CLND:

1.1 HPLC Instrument:

Pump: Agilent 1200 Series, Quat Pump G1311A
Sampler: Agilent 1260 Series, Hip ALS G1367E
Degasser: Agilent 1200 Series, Degasser G1379B
Detectors: Agilent 1200 Series, VWD G1314B
Nitrogen detector Antek 8060

1.2 HPLC conditions:

Eluents: A – MilliQ water
B – isopropanol
D – 1% TFA in MilliQ water
Flow rate: 1 mL/min
Gradient:

Time	A (%)	B (%)	D (%)
0	90	0	10
1	90	0	10
9	10	80	10
10	10	80	10
11	90	0	10
15	90	0	10

Column: ARION 5 μ C4-BIO 300 A, 4.6 x 100 mm
Serial No 221258

1.3 Sample preparation:

The whole amount of Tesamorelin (5 mg) was dissolved in 1 mL of DMSO.
Injection: 2.0 μ L

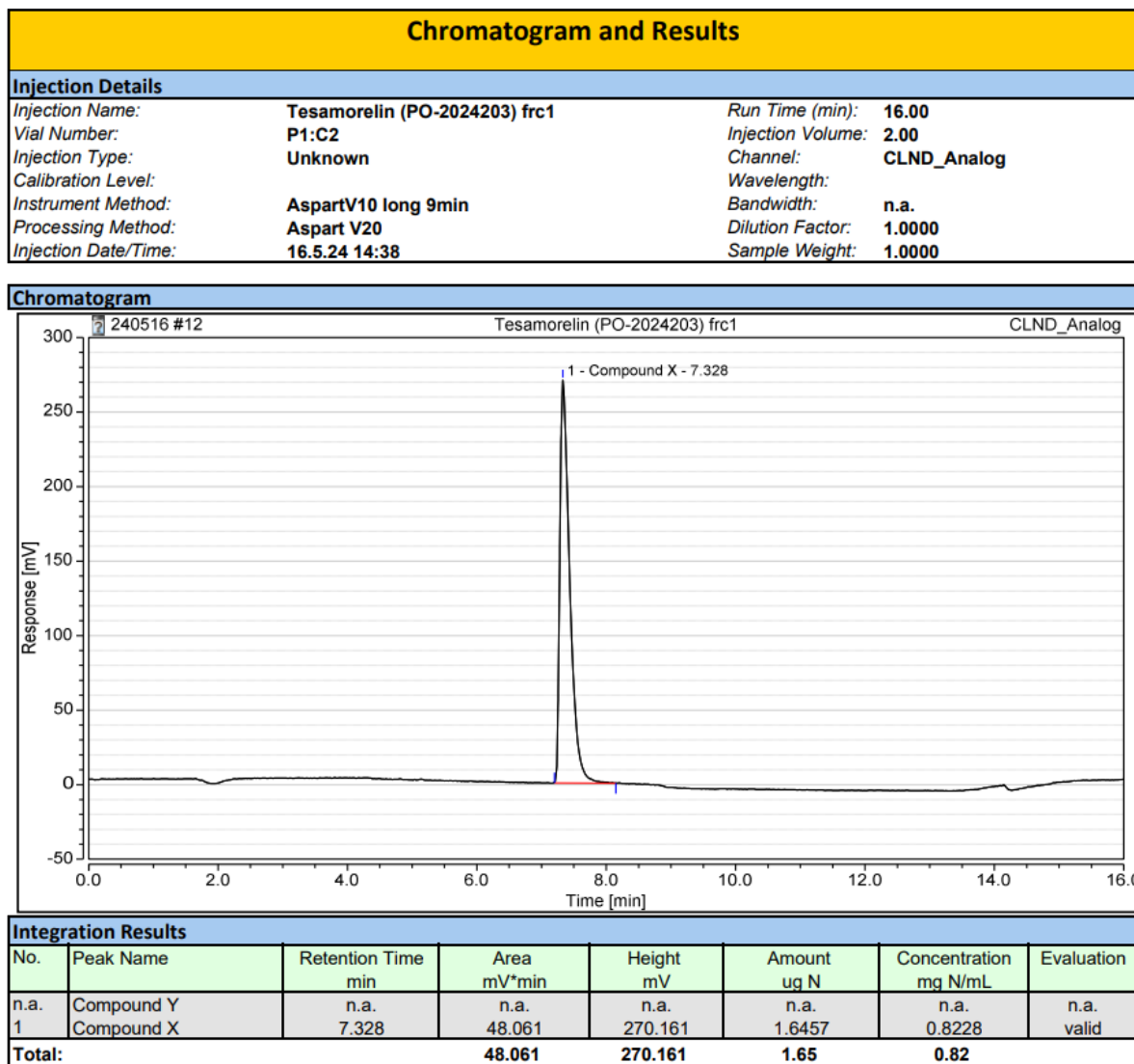
ANALYTICAL CERTIFICATE

Page 2/8

1.4 Chromatograms and calibration curve:

Instrument:CLND-2 Sequence:240516

Page 1 of 2



