

What MOTS-c is

A sixteen-amino-acid peptide encoded by the mitochondrial genome, discovered in 2015. In mice it prevents obesity, improves insulin sensitivity, and restores old animals' running capacity. In people it rises in the blood with exercise. Sellers call it the exercise peptide.

HUMAN EVIDENCE None for MOTS-c itself. One 2021 trial of an analog, CB4211, in 20 adults for four weeks; then abandoned

FORMS Research vials of 10 and 40 mg; no approved or compounded product

PRICE \$30–\$50 per 10 mg; a seller month is 40–60 mg

STATUS Not approved. Advisory committee voted 7–5 in July 2026 to recommend it for compounding, against FDA staff; FDA has not acted

ANTI-DOPING Prohibited at all times (SO)

THE EXERCISE PEPTIDE

In ten young men, MOTS-c rose in muscle and blood with exercise. That is evidence the body uses it, not that injecting it does what exercise does.

This pamphlet is for adults using or being offered MOTS-c. It is a summary of the published record, not medical advice.

Before the first vial, ask

- ☐ Would exercise, which raises my own MOTS-c, do this with evidence?
- ☐ Do I understand no person has received MOTS-c in a published trial?
- ☐ Insulin, a sulfonylurea, or a cancer history?
- ☐ What is the concentration, and my dose in units?
- ☐ Is there an independent certificate of analysis for this lot?
- ☐ Am I tested? It is prohibited at all times.
- ☐ Has the Phase 2a reported? If not, what is this based on?

SOURCES

1. Lee C, et al. The mitochondrial-derived peptide MOTS-c promotes metabolic homeostasis and reduces obesity and insulin resistance. *Cell Metab.* 2015;21(3):443–454.
2. Reynolds JC, et al. MOTS-c is an exercise-induced mitochondrial-encoded regulator of age-dependent physical decline and muscle homeostasis. *Nat Commun.* 2021;12:470.
3. Kim SJ, et al. The mitochondrial-derived peptide MOTS-c is a regulator of plasma metabolites and enhances insulin sensitivity. *Physiol Rep.* 2019;7(13):e14171.
4. CohBar, Inc. CohBar announces positive topline results from the Phase 1a/1b study of CB4211 under development for NASH and obesity. Press release, August 10, 2021.
5. CohBar, Inc. Form 8-K, 2022 (CB4211 formulation not suitable for further development; strategic alternatives), and merger agreement with Morphogenesis, Inc., May 22, 2023.
6. U.S. Food and Drug Administration. Briefing document, Pharmacy Compounding Advisory Committee meeting, July 23–24, 2026: MOTS-c.
7. U.S. Food and Drug Administration. July 23–24, 2026 meeting of the Pharmacy Compounding Advisory Committee (agenda, materials, and vote summary).
8. MOTS-c for improving insulin sensitivity in adults with prediabetes and overweight/obesity (MOTS-MET), Phase 2a. Clinical trial registration, 2026.
9. Representative research-chemical MOTS-c listings (10 and 40 mg) and seller protocol pages, as sold September 2026.
10. Health Affairs Forefront. FDA advisory committee's vote may open a drug-compounding back door for unapproved peptides. 2026.

This guide is an educational summary of published sources and is not medical advice. MOTS-c has no approved form and no published human trial of the peptide itself; every vial sold is an unapproved drug of unverified identity, strength, and sterility. The protocols described are reported as sellers describe them, not recommended. Status statements are current as of the edition date.

Newport Peptide Society

[NEWPORTPEPTIDESOCIETY.COM/GUIDES/MOTS-C](https://newportpeptidesociety.com/guides/mots-c)

FIRST EDITION · SEPTEMBER 2026 · REVISED
SEPTEMBER 23, 2026

MOTS-c

A guide to the mitochondrial peptide: an exercise mimic in mice, a discontinued analog in twenty people, and a July 2026 committee vote the FDA's own staff argued against

MOTS-c is a sixteen-amino-acid peptide encoded not by the cell's main genome but by the small genome inside its mitochondria, discovered in 2015. In mice it improves insulin sensitivity, prevents diet-induced obesity, and restores the running capacity of old animals, and in people it rises in the blood with exercise. Sellers call it the exercise peptide. This guide covers what it does in animals, what the single human program (a modified analog, twenty people, four weeks, then abandoned) showed, why no study has ever given MOTS-c itself to a person, how the vials are dosed, and what the FDA's advisory committee decided in July 2026 over the objection of the agency's reviewers.

What the studies have shown

THE EVIDENCE, BY KIND		
STUDY	RESULT	GRADE
Mice, 2015 and 2019	Prevented obesity; better insulin sensitivity	Animal
Old mice, 2021	Ran longer, kept muscle	Animal
CB4211 analog, 20 people, 4 weeks, 2021	Lower liver enzymes and glucose; weight trend; site reactions	C, different molecule
MOTS-c Phase 2a, 120 people, 12 weeks	Registered, not reported	Pending

CB4211 was chosen because native MOTS-c was not suitable as a drug; in 2022 the company found its formulation unfit and the program ended.

O 6

Published human trials of MOTS-c itself, by any route, per FDA's July 2026 review

7-5^{6,7}

Committee vote to recommend it, two abstaining, against FDA staff's advice

WHAT WOULD COUNT

The registered Phase 2a: twelve weeks of the actual peptide against placebo, glucose tolerance as the endpoint. Until then every claim rests on mice.

How it is dosed, and the July 2026 vote

SELLER PROTOCOL FOR A 10 MG VIAL + 1 ML (10 MG/ML). NO TRIAL. SUBCUTANEOUS.			
WEEKS	DOSE	UNITS	PER 4 WK
1-2	5 mg twice weekly	50	20 mg
3-8	5 mg three times weekly	50	60 mg
Alt.	10 mg once weekly	100	40 mg

No human dose exists; sellers scaled these from mouse doses by no published method. A 40 mg vial with 2 mL is 20 mg/mL: 5 mg is 25 units, not 50.

FDA STAFF, JULY 2026	Recommended against: not well characterized, no human effectiveness evidence, no human safety data including immunogenicity
COMMITTEE	Voted 7-5 to recommend anyway, with BPC-157, TB-500, KPV, epitalon, Semax
TODAY	Not approved; not compoundable until FDA acts by rulemaking; the vial remains an unapproved drug

READING THE HEADLINE

Sellers report the vote as FDA clearing MOTS-c. The record says the reviewers found no human evidence at all, and a panel recommended listing it anyway.

Units, and what is not known

UNITS = (MG ÷ MG/ML) × 100

10 mg with 1 mL is 10 mg/mL: 5 mg is 50 units, 10 mg is 100. Write the concentration on the vial; the 40 mg vial changes it.

ILLUSTRATION ONLY		
VIAL + WATER	5 MG	10 MG
10 mg + 1 mL	50 units	100 units
40 mg + 2 mL	25 units	50 units

- Reported: injection-site reactions in more than one in ten with the analog; nausea and fatigue on seller forums.
- Immunogenicity unassessed: antibodies to an injected copy could neutralize the body's own MOTS-c. FDA raised it; no one has looked.
- Could lower blood sugar in anyone on insulin or a sulfonylurea; unstudied.
- Not in pregnancy, under 18, or with a cancer history; none tested.
- Everything past four weeks is unknown, for a molecule that is not the one sold.

WHAT DOES HAVE EVIDENCE

Exercise for insulin sensitivity, endurance, and muscle; metformin and the GLP-1 drugs for glucose and weight; each with outcome trials. MOTS-c has a mouse literature and no human one.