AEVANOVA

2026 / ENGLISH MASTER

PEPTIDE FIELD GUIDE

EVIDENCE • QUALITY • SAFETY

A practical map of peptide medicines, investigational compounds and verification science — written to separate clinical evidence from market mythology.

AEVANOVA EDITORIAL STANDARD

No vendor rankings. No reconstitution arithmetic. No injection walkthroughs. No community dosing schedules. Every profile identifies regulatory status, the strongest human evidence and the most important uncertainty.

Edition 01 / 01 November 2026

READ THIS FIRST

A guide to evidence — not a protocol

Peptides range from approved medicines with defined labels to experimental materials with little or no human exposure data. Treating them as one category creates false confidence.

What this guide does

- Maps each compound to its **regulatory status** and strongest available evidence.
- Separates a molecule’s scientific literature from the quality of any product sold under that name.
- Explains what identity, purity, quantity, sterility and endotoxin testing can — and cannot — prove.
- Flags marketing terms, extrapolations and common category errors.

What this guide deliberately does not do

- It does not provide dosing, stacking, reconstitution, injection or sourcing instructions.
- It does not convert preliminary signals into treatment claims.
- It does not certify an unlabeled vial, a reseller, a batch or a supplier.
- It does not replace a licensed clinician, approved labeling or emergency care.

AEVANOVA rule

A name is not an identity. A chromatogram is not sterility. A mechanism is not clinical benefit. A dramatic percentage is not meaningful until the estimand, denominator and comparator are clear.

HOW TO READ

The AEVANOVA evidence ladder

The ladder describes confidence in a claim — not whether a compound is fashionable, chemically interesting or commercially available.

A

Approved evidence

Regulator-reviewed indication, label and manufacturing controls. Approval remains indication- and product-specific.

B

Pivotal human evidence

Randomized phase 3 evidence or equivalent, but approval may still be pending and long-term questions may remain.

C

Early human evidence

Phase 1/2, small controlled studies, observational data or indirect clinical evidence.

D

Preclinical evidence

Cell, tissue or animal studies. Biological plausibility is not proof of benefit in people.

E

Unverified / absent

No credible human exposure data, unclear identity, or claims built mainly on anecdotes and marketing.

STATUS ≠ EVIDENCE

An approved product can still have modest benefits or serious risks. An investigational compound can have strong phase 3 data but no legal market authorization. Both facts matter.

QUICK MAP

Where the evidence actually sits

Status is current to 01 November 2026 and may vary by jurisdiction. “Not approved” does not mean “proven unsafe”; it means safety, efficacy and product standards have not been authorized for the claimed use.

COMPOUND	AREA	STATUS	LEVEL	AEVANOVA NOTE
Retatrutide	Metabolic	Investigational	B	Phase 3 published
Tirzepatide	Metabolic	Approved*	A	Label-specific
Semaglutide	Metabolic	Approved*	A	Label-specific
CagriSema	Metabolic	FDA review	B	Not yet approved
Tesamorelin	GH axis	Approved*	A	HIV lipodystrophy
Elamipretide	Mitochondrial	Accelerated approval*	A/B	Barth syndrome
CJC-1295	GH axis	Not approved	C	Small human studies
Ipamorelin	GH axis	Not approved	C	Limited human data
BPC-157	Repair	Not approved	D/C	Very low certainty
TB-500	Repair	Not approved	E/D	Fragment ≠ Tβ4
KPV	Inflammation	Not approved	D	No established efficacy
GHK-Cu	Skin / repair	Route-dependent	D/C	Product context matters
MOTS-c	Mitochondrial	Not approved	D/C	Analogue ≠ native
Semax / Selank	Neuro	Jurisdiction-specific	C	Evidence limitations
Thymosin α1	Immune	Jurisdiction-specific	C/B	Indication-specific

*Approval applies only to the named, authorized product and indication. It does not transfer to an unapproved copy, a different route, a “research” vial or a broader wellness claim.

USE THE FULL PROFILE

This page is an orientation tool. The profile pages explain the endpoint, comparator, evidence gap and verification problem behind each label.

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SECTION 01

Metabolic medicines

Approved incretin medicines and investigational multi-agonists are reshaping obesity research. The evidence is strong in places — but status, endpoints and tolerability still require precision.

TRIPLE AGONIST

Retatrutide

An investigational single molecule with agonist activity at GIP, GLP-1 and glucagon receptors. Phase 3 efficacy is substantial; regulatory approval and full long-term characterization are still pending.