ANALYTICAL CERTIFICATE

Page 3/8

Instrument:CLND-2 Sequence:240516

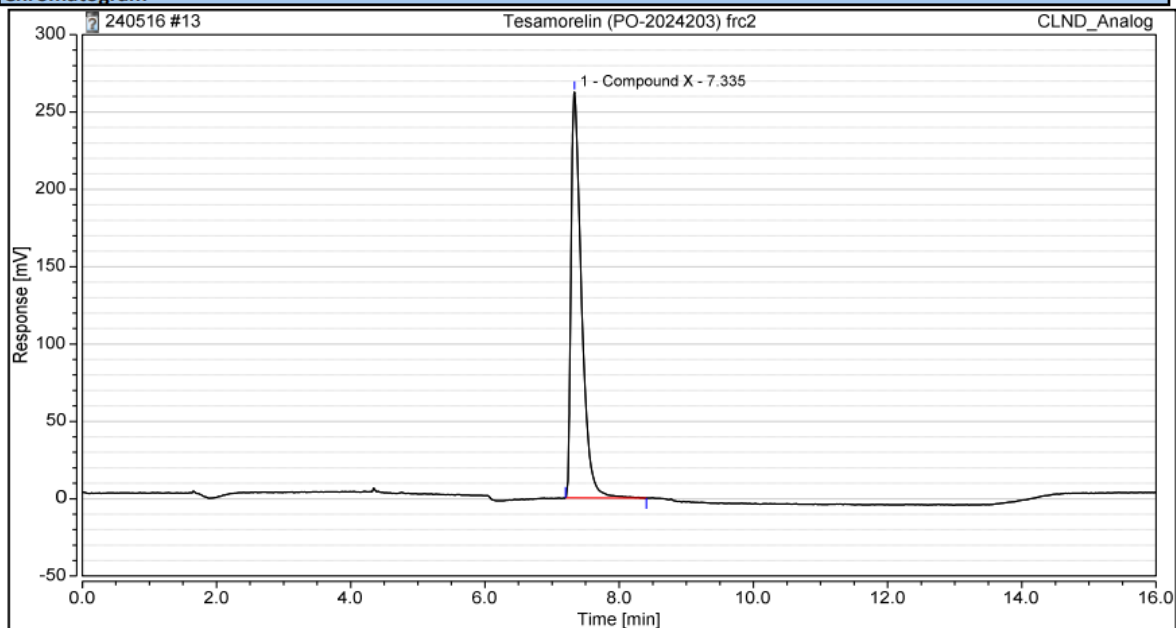
Page 1 of 2

Chromatogram and Results

Injection Details

Injection Name:	Tesamorelin (PO-2024203) frc2	Run Time (min):	16.00
Vial Number:	P1:C2	Injection Volume:	2.00
Injection Type:	Unknown	Channel:	CLND_Analog
Calibration Level:		Wavelength:	
Instrument Method:	AspartV10 long 9min	Bandwidth:	n.a.
Processing Method:	Aspart V20	Dilution Factor:	1.0000
Injection Date/Time:	16.5.24 15:08	Sample Weight:	1.0000

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mV*min	Height mV	Amount ug N	Concentration mg N/mL	Evaluation
n.a.	Compound Y	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	Compound X	7.335	47.564	262.366	1.6300	0.8150	valid
Total:			47.564	262.366	1.63	0.81	

