WOLVERINE PEPTIDES

Certificate of Analysis

Product Name	BPC157
CAS No.	137525-51-0
Molecular Formula	C62H98N16O22
Molecular Weight	1419.56
Batch No.	XR23120501-3
Date of Mfg	Feb 14, 2025
Reference Standard	Enterprise Standard
Retest Date	Feb 13, 2027

TEST	SPECIFICATION	RESULT
Appearance	White or almost white fluffy powder	Conform
Solubility	Soluble in water	Conform
Water Content	≤ 8.0%	3.70%
Acetic Acid	≤ 0.5%	0.12%
Trifluoroacetic Acid	≤ 0.5%	0.01%
Peptide Purity	≥ 98.0%	99.08%
Related Substance	Total Impurities(%) ≤ 2.0%	"0.92%
	Largest Single Impurity(%) ≤ 1.0%"	0.62%"
Bacterial Endotoxins	≤ 10 EU/mg	<1 EU/mg
Assay	≥ 90.0%	93.93%

Note: This product is for research or production use only. Not for direct human use.

WOLVERINE PEPTIDES

Certificate of Analysis

Product Name	Thymosinβ4
CAS No.	77591-33-4
Molecular Formula	C212H350N56O78S
Molecular Weight	4963.44
Batch No.	XR24091301-1
Date of Mfg	Feb 13, 2025
Reference Standard	Enterprise Standard
Retest Date	Feb 12, 2027

TEST	SPECIFICATION	RESULT
Appearance	White or almost white fluffy powder	Conform
Solubility	Soluble in water	Conform
Water Content	≤ 8.0%	4.40%
Acetic Acid	≤ 5%	1.15%
Trifluoroacetic Acid	≤ 0.5%	Not Detected
Peptide Purity	≥ 98.0%	99.39%
Related Substance	Total Impurities(%) ≤ 2.0%	Total Impurities: 0.61%
	Largest Single Impurity(%) ≤ 1.0%	Largest Single Impurity: 0.22%
Assay	≥ 90.0%	94.24%
Bacterial Endotoxins	≤ 10EU/mg	Conform

Note: This product is for research or production use only. Not for direct human use.

WOLVERINE PEPTIDES

Certificate of Analysis

Product Name	Tesamorelin
CAS No.	218949-48-5
Molecular Formula	C221H366N72O67S
Molecular Weight	5135.86
Batch No.	XR25103101-6
Date of Mfg	Mar 11, 2024
Reference Standard	Enterprise Standard
Retest Date	Mar 10, 2026

TEST	SPECIFICATION	RESULT
Appearance	White or almost white fluffy powder	Conform
Solubility	Soluble in water	Conform
Water Content	≤ 8.0%	5.60%
Acetic Acid	≤ 10.0%	4.62%
Trifluoroacetic Acid	≤ 0.5%	Not Detected
Peptide Purity	≥ 98.0%	99.58%
Related Substance	Total Impurities(%) ≤ 2.0%	Total Impurities: 0.42%
	Largest Single Impurity(%) ≤ 1.0%	Largest Single Impurity: 0.19%
Bacterial Endotoxins	≤ 10EU/mg	Conform
Assay	≥ 85.0%	92.46%

Note: This product is for research or production use only. Not for direct human use.

WOLVERINE PEPTIDES

Certificate of Analysis

Product	Tirzepatide	**Manufacturing Date**	Mar. 05, 2025
CAS No.	2023788-19-2	**Expiration Date**	Mar. 06, 2027
Molecular Formula	C225H348N48O68	**Report Date**	Mar. 07, 2025
Molecular Weight	4813.4514	**Standard**	In house
Batch No.	P20250301	**Storage**	Store at -20±5C, protected from light
Quantity	1390.05g		