INVESTIGATIONAL EVIDENCE B

−25.0%
Mean weight change at 12 mg vs −3.9% placebo, 72 weeks,

2,339
Participants in TRIUMPH-1

Phase 3
Peer-reviewed result published in 2026

What the strongest evidence shows

TRIUMPH-1 randomized adults with obesity or overweight plus a weight-related condition. Mean weight changes were −17.6%, −23.7% and −25.0% at 4, 9 and 12 mg versus −3.9% with placebo under the treatment-regimen estimand.

What remains uncertain

- Long-term cardiovascular, pancreatic, gallbladder and lean-mass outcomes across diverse populations.
- How benefits and adverse events compare directly with approved therapies in completed head-to-head trials.
- Quality and identity of products marketed online under the name “retatrutide.”

AEVANOVA read

The phase 3 signal is real. It does not legitimize unapproved copies, erase tolerability questions or make an efficacy-estimand headline interchangeable with the main treatment-regimen result.

Sources: [R1], [R2]

DATA LITERACY

Trial numbers are not slogans

The same trial can produce more than one valid percentage. The question is what each number estimates — and what happened to participants who stopped treatment or used other therapy.

−25.0%
TRIUMPH-1, 12 mg, treatment-regimen estimand

−28.3%
Efficacy estimand: idealized on-treatment scenario

−3.9%
Placebo, treatment-regimen estimand

Treatment-regimen / treatment-policy style

Estimates the effect in a real trial strategy that accounts for discontinuation and other events according to the analysis plan. This is often the more conservative, decision-relevant number.

Efficacy / trial-product style

Estimates an idealized scenario in which participants remain on treatment and avoid specified intercurrent events. Useful — but it must not be presented as if it were the only trial result.

AEVANOVA correction rule

Always pair the percentage with **drug, dose, duration, population, comparator and estimand**. Never call an efficacy estimand “what everyone lost.”

Sources: [R1], [R2]

APPROVED MEDICINE

Tirzepatide

A dual GIP/GLP-1 receptor agonist with regulator-reviewed uses that depend on jurisdiction and product labeling. It is not equivalent to an unapproved vial carrying the same name.

APPROVED* EVIDENCE A

−20.9%
SURMOUNT-1 mean change at 15 mg vs −3.1% placebo

72 wk
Primary trial duration

Label
Obesity/overweight; U.S. OSA indication also exists

Clinical evidence

In SURMOUNT-1, mean weight change at 72 weeks was −15.0%, −19.5% and −20.9% at 5, 10 and 15 mg versus −3.1% with placebo. Gastrointestinal adverse events were common, especially during escalation.

Approved does not mean casual

- Label warnings include thyroid C-cell tumor risk language, pancreatitis, gallbladder disease, dehydration-related kidney injury and hypoglycemia with certain diabetes therapies.
- Pregnancy, severe gastrointestinal disease, anesthesia planning and interacting medicines require clinician review.

Product boundary

Approval applies to the authorized product, manufacturing system, device, label and indication — not automatically to compounded or grey-market material.

Sources: [R3], [R4]

GLP-1 REFERENCE

Semaglutide

A GLP-1 receptor agonist with approved products for specific diabetes, obesity and cardiovascular-risk indications. Product, strength and indication must be named; “semaglutide” alone is not enough.

APPROVED* EVIDENCE A

Why it matters in a peptide guide

Semaglutide is a benchmark for interpreting newer metabolic programs. It shows how a molecule can have strong clinical evidence while product-specific dosing, devices, contraindications and post-marketing surveillance remain essential.

What evidence does not transfer

- An approved injection label does not validate oral, sublingual or “research” formulations.
- A supplier’s purity report does not establish equivalence to an approved medicine.
- Class-level weight-loss data cannot be used to predict an individual response.

AEVANOVA language

Name the exact product and indication when discussing approval. For unapproved copies, describe the material as an unapproved product purported to contain semaglutide — not as the medicine itself.

Sources: [R4], [R21]

AMYLIN + GLP-1

Cagrilintide and CagriSema

Cagrilintide is a long-acting amylin analogue. CagriSema combines it with semaglutide. As of this edition, the combination is under FDA review and is not approved in the U.S. or EU.

FDA REVIEW EVIDENCE B

−20.4%
REDEFINE 1 treatment-policy mean change

3,417
Participants in phase 3 REDEFINE 1

Q4 2026
Sponsor-stated expected U.S. decision window

REDEFINE 1

At 68 weeks, CagriSema produced a mean weight change of −20.4% versus −3.0% with placebo under the treatment-policy estimand. Gastrointestinal events were common and mostly mild-to-moderate and transient.