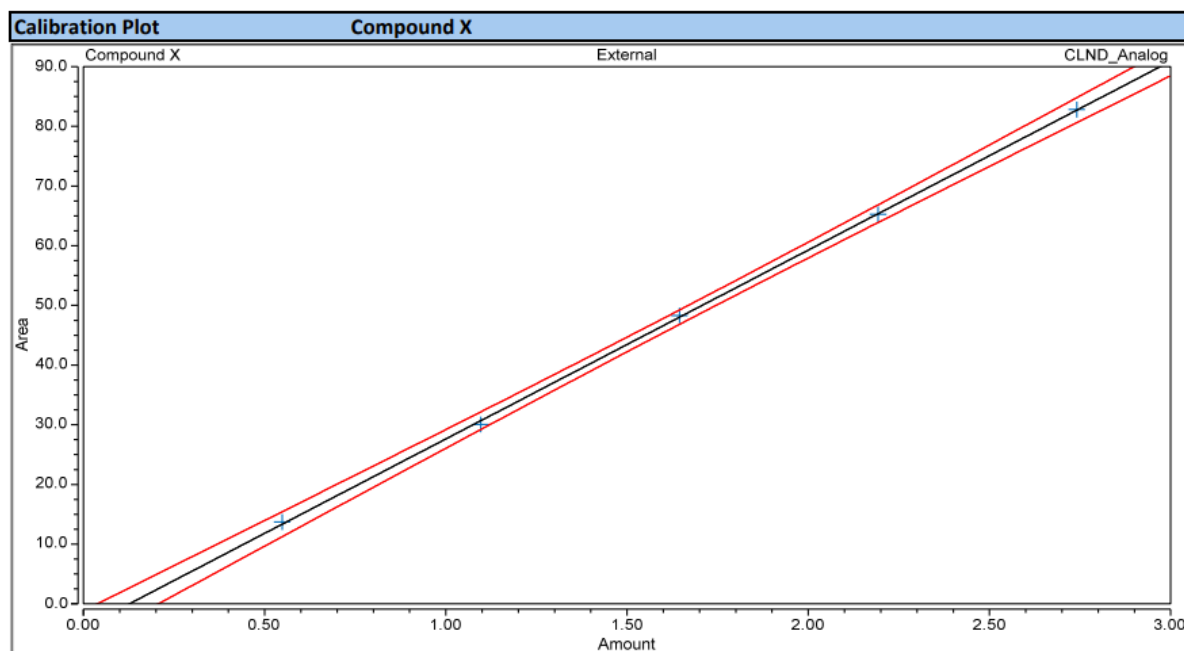
ANALYTICAL CERTIFICATE

Page 4/8

Instrument:CLND-2 Sequence:240516

Page 2 of 2

Calibration			
Calibration Details		Compound X	
Calibration Type	Lin, WithOffset	Offset (C0)	-4.0058
Evaluation Type	Area	Slope (C1)	31.6385
Number of Calibration Points	5	Curve (C2)	0.0000
Number of disabled Calibration Points	0	R-Square	0.9998



Calibration Results		Compound X					
No.	Injection Name	Calibration Level	X Value	Y Value	Y Value	Area mV*min	Height mV
			CLND_Analog Compound X	CLND_Analog Compound X	CLND_Analog Compound X	CLND_Analog Compound X	CLND_Analog Compound X
2	Aspart5	1	2.7408	82.8118	82.8118	82.812	474.666
3	Aspart4	1	2.1926	65.2513	65.2513	65.251	397.477
4	Aspart3	1	1.6445	48.3019	48.3019	48.302	287.720
5	Aspart2	1	1.0963	30.0439	30.0439	30.044	180.036
6	Aspart1	1	0.5482	13.7022	13.7022	13.702	82.075

ANALYTICAL CERTIFICATE

Page 5/8

1.4 Results:

NNC: Tesamorelin (PO-20242		Salt:	0
MW (calculated) g/mol	N content (calculated) %	N conc. (measured) mg × N/ml	
5135,86	19,64	0,8189	
Theoretical Volume ml		Lyophilizate amount mg	
1,00		5,00	
Peptide concentration mg/ml nmol/ml		Quantified amount mg nmol	
4,17	812	4,2	812
Peptide content assay %			
83,4			

Summary table:

Peptide	Aliquoting (mg)	Total weight of sample (mg)	Content of the peptide by CLND (mg)	Content of the peptide in the sample (%)	Content of the peptide against the amount on label.
Tesamorelin	5	NA	4.2	NA	83,4 %

