

# KAIA PEPTIDES — PRODUCT SHEET

## SS-31 (30mg)

*Mitochondrial Protection Peptide – Energy, Longevity, Cellular Resilience*

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### What It Is

SS-31 (also known as Elamipretide) is a mitochondria-targeting tetrapeptide researched for its ability to:

- Protect mitochondrial membranes
- Improve ATP production
- Reduce oxidative stress
- Enhance cellular energy efficiency
- Support heart, muscle, and brain performance

Unlike most peptides, SS-31 has a unique ability to **accumulate inside mitochondria** — the power plants of the cell — where it stabilizes cardiolipin and improves mitochondrial function directly.

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### Understanding SS-31 — A Metaphorical Story

Imagine your cells as cities, and inside each one is a power plant — the mitochondria.

These power plants generate electricity (ATP) that runs:

- Lights (metabolism)
- Machines (muscle performance)
- Data centers (brain function)
- Infrastructure (overall cellular health)

But over time, stress, aging, and inflammation cause damage:

- Wires fray
- Turbines slow
- Sparks fly

- The plant becomes less efficient
- Energy output drops

This is where SS-31 enters.

**SS-31 is like sending in a master electrical engineer who specializes in restoring old, damaged power plants.**

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### • **SS-31 Repairs the Wiring (stabilizes cardiolipin)**

Cardiolipin is a special lipid that keeps the mitochondrial “engines” stable.

When it breaks down, the power plant collapses.

SS-31 directly attaches to and protects cardiolipin — reinforcing the wiring that keeps the plant running.

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### • **SS-31 Boosts Output (improves ATP production)**

Once the wiring is secure, turbines spin faster.

Lights get brighter.

Everything runs with more power and less strain.

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### • **SS-31 Reduces Sparks (lowers oxidative stress)**

As the power plant ages, sparks (free radicals) fly everywhere, damaging nearby equipment.

SS-31 acts like an antioxidant fire-suppressor crew:

- Reduces mitochondrial ROS
  - Prevents fire damage
  - Keeps the machinery clean
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### • **SS-31 Restores Backup Generators (improves efficiency under stress)**

When energy demand rises — workouts, illness, aging — most power plants struggle.

SS-31 helps them stay stable even under pressure, ensuring the city runs smoothly.

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- **SS-31 Reawakens Failing Plants (supports aging + damaged mitochondria)**

Some power plants are so worn down they're barely producing energy.

SS-31 helps revive them, improving energy flow throughout the entire cellular "city."

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## **The Result: A Stronger, More Energized Cell**

With SS-31 on the job:

- Energy increases
- Stress damage decreases
- Cellular longevity improves
- Metabolic function rises
- Heart, muscle, and brain cells operate with renewed power

This is the simplest way to visualize how SS-31 supports mitochondrial resilience in research models.

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## **Primary Research Benefits**

*(Summarized from published scientific literature)*

- **Mitochondrial Protection**

- Stabilizes cardiolipin
- Prevents mitochondrial membrane damage

- **Enhanced ATP Production**

- Supports higher energy output
- Improves efficiency of electron transport chain

- **Reduced Oxidative Stress**

- Decreases mitochondrial ROS production
- Protects cells from oxidative injury

- **Muscle, Heart & Brain Support**

- Studied for muscle performance
- Researched for cardiac energy balance
- Explored for neuroprotective effects

- **Longevity & Anti-Aging Pathways**

- Supports healthier mitochondrial aging
  - Helps maintain cellular integrity over time
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## **Common Research Use Cases**

- Mitochondrial dysfunction models
  - Heart function and muscle performance studies
  - Cellular energy & ATP production research
  - Oxidative stress and inflammation models
  - Longevity + anti-aging pathway exploration
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## **Typical Research Protocols (Literature-Based)**

*(For educational/reference purposes; not medical advice)*

- **Duration:** 4–12 weeks
  - **Frequency:** Daily or several times weekly
  - **Vial:** 30mg SS-31
  - **Reconstitution:** With bacteriostatic water
  - **Administration Route:** Subcutaneous or intravenous in research models
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## **Storage & Stability**

- Store lyophilized at **2–8°C**
  - Use reconstituted peptide within **30 days**
  - Protect from heat, moisture, and light
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## Safety Profile (Research-Based Notes)

- Non-hormonal
  - Generally well-tolerated in available studies
  - No major toxicity reported in animal or early human models
  - Long-standing interest in cardiac + mitochondrial research
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## Format

- **SS-31 30mg lyophilized powder**
  - Research Use Only
  - Purity: **≥99%** (third-party verified)
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## Legal & Compliance

**For Research Use Only. Not for human consumption.**

**Not approved by the FDA to diagnose, treat, cure, or prevent any disease.**

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## Brand Finishing (Kaia Style)

**Restore the power plant. Renew the energy.**

**A mitochondria-focused peptide for advanced research.**