Do not blend the numbers

Sponsor communications also report a higher idealized on-treatment estimate. Both may be informative, but the estimand must travel with the percentage.

Current status

Novo Nordisk filed a U.S. NDA in December 2025. Pending review is not approval; safety and efficacy are not yet established in an authorized label.

Sources: [R5], [R6]

SAFETY MAP

The incretin-class conversation

The risk discussion is not a checklist for self-screening. It is a map of issues that belong in clinical history, medication review, monitoring and urgent-care planning.

Before treatment discussion

- Personal/family history relevant to labeled thyroid tumor contraindications.
- Prior pancreatitis, gallbladder disease, severe gastrointestinal symptoms or gastroparesis.
- Kidney vulnerability, dehydration risk, pregnancy plans, diabetes medicines and planned procedures/anesthesia.

Signals requiring prompt medical assessment

- Severe or persistent abdominal pain, especially with vomiting.
- Inability to keep fluids down, marked weakness, fainting or signs of dehydration.
- Allergic symptoms, severe hypoglycemia, new jaundice or rapidly worsening vision symptoms.

Why “research use only” is not protection

A disclaimer does not control identity, dose accuracy, microbial contamination, interactions or patient-specific risk. It also does not create pharmacovigilance or a recall pathway.

Sources: [R4], [R21]

BODY COMPOSITION

Weight loss is not only fat loss

Large reductions on the scale include both fat and lean mass. The clinical question is how body composition, strength, nutrition and function change — not whether lean mass can be reduced to zero.

What the tirzepatide substudy found

In a SURMOUNT-1 DXA substudy, fat mass fell proportionally more than lean mass, improving the fat-to-lean ratio. Lean mass still declined; the result does not justify “muscle-sparing” as an absolute claim.

What a responsible discussion includes

- Resistance exercise capacity and baseline frailty.
- Protein and energy adequacy assessed in context of kidney, liver and other conditions.
- Strength, function, symptoms and body composition — not scale weight alone.
- Medication tolerability severe enough to compromise hydration or nutrition.

Marketing warning

No peptide “stack” has established itself as a universal answer to lean-mass loss during obesity treatment. Mechanistic arguments and community before/after photos are not controlled outcomes.

Sources: [R3], [R23]

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SECTION 02

Repair and inflammation

This is where market vocabulary most often outruns human evidence. “Healing,” “recovery” and “anti-inflammatory” are endpoints to test — not properties granted by a nickname.

EXPERIMENTAL

BPC-157

A synthetic peptide associated with extensive rodent and cell literature but extremely limited, low-certainty human evidence. It is not an approved medicine.

NOT APPROVED EVIDENCE D/C

What exists

Preclinical studies report effects in models of tendon, ligament, gastrointestinal and vascular injury. Human literature remains sparse and methodologically weak; a 2026 systematic review identified only three small studies totaling 30 participants.

What does not exist

- No validated, regulator-approved formulation or dosing regimen.
- No robust phase 2/3 evidence establishing benefit for sports injury, gut disease or systemic “healing.”
- No evidence that an online vial matches material used in any publication.

Regulatory signal

FDA has cited limited safety information and insufficient evidence to know whether proposed routes could harm humans. In 2026, BPC-157 underwent federal compounding-policy review.

AEVANOVA verdict

Biologically interesting; clinically unproven. Claims such as “accelerates healing,” “repairs the gut” or “protects organs” exceed the human evidence.

Sources: [R7], [R8], [R9]

NAME CHECK

TB-500 is not thymosin beta-4

Thymosin beta-4 (Tβ4) is a 43-amino-acid endogenous peptide studied in tissue repair. “TB-500” commonly refers to a shorter fragment or a market label. Evidence cannot be transferred between them without proof.

NOT APPROVED EVIDENCE E/D

The category error

A paper using full-length Tβ4 does not establish that a fragment marketed as TB-500 has the same pharmacology, stability, tissue exposure or clinical effect.

What to verify

- Exact amino-acid sequence and molecular formula.
- Whether the publication used full-length Tβ4, a defined fragment or another analogue.
- Route, formulation and species studied.
- Identity and quantity of the actual tested product.

Evidence boundary

FDA reported no identified human exposure data for the nominated TB-500 substance in its compounding review materials. “Popular in recovery stacks” is market behavior, not clinical validation.

Language to retire

Avoid “TB-500 is thymosin beta-4,” “systemic healing peptide,” and claims that animal wound models prove sports-injury recovery in people.

Sources: [R7], [R8], [R10]

TRIPEPTIDE

KPV

Lys–Pro–Val is a short sequence derived from α-melanocyte-stimulating hormone. It has preclinical anti-inflammatory signals, but no established human efficacy, pharmacokinetics or safety profile for marketed uses.