ANALYTICAL CERTIFICATE

Page 6/8

2. Purity assessment by UPLC:

2.1 HPLC Instrument:

LC-System Waters Acquity UPLC
Detectors: UV or DAD at 214 nm

2.2 HPLC conditions:

Eluents: A – MilliQ water + 0.05% TFA
 B – acetonitrile + 0.05% TFA
Flow rate: 0.45 mL/min
Gradient: from 5% B to 60% B in 4 min, according to chromatogram results
Column: Waters Acquity BEH, C-18, 1.7µm, 2.1mm x 50mm
 Part No 186002353

2.3 Sample preparation:

An aliquote of Tesamorelin (5 mg) was dissolved in 1 mL of 30% MeCN.
Injection: 2.0 µL

ANALYTICAL CERTIFICATE

Page 7/8

2.4 Chromatogram of Tesamorelin (PO-2024203)

Sample information

UPLC2

Sample: Tesamorelin (PO-2024203)

Channel Description ACQUITY TUV ChA 214nm

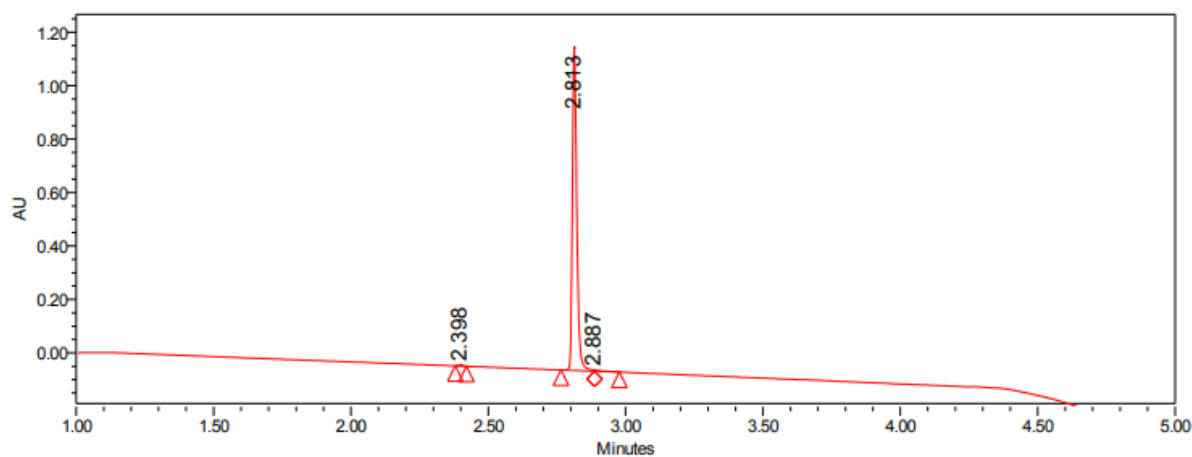
Date Acquired 5/23/2024 1:07:26 PM CEST

Vial : 1:A,2 Vol. : 2,00 ul

Date Processed 5/23/2024 2:20:21 PM CEST

Acq Method Set :

Gr_5_60_4mi_40C_0_45_K2_met_s



	RT	Area	Height (μV)	% Area
1	2.398	4705	4753	0.34
2	2.813	1371751	1210649	99.18
3	2.887	6646	3764	0.48

A: 0.05% TFA in water

B: 0.05% TFA in acetonitrile

Gradient :

0.0 - 0.5min 5 - 5 % B

0.5 - 4 min 5 - 60 % B

4.0 - 4.5 min 60 - 100 % B

4.5 - 5.0min 100 % B

5.0 - 5.5min 100 - 5 % B

6min 5 % B

0.45ml/min

Acquity UPLC BEHC18, 1.7μm, 2.1 x 50 mm column

column own temp. = 40 °C

2.5 Result of purity assessment

The overall purity is 99.18 % at 214 nm.

ANALYTICAL CERTIFICATE

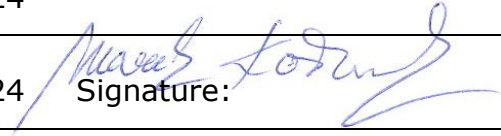
Page 8/8

CONCLUSION:

The sample Tesamorelin (Batch No. 2024203) was analyzed for peptide content and UV purity.

