

# Certificate of Analysis

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**Product Name:** ACTH (1-39)

**Catalog No.:** 3492

**Batch No.:** 13

**CAS Number:** 12279-41-3

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>207</sub>H<sub>308</sub>N<sub>56</sub>O<sub>58</sub>S  
**Batch Molecular Weight:** 4541.1  
**Physical Appearance:** White lyophilised solid  
**Counter Ion:** TFA  
**Solubility:** Soluble to 1 mg/ml in water  
**Storage:** Store at -20°C  
**Peptide Sequence:** Ser-Tyr-Ser-Met-Glu-His-Phe-Arg-Trp-Gly-Lys-Pro-Val-Gly-Lys-Lys-Arg-Arg-Pro-Val-Lys-Val-Tyr-Pro-Asn-Gly-Ala-Glu-Asp-Glu-Ser-Ala-Glu-Ala-Phe-Pro-Leu-Glu-Phe

## 2. ANALYTICAL DATA

**HPLC:** Shows 96.6% purity  
**Mass Spectrum:** Consistent with structure

## 3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical Actual			Amino Acid Theoretical Actual		
Ala	3.00	3.09	Lys	4.00	3.90
Arg	3.00	2.89	Met	1.00	0.91
Asx	2.00	2.05	Phe	3.00	3.11
Cys			Pro	4.00	4.05
Glx	5.00	5.16	Ser	3.00	2.99
Gly	3.00	2.94	Thr		
His	1.00	0.94	Trp	1.00	Not Detected
Ile			Tyr	2.00	1.95
Leu	1.00	1.06	Val	3.00	2.94

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

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**Product Name:** ACTH (1-39)

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**Description:**

ACTH (1-39) is a potent endogenous melanocortin receptor 2 (MC<sub>2</sub>) agonist (EC<sub>50</sub> = 57 pM). Component of the hypothalamic-pituitary-adrenal (HPA) axis that stimulates glucocorticoid production and release from the adrenal cortex. Induces insulin resistance, promotes a proinflammatory profile and stimulates UCP-1 in adipocytes in vitro.

**Physical and Chemical Properties:**

Batch Molecular Formula: C<sub>207</sub>H<sub>308</sub>N<sub>56</sub>O<sub>58</sub>S

Batch Molecular Weight: 4541.1

Physical Appearance: White lyophilised solid

**Peptide Sequence:**

Ser-Tyr-Ser-Met-Glu-His-Phe-Arg-Trp-Gly-  
Lys-Pro-Val-Gly-Lys-Lys-Arg-Arg-Pro-Val-  
Lys-Val-Tyr-Pro-Asn-Gly-Ala-Glu-Asp-Glu-  
Ser-Ala-Glu-Ala-Phe-Pro-Leu-Glu-Phe

**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:** TFA

**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:**

**Bertolini et al** (2009) Brain effects of melanocortins. *Pharmacol. Res.* **59** 13. PMID: 18996199.

**Iwen et al** (2008) Melanocortin crosstalk with adipose functions: ACTH directly induces Ins resistance, promotes a pro-inflammatory adipokine profile and stimulates UCP-1 in adipocytes. *J. Endocrinol.* **196** 465. PMID: 18310442.

**Kapas et al** (1996) Agonist and receptor binding properties of adrenocorticotropin peptides using the cloned mouse adrenocorticotropin receptor expressed in a stably transfected HeLa cell line. *Endocrinology* **137** 3291. PMID: 8754753.

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