NOT APPROVED EVIDENCE D

What preclinical work suggests

Cell and animal models have explored inflammatory signaling and gut-related effects. These studies can nominate hypotheses; they cannot define a clinical indication or dose.

The human evidence gap

- No established randomized clinical evidence for inflammatory bowel disease, skin disease or systemic inflammation.
- No validated exposure–response relationship.
- No generalizable safety database for injected, oral or topical market products.

FDA review context

FDA’s compounding evaluation found no human exposure data for the nominated substance and highlighted insufficient information to characterize safety for proposed uses.

AEVANOVA verdict

KPV belongs in a preclinical research profile, not a treatment promise. Route-specific products require their own formulation, stability and safety evidence.

Sources: [R8], [R18]

COPPER COMPLEX

GHK-Cu

A naturally occurring copper-binding tripeptide complex used in cosmetic and research contexts. Evidence and risk depend heavily on route, formulation and claim.

ROUTE-SPECIFIC EVIDENCE D/C

Where the signal is strongest

Topical and biomaterials research has explored wound biology, extracellular-matrix signaling, skin appearance and hair-related endpoints. Product-level cosmetic evidence varies substantially.

What must not be generalized

- Topical evidence does not establish systemic injection safety or efficacy.
- Cell-signaling findings do not prove anti-ageing effects in humans.
- Copper content, oxidation state, excipients and microbiological quality matter to product behavior.

Regulatory caution

FDA has cited limited safety information for injectable GHK-Cu and insufficient information to know whether it could harm humans through proposed routes.

AEVANOVA language

Describe the exact route and endpoint. Avoid using “regenerative,” “collagen boosting” or “systemic repair” as settled clinical facts.

Sources: [R7], [R21]

MARKET NICKNAMES

Stacks are labels, not standardized products

“Wolverine,” “Glow,” “KLOW” and similar names are commercial shorthand. They do not define a universal formula, validated ratio, manufacturing standard or clinical protocol.

Why the name misleads

- Different sellers use different ingredients and strengths under the same nickname.
- Evidence for one component does not prove additive or synergistic benefit of the mixture.
- Combined risk can increase even when each component is poorly characterized.
- A blend makes identity, quantity, stability and impurity analysis more complex.

How to decode a stack

Replace the nickname with an exact ingredient list, sequence/form, quantity per component, formulation, route, batch identity and test panel. If any of those are missing, the product is not fully described.

Editorial rule

AEVANOVA can explain market terminology without endorsing it. We do not present community stack names as medical categories or reproduce dosing calendars.

Sources: [R7], [R21]

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SECTION 03

Growth-hormone axis

Endocrine signaling is not a bodybuilding shortcut. Molecule identity, pulsatility, IGF-1 exposure, glucose effects and indication-specific risk all matter.

APPROVED — NARROWLY

Tesamorelin

A growth-hormone-releasing factor analogue approved in the U.S. for reduction of excess abdominal fat in adults with HIV lipodystrophy. The label explicitly says it is not indicated for weight-loss management.

APPROVED* EVIDENCE A

What approval means

The regulator reviewed a defined product, formulation and indication. The evidence does not turn tesamorelin into a general visceral-fat, anti-ageing or bodybuilding medicine.

Label-level cautions

- Active malignancy and disruption of the hypothalamic–pituitary axis are contraindications.
- IGF-1 elevation, glucose intolerance/diabetes, fluid retention and hypersensitivity require attention.
- Long-term cardiovascular safety has not been established.

AEVANOVA read

Tesamorelin is an example of why “peptide” is too broad a category: it has real approval, real monitoring requirements and a deliberately narrow use.

Sources: [R11]

SECRETAGOGUES

CJC-1295 and ipamorelin

CJC-1295 is a growth-hormone-releasing hormone analogue; ipamorelin is a ghrelin-receptor agonist. They are frequently paired in the market, but the combination is not a standardized approved therapy.

NOT APPROVED EVIDENCE C

Name precision matters

“CJC-1295 with DAC” refers to a long-acting albumin-binding construct. “CJC without DAC” is often used imprecisely for modified GRF(1–29). These are not interchangeable names or exposure profiles.

What human studies show

Small studies demonstrate pharmacodynamic changes in GH/IGF-1 for CJC-1295 and characterize ipamorelin pharmacokinetics. They do not establish broad claims for fat loss, muscle gain, recovery, sleep or longevity.

Safety uncertainty

FDA has identified immunogenicity and impurity concerns for compounded forms and insufficient information for several injectable routes. Serious events occurred in an intravenous ipamorelin study, although route and population matter.