Peptide content is 83.4 % (4.2 mg in 5 mg).

Purity is 99.18 % (UPLC at 214 nm).

ANALYSIS COMPLETED:	Date: 23.05.2024
Issued by QC:	Date: 23.05.2024 Signature: 

Analytical report AR-24-KT-043634-02



Testing laboratory:

Eurofins Environment Testing Slovakia s.r.o.
 Robotnícka 820/36, 039 01 Turčianske Teplice
 IČO: 53 248 376
 Place of work:
Accredited testing laboratory Turčianske Teplice
 Robotnícka 820/36, 039 01 Turčianske Teplice
 tel: 043/490 1562
 RegistrationEnviroSK@etcee.eurofins.com, www.eurofins.sk

Customer:

PARTICLE s.r.o.
 Kolonáda 4490/18
 984 01 Lučenec
 SLOVAKIA

Date of Sample Receipt: 22.11.2024 Date of Testing: 22.11.2024 - 26.11.2024

Issue date: 03.12.2024

Information about Sampling:

Sampler: customer

Sample information: 104-2024-00048100

Sample description: Tesamorelin (PO-2024203)

Material: Peptidy

Physical and chemical tests

Parameter	Unit	Allowed Value	Measured Value	Uncertainty of Method measurement*	Testing method	E	SL	TT
Arsenic (As)	mg/kg	-	<1,5	-	ICP-MS	LS-PP-CH-85	-	TR A
Cadmium (Cd)	mg/kg	-	<0,2	-	ICP-MS	LS-PP-CH-85	-	TR A
Lead (Pb)	mg/kg	-	<0,5	-	ICP-MS	LS-PP-CH-85	-	TR A
Mercury (Hg)	mg/kg	-	<0,3	-	ICP-MS	LS-PP-CH-85	-	TR A

Notes:

E - evaluation
 S - satisfied
 NS - not satisfied
 (A) - accredited sampling
 (SA) - accredited sampling executed under the subcontract
 ŠPP - Standard operation procedure
 ND - not detected by given method
 LOQ, LQ – limit of quantification
 CFU - Colony forming unit
 NM - necessary quantity
 m - the highest allowed value at the case of one sample
 M, c - "M" highest allowed value for the number "c" at the case of 5 sample`s evaluation
 * - measurement uncertainty – sampling and analysis – determined by extension coefficient k=2 (with probability of 95%). If sample is taken by the customer uncertainty of sampling is not available.
 - uncertainty given in % reflects the uncertainty from the result of measurement.
 ** - Acceptable to consumers and no abnormal change
 SL - analysis laboratory: NZ-Nové Zámky, TR-Turčianske Teplice, RK-Ružomberok, TV-Trebišov

TT - type of test
 A - accredited test executed at the own test laboratory
 N - non accredited test executed at the own test laboratory
 SA - accredited test executed under the subcontract
 SN - unaccredited test executed under the subcontract
 (TM) - testing outside the laboratory at the customer

Disclaimer:

Laboratory is a disclaimer when the information is supplied by the customer (#) and can affect the validity of results. If the sample has been provided by the customer, the results refer to the sample as it was received. Gauges and measuring equipment used for testing were calibrated or attested in accordance with the valid metrological instructions. The above mentioned test results refer to the tested sample only! The result given in this Analytical report and marked as non accredited test shall not be a subject of accreditation. The result given in this Analytical report and marked as sub- delivery is the result of a Subcontractors gauging made under the terms and conditions of a contract concluded with him. This Analytical report shall not be reproduced except in full colour version, without written approval of the laboratory. SNAS is a Signatory to the Multilateral Agreement MRA ILAC.

Responsible for correctness:

Michaela Ruttkayová
Specialist worker

Worked out by: Andrea Podušelová

Validity check of document

**Test Certificate approved by**Michaela Ruttkayová
Specialist worker

As of 15-May-2024 17:19 (UTC+02:00) this information pertains to all reports for Eurofins Batch Number: W124AA1816.

Testing for this Batch was performed under the following regulatory guidelines: GMP Commercial.