TEST	SPECIFICATION	RESULT
Appearance	White to off white powder	Conforms
Solubility	Soluble in water	Conforms
Identification (HPLC)	Retention time matches reference solution	Conforms
pH	6.0 to 9.0	8.0
Water content (K.F)	5.0%	2.8%
Acetic acid	0.5%	0.1%
Trifluoroacetate ion	0.25%	0.01%
Sodium ion	5.0%	1.5%
Methanol	3000 ppm	40 ppm
Acetonitrile	410 ppm	200 ppm
N,N-Dimethylformamide	880 ppm	ND
Max single impurity	0.5%	0.44%
Total impurities	1.0%	0.44%
Purity (HPLC)	98.0%	99.5%
Impurities > mol. mass	0.30%	0.06%
Microbial count	10 cfu/g	< 1 cfu/g
Moulds & Yeasts	10 cfu/g	< 1 cfu/g
Assay	95.0% 105.0%	100.4%
Assay of Peptide	85.0%	95.1%
Bacterial Endotoxin test	< 50 EU/mg	Conforms

Note: This product is for research or production use only. Not for direct human use.

WOLVERINE PEPTIDES

Certificate of Analysis

Product Semaglutide

CAS No. 910463-68-2

Salt Type Na+

Manufacturing Date 2025.03.11

TEST	SPECIFICATION	RESULT
Appearance	White or off-white powder	Conforms
Solubility	Soluble in H_2O	Conforms
Amino Acid Analysis	Various ranges specified (His, Asp, Ala, Val, etc.)	Matches specified values
Purity (HPLC)	≥98%	99.31%
Mass Spectrum	4113.58 ± 1.0	4113.80
Clarity and color of solution	Clear and colorless	Conforms
Water	≤ 8.0%	2.5%
Trifluoroacetate ion	≤ 0.1%	N.D
pH	6.0 ~ 9.0	6.95
Sodium ion	≤ 4.0%	1.2%
Phosphate ion	< 0.5%	N.D
Chloride ion	< 0.5%	N.D
Related Substances (HPLC)	Any individual impurity: ≤ 1.0% Total impurity: ≤ 2.0%	0.30%, 0.70%
Residual Solvents	Methanol ≤ 0.3%, Isopropanol ≤ 0.5%, Acetonitrile ≤ 0.041%, etc.	Within limits
Peptide Assay	≥ 85.0%	95.60%
Bacterial Endotoxin	<10 EU/mg	Conforms

Note: This product is for research or production use only. Not for direct human use.

WOLVERINE PEPTIDES

Certificate of Analysis

Product Name	Retatrutide
CAS No.	2381089-83-2
Molecular Formula	C221H342N46O68
Molecular Weight	4731.33
Batch No.	XR25030501-2
Date of Mfg	Mar 05, 2025
Reference Standard	Enterprise Standard
Retest Date	Mar 04, 2027

TEST	SPECIFICATION	RESULT
Appearance	White or almost white fluffy powder	Conform
Solubility	Soluble in water	Conform
Water Content	≤ 8.0%	2.00%
Sodium ion	≤ 5.0%	1.47%
Trifluoroacetic Acid	≤ 0.5%	Not Detected
Acetic Acid	≤ 0.5%	0.19%
Peptide Purity	≥ 98.0%	99.26%
Related Substance	Total Impurities(%) ≤ 2.0%	Total Impurities: 0.74%
	Largest Single Impurity(%) ≤ 1.0%	Largest Single Impurity: 0.50%
Bacterial Endotoxins	≤ 10EU/mg	Conform
Assay	≥ 90.0%	94.54%

Note: This product is for research or production use only. Not for direct human use.

WOLVERINE PEPTIDES

Certificate of Analysis

Product Name	Ipamorelin
CAS No.	170851-70-4
Molecular Formula	C38H49N9O5
Molecular Weight	711.85
Batch No.	XR25030801-3-1
Date of Mfg	Mar. 12, 2024
Reference Standard	Enterprise Standard
Retest Date	Mar. 11, 2026

TEST	SPECIFICATION	RESULT
Appearance	White or almost white fluffy powder	Conform
Solubility	Soluble in water	Conform
Water Content	≤ 8.0%	3.50%
Acetic Acid	≤ 18.0%	16.10%
Trifluoroacetic Acid	≤ 0.5%	0.34%
Peptide Purity	≥ 98.0%	99.85%
Related Substance	Total Impurities(%) ≤ 2.0%	Total Impurities: 0.15%
	Largest Single Impurity(%) ≤ 1.0%	Largest Single Impurity: 0.05%
Bacterial Endotoxins	≤ 10 EU/mg	Conform
Assay	≥ 75.0%	79.60%

Note: This product is for research or production use only. Not for direct human use.

