

Product Name: Exendin-4
CAS Number: 141758-74-9

Catalog No.: 1933 **Batch No.:** 16

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₈₄H₂₈₂N₅₀O₆₀S
Batch Molecular Weight: 4186.61
Physical Appearance: White lyophilised solid
Counter Ion: Acetate
Solubility: Soluble to 1 mg/ml in water
Storage: Store at -20°C
Peptide Sequence: His-Gly-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Leu-Ser-Lys-Gln-Met-Glu-Glu-Glu-Ala-Val-Arg-Leu-Phe-Ile-Glu-Trp-Leu-Lys-Asn-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Ser-NH₂

2. ANALYTICAL DATA

HPLC: Shows 98.9% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical Actual			Amino Acid Theoretical Actual		
Ala	2.00	1.94	Lys	2.00	1.99
Arg	1.00	1.00	Met	1.00	1.00
Asx	2.00	2.06	Phe	2.00	1.99
Cys			Pro	4.00	4.04
Glx	6.00	6.17	Ser	5.00	3.29
Gly	5.00	4.97	Thr	2.00	1.58
His	1.00	0.99	Trp	1.00	0.01
Ile	1.00	0.98	Tyr		
Leu	3.00	2.89	Val	1.00	0.97

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

Exendin-4 is a high affinity glucagon-like peptide 1 (GLP-1) receptor agonist ($K_d = 136 \text{ pM}$); originally isolated from *Heloderma suspectum* venom. Exendin-4 potently induces cAMP formation without stimulating amylase release in pancreatic acini. Potentiates glucose-induced insulin secretion in isolated rat islets. Exendin-4 protects against glutamate-induced neurotoxicity, and in a mouse model of metabolic imbalance it reduces neuroinflammation and enhances long-term-potentiation.

Physical and Chemical Properties:

Batch Molecular Formula: $C_{184}H_{282}N_{50}O_{60}S$

Batch Molecular Weight: 4186.61

Physical Appearance: White lyophilised solid

Peptide Sequence:

His-Gly-Glu-Gly-Thr-Phe-Thr-Ser-Asp-Leu-Ser-Lys-Gln-Met-Glu-Glu-Glu-Ala-Val-Arg-Leu-Phe-Ile-Glu-Trp-Leu-Lys-Asn-Gly-Gly-Pro-Ser-Ser-Gly-Ala-Pro-Pro-Pro-Ser-NH₂

Storage: Store at -20°C

Solubility & Usage Info:

Soluble to 1 mg/ml in water

This product is supplied in lyophilized form. It may appear as a solid, gel or film and be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Counter Ion: Acetate

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Peptides in solution are much less stable than in lyophilized form. This is especially true for peptides whose sequences contain amino acids such as Cys, Met, Trp, Asn, Gln, and N-terminal Glu.

Therefore we recommend storing peptides in solution for as short a time as possible. Avoid repeated freeze thaw cycles by dividing the peptide solution into aliquots and storing the aliquots at -20°C. Any portion of an aliquot unused after thawing should be discarded.

Peptides stored in solution can occasionally be susceptible to bacterial degradation. We recommend using sterile solutions or passing the peptide solution through a 0.2 µm filter to remove potential bacterial contamination whenever possible.

References:

Wang *et al* (2021) Exendin-4 improves long-term potentiation and neuronal dendritic growth in vivo and in vitro obesity condition. *Sci.Rep.* **11** 8326. PMID: 33859286.

Perry *et al* (2002) Protection and reversal of excitotoxic neuronal damage by glucagon-like peptide-1 and exendin-4. *J.Pharmacol.Exp.Ther.* **302** 881. PMID: 12183643.

Goke *et al* (1993) Exendin-4 is a high potency agonist and truncated exendin-(9-39)-amide an antagonist at the glucagon-like peptide 1-(7-36)-amide receptor of Ins-Secr.g β-cells. *J.Biol.Chem.* **268** 19650. PMID: 8396143.

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