AEVANOVA verdict

Mechanistic activity is established more clearly than clinical utility. The popular pairing should be described as a market combination, not a validated protocol.

Sources: [R7], [R12], [R13], [R14], [R15]

EXPERIMENTAL FRAGMENT

PEG-MGF and MGF labels

Mechanogrowth factor is discussed as an IGF-1 splice-variant concept. Marketed “MGF” and PEGylated fragments are not established clinical products, and product naming often outruns sequence-level clarity.

NOT APPROVED EVIDENCE E/D

The translation problem

Endogenous splice-variant biology, a synthetic fragment and a PEGylated market product are different entities. Evidence about one cannot be silently transferred to the others.

Key unknowns

- Verified human pharmacokinetics and biodistribution.
- Clinically validated benefit for muscle injury or hypertrophy.
- Immunogenicity, aggregation and PEG-related product risks.
- Sequence and quantity consistency across marketed vials.

FDA signal

FDA has reported no identified human exposure data for PEG-MGF in its safety-risk review and insufficient information to know whether proposed use could harm humans.

AEVANOVA verdict

This is a research concept surrounded by high-confidence marketing. Treat claims of localized growth, rapid recovery or “satellite-cell activation” as unproven.

Sources: [R7]

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SECTION 04

Mitochondria, brain and immunity

Some compounds in this category have genuine clinical development; others have mostly preclinical or jurisdiction-limited evidence. Molecular family resemblance does not transfer approval.

MITOCHONDRIAL PEPTIDE

Elamipretide / SS-31

Elamipretide is a mitochondria-targeting tetrapeptide. In 2025, the FDA granted accelerated approval to Forzinity for a narrow Barth-syndrome indication — not for general energy, exercise or longevity use.

ACCELERATED APPROVAL* EVIDENCE A/B

What was approved

Forzinity was approved to improve muscle strength in patients with Barth syndrome weighing at least 30 kg. Approval relied on a surrogate considered reasonably likely to predict benefit.

Why “accelerated” matters

A confirmatory randomized trial is required to verify clinical benefit. Approval can be narrowed or withdrawn if benefit is not confirmed.

What does not transfer

- Barth-syndrome evidence does not prove anti-ageing or performance enhancement.
- An authorized drug product is not interchangeable with material sold as “SS-31.”
- The approved route and formulation remain product-specific.

AEVANOVA read

A major scientific milestone, and a lesson in indication discipline: one rare-disease approval is not a universal mitochondrial claim.

Sources: [R16]

MITOCHONDRIAL-DERIVED

MOTS-c

A mitochondrial-derived peptide studied in metabolism, ageing biology and exercise physiology. Most human evidence concerns naturally occurring MOTS-c levels and genetics — not treatment with an exogenous product.

NOT APPROVED EVIDENCE D/C

What is interesting

Preclinical work links MOTS-c biology to metabolic regulation and stress responses. Human observational studies have examined circulating peptide and exercise-related changes.

The analogue problem

CB4211 entered early clinical testing as a MOTS-c analogue. Evidence about an analogue is not automatically evidence for native MOTS-c sold online, and a trial record is not proof of efficacy.

Evidence gap

- No approved indication or established therapeutic regimen.
- No robust clinical proof for fat loss, endurance, insulin sensitivity or longevity.
- Identity, stability and assay challenges complicate market verification.

AEVANOVA verdict

Compelling biology; unproven consumer therapy. Clearly label endogenous observations, analogue trials and exogenous native-peptide claims as separate evidence streams.

Sources: [R7], [R17], [R18]

NEUROPEPTIDE ANALOGUES

Semax and Selank

Synthetic peptide analogues used or studied in certain jurisdictions and promoted globally for focus, anxiety and neuroprotection. Evidence quality, indications and regulatory status are not uniform.

JURISDICTION-SPECIFIC EVIDENCE C

What the literature contains

Small clinical studies and mechanistic work report neurobiological and behavioral signals. Much of the evidence base is regionally concentrated, heterogeneous and difficult to generalize to current online products.

What remains unresolved

- Independent replication in larger, well-controlled trials.
- Validated outcomes for healthy-person cognitive enhancement.
- Long-term safety and interaction profiles.
- Equivalence between studied formulations and online nasal/injectable products.

FDA position

FDA has cited limited or absent safety-related information for proposed compounded uses and insufficient information to determine whether they could harm humans.

AEVANOVA language

“Nootropic peptide” is a market category, not an approval. Do not turn preliminary or region-specific evidence into universal cognitive-enhancement claims.

