PEPTIDE HORMONE

ACTH 1-39

Adrenocorticotropic Hormone, Corticotropin

Category	Peptide Hormone
Available Specifications	250mcg per vial

1. OVERVIEW

ACTH (Adrenocorticotropic Hormone) 1-39 is the full-length naturally occurring hormone secreted by the anterior pituitary, stimulating cortisol and adrenal androgen synthesis through melanocortin receptor activation.

2. MECHANISM OF ACTION

ACTH 1-39 is the full-length naturally occurring form of the hormone secreted by the anterior pituitary. It binds to melanocortin-2 receptors (MC2R) on the adrenal cortex, stimulating cortisol and adrenal androgen synthesis. ACTH regulates the hypothalamic-pituitary-adrenal (HPA) axis, with critical roles in stress response, circadian rhythm regulation, and immune modulation.

3. CLINICAL EVIDENCE & RESEARCH

Clinical studies demonstrate ACTH 1-39 effectiveness in treating adrenocortical insufficiency and Addison's disease. Research shows rapid cortisol elevation within minutes of administration. Studies confirm dose-dependent increases in plasma cortisol, DHEA, and DHEA-S levels. Chronic ACTH administration studies document restoration of adrenal responsiveness and improved clinical outcomes in deficient patients.

4. THERAPEUTIC BENEFITS

- Restoration of adrenal hormone production in deficient states
- Optimization of cortisol circadian rhythm
- Stress response support
- Immune function enhancement
- Potential improvement in fatigue and energy
- Restoration of normal HPA axis function

5. INDICATIONS

- Medical research in adrenocortical insufficiency
- Investigation of HPA axis restoration
- Adrenal support in aging research
- Evaluation of cortisol dynamics
- Stress-response physiology research

6. DOSING & ADMINISTRATION PROTOCOL

Indication	Dose	Route	Frequency	Duration
Research: HPA axis assessment	10-25 mcg	Daily or as needed	Intravenous or Intramuscular	
Stimulation testing	10-50 mcg single dose	One-time ad ministration	Intravenous	

Indication	Dose	Route	Frequency	Duration
Adrenal support studies	25 mcg	Daily SC	Subcutaneous	

Reconstitution

Reconstitute 250 mcg vial with 2-5 mL sterile 0.9% sodium chloride for injection. Gently swirl—do not shake vigorously. Solution should be clear and colorless.

Administration

Administer via slow intravenous injection (over 1 minute), intramuscular injection, or subcutaneous injection. Intravenous administration preferred for rapid effect in acute situations.

7. SIDE EFFECTS & SAFETY PROFILE

- Generally well-tolerated
- Potential effects include transient hyperglycemia and mild hypertension
- Electrolyte shifts (sodium, potassium) reflecting normal HPA axis activation
- Local injection site reactions with SC administration
- Mild headache or flushing reported
- Effects typically resolve within 24-48 hours

8. CONTRAINDICATIONS & PRECAUTIONS

- Hypersensitivity to ACTH or any component
- Active infection with pus formation
- Vaccinia or varicella
- Systemic fungal infections
- Osteoporosis
- Severe hypertension
- Recent myocardial infarction

9. STORAGE & HANDLING

Store lyophilized vials at 2-8°C (refrigerated) in original vial. Once reconstituted, use within 24 hours when stored at 2-8°C. Do not freeze reconstituted solution.

10. KEY REFERENCES

1. Raff H, Auchus RJ. Glucocorticoid-autonomous adrenocortical adenoma presenting as severe hypokalemia. J Clin Endocrinol Metab. 2019;104(8):3549-3553.

2. Oelkers W. Adrenocortical insufficiency. N Engl J Med. 1996;335(16):1206-1212.

3. Miller WL, Auchus RJ. The Molecular Biology, Biochemistry, and Physiology of Human Steroidogenesis. Endocr Rev. 2011;32(1):81-151.