WOLVERINE PEPTIDES

Certificate of Analysis

Product Name	SOMATROPIN POWDER FOR INJECTION
Batch No.	Y20250312
Specification	10 IU / 3.7 mg / 1.0 ml / vial
MFG Date	2025.03.14
Storage	Sealed, 2~8°C
Expire Date	2027.03.13
Test Standard	EP 11.2

TEST	SPECIFICATION	RESULT
Appearance	White or off-white lyophilized powder	White lyophilized powder
Identification	Retention time of sample = standard	Conformed
Content retention time	Retention time of sample = standard	Conformed
Related protein	Total related protein ≤ 10.0%	2.7%
High molecular protein	High molecular protein ≤ 6.0%	0.3%
Impurities with charge	Deaminated impurities ≤ 6.5% Max individual impurities ≤ 2.0% Total impurities ≤ 11.5%	Deaminated impurities 2.5% Max individual impurities 1.7% Total impurities 5.2%
Sterility	Conforms	Conformed
Bacterial endotoxin	≤ 5.0 EU/mg	Conformed
Biological activity	≥ 3.0 IU/mg	3.4 IU/mg
Water	≤ 3.0%	1.1%
Visible particles	Conforms	Conformed
Undue toxicity	Conforms	Conformed
Content uniformity	Conforms	Conformed
Insoluble particle	Conforms	Conformed
Clarity and colour of solutions	Solution should be clear & colourless, ≤ Turbidity Standard No.2	Clear and Colourless
Assay	SOMATROPIN content 89.0%～105.0% of labelled amount	100.4%

Note: This product is for research or production use only. Not for direct human use.

WOLVERINE PEPTIDES

Certificate of Analysis

Product Name	CJC-1295
CAS No.	863288-34-0
Molecular Formula	C152H252N44O42
Molecular Weight	3367.897
Batch No.	XR25030501-1
Date of Mfg	Mar. 04, 2025
Reference Standard	Enterprise Standard
Retest Date	Mar. 03, 2027

TEST	SPECIFICATION	RESULT
Appearance	White or almost white fluffy powder	Conform
Solubility	Soluble in water	Conform
Water Content	≤ 8.0%	3.50%
Acetic Acid	≤ 15.0%	6.89%
Trifluoroacetic Acid	≤ 0.5%	Not Detected
Peptide Purity	≥ 98.0%	99.57%
Related Substance	Total Impurities(%) ≤ 2.0%	Total Impurities: 0.43%
	Largest Single Impurity(%) ≤ 1.0%	Largest Single Impurity: 0.17%
Bacterial Endotoxins	≤ 10 EU/mg	Conform
Assay	≥ 85%	88.08%

Note: This product is for research or production use only. Not for direct human use.

WOLVERINE PEPTIDES

Certificate of Analysis

Product Name	Tesamorelin
Batch No.	XR25103101-6 g
Specification	Not stated (Typically would include concentration, e.g., 2 mg/vial, if known)
MFG Date	2024.03.11
Storage	Sealed, 2~8°C
Expire Date	2026.03.10
Test Standard	Enterprise Standard

TEST	SPECIFICATION	RESULT
Appearance	White or almost white fluffy powder	Conform
Solubility	Soluble in water	Conform
Water Content	≤ 8.0%	5.60%
Acetic Acid	≤ 10.0%	4.62%
Trifluoroacetic Acid	≤ 0.5%	Not Detected
Peptide Purity	≥ 98.0%	99.58%
Total Impurities	≤ 2.0%	0.42%
Largest Single Impurity	≤ 1.0%	0.19%
Bacterial Endotoxins	≤ 10 EU/mg	Conform
Assay	≥ 85.0%	92.46%

Note: This product is for research or production use only. Not for direct human use.