Sources: [R7], [R19]

IMMUNE MODULATOR

Thymosin alpha-1

A 28-amino-acid peptide with immune-modulating activity, approved for certain uses in some countries but not FDA-approved in the United States.

JURISDICTION-SPECIFIC EVIDENCE C/B

Where evidence exists

Studies span chronic infections, immune dysfunction and adjunctive settings, but populations, endpoints, formulations and study quality vary. Evidence must be assessed indication by indication.

What not to claim

- It is not a universal “immune booster.”
- Evidence in one infection or immune state does not transfer to healthy-person prevention.
- Immune modulation can be clinically consequential in autoimmune disease, transplantation, cancer and concurrent therapy.

U.S. compounding review

An FDA advisory committee concluded the available evidence did not convincingly support inclusion on the 503A bulks list for the nominated uses, reflecting both efficacy and safety uncertainty.

AEVANOVA verdict

A legitimate research and clinical topic with jurisdiction-specific history — but broad wellness claims exceed the evidence.

Sources: [R20], [R21]

VERIFICATION

A COA is evidence — not a magic shield

A legitimate laboratory report can answer precise questions about the sample it received. It cannot automatically prove the identity, sterility or chain of custody of every vial sold under the same batch name.

A COA can support

- Identity of the tested sample
- Measured content / quantity
- Chromatographic purity
- Specific tests actually ordered
- A laboratory task or accession record

A COA cannot prove by itself

- Every vial belongs to that sample
- Aseptic manufacture or sterility
- Absence of endotoxin or particulates
- Cold-chain history or stability
- Clinical safety, efficacy or legality

Five-link chain of confidence

- 1. **Authentic report:** verify directly with the laboratory, not through a screenshot.
- 2. **Sample traceability:** connect lot, vial photographs, seal and submission record.
- 3. **Relevant method:** identity, purity and quantity are different questions.
- 4. **Representative sampling:** one selected vial may not represent a heterogeneous batch.
- 5. **Complete risk picture:** add microbiological and particulate controls where relevant.

VERIFY AT SOURCE

A QR code should lead to the independent laboratory record or AEVANOVA's verification page — never to an unverifiable image hosted only by the seller.

LAB METHODS

Different tests answer different questions

“99% purity” is not a universal quality score. It usually describes the relative chromatographic area of detected components under a specific method — not dose accuracy, sterility or absence of every contaminant.

LC-MS / MS	**Is the expected molecular species present?**	Answers: Identity support Limit: Does not alone prove quantity or sterility
HPLC / UPLC	**How does the main peak compare with detected impurities?**	Answers: Purity profile Limit: Method-, detector- and integration-dependent
QUANTITATIVE ASSAY	**How much target compound is in the sample?**	Answers: Content / potency Limit: Needs suitable reference standards and validation
SEC / AGGREGATION	**Are dimers or higher-molecular-weight species present?**	Answers: Protein aggregation Limit: Especially relevant to larger peptides/proteins
RESIDUAL SOLVENTS	**Are process solvents above limits?**	Answers: Manufacturing residue Limit: Does not cover all synthesis impurities
WATER / COUNTERION	**What contributes to total mass?**	Answers: Salt / hydration context Limit: Important when converting mass to active moiety

The correct question comes first

A laboratory panel should be designed around the product’s risk: small peptide vs protein, sterile vs non-sterile route, lyophilized vs solution, single-use vs multidose, and the specific claim being made.

MICROBIOLOGY

Purity is not sterility

Chemical analysis and microbiological control are separate systems. A vial can contain the expected molecule at high chromatographic purity and still be unsafe because of viable organisms, endotoxin, particles or container failure.

Sterility testing

Attempts to detect viable microorganisms under defined conditions. It samples a batch and has detection limits; it does not replace validated aseptic processing, environmental monitoring and container-closure integrity.

Bacterial endotoxins

Endotoxin is a heat-stable component of Gram-negative bacteria. A product may be sterile yet still contain clinically important endotoxin. The acceptable limit depends on route and maximum exposure.

Particulate matter

Visible and subvisible particles can come from glass, rubber, fibers, aggregation or the formulation itself. A clear-looking vial is not a substitute for validated particulate testing.

AEVANOVA minimum language

Report only what was tested. “Identity + purity” must never be abbreviated to “fully tested,” “pharmaceutical grade,” “sterile” or “safe for injection.”

Sources: [R7], [R21], [R22]

STABILITY

Storage is formulation-specific

There is no universal “peptide storage chart.” Stability depends on sequence, formulation, concentration, container, light, oxygen, agitation, temperature history and whether the product is dry or in solution.

