

PATIENT INFORMATION

MOTS-c + SS-31

Mitochondrial Peptide Combination • Alchemy Compounding Pharmacy

ADULT CLINICAL INFORMATION This compounded MOTS-c + SS-31 combination has not been established as an FDA-approved fixed-combination treatment. This sheet is educational and does not provide instructions for self-administration or an established dosing cycle.

What are MOTS-c and SS-31?

MOTS-c is a naturally occurring mitochondrial-derived peptide encoded within mitochondrial DNA. Laboratory research suggests that it participates in cellular responses to metabolic stress and energy balance, including signalling involving AMPK and changes in nuclear gene expression.

SS-31 is also known as elamipretide. It is a mitochondria-targeting tetrapeptide that binds cardiolipin within the inner mitochondrial membrane. This interaction can influence mitochondrial membrane structure and function. Elamipretide is the active ingredient in the FDA-approved medicine Forzinity.

How Might the Combination Work?

The rationale for combining the two peptides is that they approach mitochondrial biology from different directions: MOTS-c is being investigated as a metabolic signalling peptide, while SS-31/elamipretide acts more directly at the inner mitochondrial membrane and cardiolipin.

IMPORTANT EVIDENCE POINT A plausible complementary mechanism does not prove clinical synergy. High-quality human trials demonstrating that MOTS-c and SS-31 work better together than either peptide alone have not been established.

Potential Areas of Interest

- Mitochondrial function and cellular energy biology.
- Metabolic stress responses and glucose-related signalling - supported mainly by MOTS-c preclinical research.
- Muscle and mitochondrial function - elamipretide has disease-specific human clinical data.
- Exercise adaptation, recovery and healthy-ageing biology - scientifically interesting, but not established indications for this combination.

Regulatory & Evidence Context

Component	What the evidence currently supports
MOTS-c	Predominantly experimental/preclinical evidence; no established general wellness indication
SS-31 / elamipretide	FDA-approved as Forzinity for muscle strength in Barth syndrome patients ≥30 kg; this does not validate the compounded combination for other uses

Alchemy Compounding Pharmacy Presentation

The Alchemy Compounding Pharmacy product combines MOTS-c and SS-31 in a multi-dose pen presentation. Its formulation is distinct from FDA-approved Forzinity. Administration, dose and frequency must follow the individual prescription and the dispensing pharmacy's approved product instructions.

DOSE & FREQUENCY Use only the dose and frequency stated on the patient's prescription and Alchemy dispensing label. Do not infer or alter a regimen from pen clicks alone; confirm any uncertainty with the prescribing clinician or dispensing pharmacy.

What is the Best Time of Day?

There is no robust clinical evidence demonstrating that this MOTS-c + SS-31 combination is more effective at a particular time of day. Claims that morning, pre-exercise or bedtime administration is inherently superior are not established by controlled human trials.

PRACTICAL POSITION Timing should be determined by the prescribing clinician, the specific pharmacy instructions and individual tolerability rather than by an unproven circadian or exercise-timing claim.

How Long Should Treatment Continue?

There is no validated universal treatment duration or cycling schedule for the compounded MOTS-c + SS-31 combination. Published evidence does not establish that patients should use a fixed number of weeks on treatment followed by a particular number of weeks off.

Forzinity's disease-specific clinical programme involved chronic elamipretide treatment, but that cannot be directly transferred to this compounded combination or to general mitochondrial/wellness use. MOTS-c research also does not establish a standard clinical cycling interval.

DURATION OF TREATMENT Use a defined clinical rationale and planned review point. Continued or repeat treatment should be based on clinician reassessment rather than an automatic recurring cycle.

Possible Side Effects & Safety Limitations

The safety profile of the fixed MOTS-c + SS-31 combination has not been characterised in large controlled trials. Safety information for elamipretide cannot automatically be assumed to describe the compounded combination.

- Elamipretide clinical trials commonly reported local administration-site reactions.
- Hypersensitivity reactions have been reported with elamipretide and can occasionally be serious.
- Changes in eosinophil counts have been observed with elamipretide treatment.
- Human safety information for native MOTS-c is limited; much of its evidence remains preclinical.
- The interaction and long-term safety profile of MOTS-c and SS-31 used together are not well established.

SEEK MEDICAL ADVICE New, persistent or significant symptoms during treatment require medical review. A serious allergic reaction requires urgent medical attention.

Who Requires Particular Caution?

Because this fixed combination has limited human safety data, additional caution is appropriate in pregnancy or breastfeeding, significant renal disease, active serious illness, a history of significant drug hypersensitivity and in people taking complex medication regimens. Individual clinical assessment is essential.

Elamipretide exposure is affected by renal impairment in its approved formulation. This is another reason not to assume that a general compounded protocol is appropriate for every patient.

Clinical Review & Monitoring

- Confirm a clear clinical rationale and measurable treatment goals before therapy.
- Review renal function, relevant medical history, allergies and current medicines where clinically indicated.
- Assess tolerability and objective clinical response at a planned review point.
- Reconsider treatment if there is no meaningful benefit or if adverse effects occur.

Important

MEDICALLY SUPERVISED CARE The Alchemy MOTS-c + SS-31 combination should not be represented as equivalent to FDA-approved Forzinity, nor as a proven treatment for fatigue, athletic performance, metabolic disease, recovery or healthy ageing. It requires appropriate clinical oversight and evidence-aware counselling.

Clinical references

FDA. Forzinity (elamipretide) Prescribing Information, September 2025. Lee C et al. The mitochondrial-derived peptide MOTS-c promotes metabolic homeostasis and reduces obesity and insulin resistance, *Cell Metabolism* (2015). Karaa A et al. MMPOWER-3 randomized clinical trial of elamipretide in primary mitochondrial myopathy (2023).