Sample Number	Sample Description	Included In This Reporting Group	Report Version	Report Revision Log
W124AA1816-1	Tesamorelin (PO-2024203) 5 mg glass vials; BPT Received Date 29-Apr-2024	✓	1	Original Report - Analytical Report ABK24266

Contracted Testing Facility	Testing Performed
<p>Eurofins BioPharma Product Testing Slovakia s.r.o. (Bratislava) Kollárovo nám. 9 Bratislava, 811 07 SK CSPharmaSK@eurofins.sk www.eurofins.sk</p> <p>Questions about this report should be directed to your project manager or the general email listed above.</p>	
Other Eurofins BPT Testing Facilities	Testing Performed
<p>Eurofins BioPharma Product Testing Slovakia s.r.o. (Piešťany) Mudronova 25 Piešťany, 921 01 SK</p>	<p>Ph Eur Bacterial endotoxins Total Aerobic Microbial Count - Pour Plate Total Yeast and Mold Count-Pour Plate</p>

Prepared For	Reports Provided To
<p>PARTICLE s.r.o. Kolonáda 4490/18 Lučenec, 984 01 SK</p> <p>Client Account Number: A01677317RLW Eurofins Quote Number: K8MWPH24000401</p>	<p>Admin (Primary Reporting Contact) admin@particlepeptides.com</p>

PARTICLE s.r.o.
Kolonáda 4490/18
Lučenec, 984 01
SK

Client Account Number: A01677317RLW
Eurofins Quote Number: K8MWPB24000401

Eurofins Sample Number W124AA1816-1			
Original Received Date:		29-Apr-2024	
Description:		Tesamorelin (PO-2024203) 5 mg glass vials	
Analysis	Specification	Result	Unit
Total Aerobic Microbial Count - Pour Plate	----	0	CFU/vial
Method: Current Ph Eur (2.6.12); Current USP/NF <61>; Current JP (English) <4.05 I>; Current BP Appendix XVI Analysis Date: 10-May-2024 to 15-May-2024			
Total Yeast and Mold Count-Pour Plate	----	0	CFU/vial
Method: Current Ph Eur (2.6.12); Current USP/NF <61>; Current JP (English) <4.05 I>; Current BP Appendix XVI Analysis Date: 10-May-2024 to 15-May-2024			
Ph Eur Bacterial endotoxins	Max. 0.5	<0.5	IU/mg
Method: Current Ph Eur (2.6.14, Method A) Analysis Date: 14-May-2024 to 14-May-2024			
Sample Compliance Assessment			
W124AA1816-1 meets the requirement(s) for all listed test(s) where specifications were applied.			

Supplemental Information

Compliance statement was created according to comparison of test results in this report with the limits stated in product specification. Comparison refers to all of the tested parameters.

Laboratory is working in GMP system, is holder of Certificate of GMP compliance of a manufacturer No. SK/018V/2022 for physical-chemical testing and No. SK/019V/2022 for microbiological testing.

Tests are performed in compliance with GMP requirements for quality control laboratories. Tests are performed according to actual version of specification, unless the customer requires otherwise.

Laboratory is not responsible for the information provided by the customer, which can affect the validity of the results.

Test results can be claimed for 14 days from sending the results to the customer. Sample rests are stored 14 days from sending results to the customer and then are disposed according to Testing laboratory's regulations.

Eurofins BPT Testing Facility	Test
Eurofins BioPharma Product Testing Slovakia s.r.o. (Piešťany) Mudronova 25 Piešťany, 921 01 SK	Ph Eur Bacterial endotoxins Total Aerobic Microbial Count - Pour Plate Total Yeast and Mold Count-Pour Plate

Contracted Company: Eurofins BioPharma Product Testing Slovakia s.r.o. (Bratislava)

Kollárovo nám. 9, Bratislava, 811 07 SK
CSPharmaSK@eurofins.sk

Questions about this report should be directed to your project manager or the general email listed above.

Reviewed and electronically signed for Technical Supervisor Approval by
Vojtech Licko, ASM QC
for Eurofins BioPharma Product Testing Slovakia s.r.o. , on 15-May-2024 11:01:11 UTC+02:00
Reviewed and electronically signed for Quality Assurance Release by
Andrea Vargova, QA/QC / Head of Laboratory
for Eurofins BioPharma Product Testing Slovakia s.r.o. , on 15-May-2024 17:18:55 UTC+02:00