Use this hierarchy

- 1. Authorized product label or pharmacy instructions.
- 2. Product-specific stability study using the exact formulation and container.
- 3. Qualified laboratory or manufacturer documentation with defined acceptance criteria.
- 4. General chemical principles only as a warning — never as a replacement for data.

Why generic rules fail

Some approved lyophilized products are used immediately after reconstitution; others have validated refrigerated periods. Freeze–thaw tolerance, light sensitivity and agitation risk can differ dramatically. Bacteriostatic water does not create stability data for the peptide mixed with it.

Reject these shortcuts

- “All dry peptides last years in a freezer.”
- “Clear solution means it is still good.”
- “BAC water makes every vial safe for 30 days.”
- “Avoid shaking” as the only product-quality control.

AEVANOVA rule

If the exact formulation lacks validated stability and microbiological data, the honest answer is uncertainty — not a confident storage duration.

Sources: [R11], [R21]

URGENT SIGNALS

When a peptide conversation becomes medical care

Do not use a website, supplier chat or community group to manage a serious reaction. Product identity may be uncertain and symptoms can evolve quickly.

Seek urgent medical help for

- Breathing difficulty, facial or throat swelling, widespread hives or collapse.
- Severe/persistent abdominal pain, repeated vomiting, fainting or inability to hydrate.
- Chest pain, stroke-like symptoms, severe confusion, seizure or loss of consciousness.
- Rapidly spreading redness, severe injection-site pain, fever, pus or red streaking.
- Severe low-blood-sugar symptoms, especially with insulin or secretagogues.

Bring useful information

- The vial, packaging, photographs and any remaining product — do not discard them.
- Compound name as sold, estimated amount/time, other medicines and symptoms.
- Batch number, seller information and laboratory report link if available.
- Tell clinicians plainly if the product was unapproved or obtained outside a pharmacy.

Report and preserve evidence

Clinicians can treat the reaction even when the product is uncertain. In the U.S., suspected adverse events and product-quality problems can be reported through FDA MedWatch; other countries have their own pharmacovigilance systems.

Sources: [R24]

TERMS

The vocabulary that prevents category errors

A compact reference for reading trial reports, labels and laboratory documents.

ACTIVE MOIETY
The molecular part responsible for pharmacological activity; may differ from total salt or hydrate mass.

ANALOGUE
A modified molecule designed to resemble or alter the behavior of a natural peptide.

ASSAY / CONTENT
A quantitative estimate of how much target compound is present.

CHROMATOGRAPHIC PURITY
Relative signal assigned to the main peak under a stated method; not a sterility or potency claim.

CLINICAL ENDPOINT
A measured outcome intended to reflect how a patient feels, functions or survives.

COUNTERION
An ion paired with a charged peptide; it can contribute to total measured mass.

EFFICACY ESTIMAND
An idealized treatment-effect estimate under specified assumptions about intercurrent events.

IDENTITY
Evidence that the expected molecule or molecular species is present.

INVESTIGATIONAL
Studied in clinical research but not authorized for general marketing for the claimed use.

LYOPHILIZED
Freeze-dried; does not automatically mean sterile, stable or correctly filled.

PHASE 1 / 2 / 3
Broad development stages emphasizing initial safety/PK, proof-of-concept/dose-ranging and confirmatory evidence.

SURROGATE ENDPOINT
A marker expected to predict clinical benefit, but not necessarily a direct patient benefit itself.

HOW TO READ

Three kinds of dose information

A number can come from an approved label, a clinical-trial design or an online community. Those are not interchangeable levels of authority.

1 • Approved product label

The exact regimen is regulator-reviewed for a named product, route, population and indication. It still requires prescribing, contraindication screening, monitoring and the current full label.

2 • Published or registered trial regimen

A research design explains how a study tested a hypothesis. Reporting it is evidence literacy — not a recommendation to reproduce it outside the trial.

3 • Community or hypothetical protocol

Anecdotal schedules are not validated simply because they are repeated. A warning label does not resolve unknown identity, exposure, interactions, sterility or patient-specific risk. This guide does not reproduce numerical community protocols.

AEVANOVA convention

LABEL means an authorized product regimen. **STUDIED** means a trial arm or research design. **NO VALIDATED PROTOCOL** means there is no dose this guide can responsibly recommend.

LABEL REFERENCE

Approved U.S. regimens — product-specific

This is a compact transcription of selected current labels, not personalized medical advice. Check the linked full prescribing information because labels change and formulations are not interchangeable.