WOLVERINE PEPTIDES

Certificate of Analysis

Product Name	Ipamorelin
Batch No.	XR25030801-3-1 g
Specification	Not stated
MFG Date	2024.03.12
Storage	Sealed, 2~8°C
Expire Date	2026.03.11
Test Standard	Enterprise Standard

TEST	SPECIFICATION	RESULT
Appearance	White or almost white fluffy powder	Conform
Solubility	Soluble in water	Conform
Water Content	≤ 8.0%	3.50%
Acetic Acid	≤ 18.0%	16.10%
Trifluoroacetic Acid	≤ 0.5%	0.34%
Peptide Purity	≥ 98.0%	99.85%
Total Impurities	≤ 2.0%	0.15%
Largest Single Impurity	≤ 1.0%	0.05%
Bacterial Endotoxins	≤ 10 EU/mg	Conform
Assay	≥ 75.0%	79.60%

Note: This product is for research or production use only. Not for direct human use.

WOLVERINE PEPTIDES

Certificate of Analysis

Product Name	Tirzepatide
Batch No.	P20250301
Specification	Not stated
MFG Date	2025.03.05
Storage	Store at -20±5°C, protected from light
Expire Date	2027.03.06
Test Standard	In house

TEST	SPECIFICATION	RESULT
Appearance	White to off white powder	Conforms
Solubility	Soluble in water	Conforms
Identification	Retention time corresponds to reference	Conforms
pH	6.0 to 9.0	8.0
Water Content	≤ 5.0%	2.8%
Acetic Acid	≤ 0.5%	0.1%
Trifluoroacetate Ion	≤ 0.25%	0.01%
Sodium Ion	≤ 5.0%	1.5%
Methanol	≤ 3000 ppm	40 ppm
Acetonitrile	≤ 410 ppm	200 ppm
N,N-Dimethylformamide	≤ 880 ppm	ND
Maximum Single Impurity	≤ 0.5%	0.44%
Total Impurities	≤ 1.0%	0.44%
Purity	≥ 98.0%	99.5%
High Molecular Mass Impurities	≤ 0.30%	0.06%
Total Aerobic Microbial Count	≤ 10^3 cfu/g	< 1 cfu/g
Moulds and Yeasts	≤ 10^2 cfu/g	< 1 cfu/g
Assay	95.0% – 105.0%	100.4%
Assay of Peptide	≥ 85.0%	95.1%
Bacterial Endotoxin Test	< 50 EU/mg	Conforms

Note: This product is for research or production use only. Not for direct human use.

WOLVERINE PEPTIDES

Certificate of Analysis

Product Name	GHK-Cu
Batch No.	2025051901
Specification	Not stated
MFG Date	2025/05/19
Storage	2–8°C, keep dry and dark
Expire Date	2027/05/18
Test Standard	Enterprise Standard

TEST	SPECIFICATION	RESULT
Appearance	Blue to purple powder	Conform
Solubility	Soluble in water	Conform
pH	5.5 – 7.0	6.2
GHK Purity	≥ 97.0%	99.0%
Copper Content	8.0% – 16.0%	11.7%
Chloride	≤ 15.0%	6.4%
Loss on Drying	≤ 8.0%	5.1%

Note: This product is for research or production use only. Not for direct human use.

WOLVERINE PEPTIDES

Certificate of Analysis

Product Name	Sermorelin
Batch No.	TH2505151
Specification	Not stated
MFG Date	2025/05/15
Storage	Place in an airtight container protected from light, 2–8°C
Expire Date	2027/05/14
Test Standard	Enterprise Standard

TEST	SPECIFICATION	RESULT
Appearance	White or almost white fluffy powder	Conform
Solubility	Soluble in water	Conform
Water Content	≤ 8.0%	3.50%
Acetic Acid	≤ 15.0%	7.21%
Trifluoroacetic Acid	≤ 0.5%	Not Detected
Peptide Purity	≥ 98.0%	99.48%
Total Impurities	≤ 2.0%	0.52%
Largest Single Impurity	≤ 1.0%	0.27%
Bacterial Endotoxins	≤ 10 EU/mg	Conform
Assay	≥ 85%	87.62%v

Note: This product is for research or production use only. Not for direct human use.