ZEPBOUND® / tirzepatide

Weight reduction / OSA

- Start 2.5 mg subcutaneously once weekly for 4 weeks; then 5 mg once weekly.
- May increase by 2.5 mg after at least 4 weeks at the current dose.
- Weight maintenance: 5, 10 or 15 mg weekly. OSA: 10 or 15 mg weekly. Maximum: 15 mg weekly.

WEGOVY® injection / semaglutide

Weight / CV risk / MASH label context

- Weeks 1–4: 0.25 mg weekly; 5–8: 0.5 mg; 9–12: 1 mg; 13–16: 1.7 mg.
- Weight or CV maintenance: 2.4 mg weekly (recommended) or 1.7 mg weekly based on response/tolerability.
- MASH maintenance: 2.4 mg weekly; label permits 1.7 mg if 2.4 mg is not tolerated.

EGRIFTA WR® / tesamorelin

HIV lipodystrophy only

- 1.28 mg subcutaneously once daily.
- EGRIFTA WR and EGRIFTA SV have different doses and are not substitutable.
- Not indicated for weight-loss management.

FORZINITY™ / elamipretide

Barth syndrome, body weight ≥30 kg

- 40 mg subcutaneously once daily.
- Adults with eGFR <30 mL/minute and not on dialysis: 20 mg once daily.
- Accelerated approval; confirmatory evidence is required.

Sources: [R4], [R11], [R16], [R25]

STUDIED — NOT PRESCRIBED

Investigational trial regimens

These numbers identify pivotal research arms. They do not establish a legal product, self-use schedule or safe substitute for trial eligibility, monitoring and controlled supply.

Retatrutide — TRIUMPH-1 phase 3

Participants were randomized to target doses of **4 mg, 9 mg or 12 mg once weekly**, or placebo, for 72 weeks. The study used protocol-defined escalation and monitoring. Retatrutide remains investigational.

- The 12 mg treatment-regimen estimate was −25.0% mean weight change versus −3.9% with placebo.
- Do not convert target arms into a community titration schedule.

CagriSema — REDEFINE 1 phase 3

The investigational fixed-dose combination was studied up to **cagrilintide 2.4 mg + semaglutide 2.4 mg once weekly** for 68 weeks, with protocol-defined escalation and active/placebo comparators.

- Treatment-policy mean weight change was −20.4% versus −3.0% with placebo.
- An FDA application is under review; the combination is not yet approved in this edition.

Why trial context matters

Eligibility criteria, prohibited medicines, rescue rules, adverse-event surveillance, stopping criteria and the exact manufactured formulation are part of the regimen. A dose number copied from a paper is not the trial.

Sources: [R1], [R5], [R6]

NO VALIDATED PROTOCOL

Where the responsible dose is “unknown”

For the compounds below, AEVANOVA does not present a community dose. The absence of a validated human regimen is itself a publication-worthy fact.

BPC-157	No approved product or validated human dose; tiny, low-certainty human literature.
TB-500	No standardized identity or validated human regimen; fragment evidence cannot be borrowed from Tβ4.
KPV	No established human PK, efficacy or safety dose for marketed uses.
INJECTABLE GHK-CU	Topical/cosmetic evidence does not establish an injected regimen.
CJC-1295 + IPAMORELIN	Small mechanistic studies do not validate the popular market combination or schedule.
PEG-MGF	No identified human exposure data supporting a regimen.
MOTS-C	Native peptide, endogenous observations and analogue trials are different evidence streams.
SEMAX / SELANK	Jurisdiction- and formulation-specific evidence; no universal enhancement protocol.
THYMOSIN ALPHA-1	Use and approval vary by jurisdiction and indication; not a generic wellness protocol.

What replaces a hypothetical schedule

Sequence-level identity, regulatory status, human evidence, analytical limitations and unanswered safety questions. That information helps readers assess claims without pretending uncertainty is a protocol.

SOURCE DIRECTORY

Selected references / 1

Primary publications, regulator pages and official labels used in this edition. Links are intentionally shown in full for transparent checking.

[R1] Retatrutide for Obesity — TRIUMPH-1, New England Journal of Medicine (2026)
https://www.nejm.org/doi/full/10.1056/NEJMoa2604169

[R2] Eli Lilly: retatrutide remains investigational
https://www.lilly.com/news/stories/retatrutide-what-to-know

[R3] Tirzepatide Once Weekly for the Treatment of Obesity — SURMOUNT-1
https://www.nejm.org/doi/full/10.1056/NEJMoa2206038

[R4] DailyMed current prescribing information: Zepbound (tirzepatide)
https://www.dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=487cd7e7-434c-4925-99fa-aa80b1cc776b

[R5] Cagrilintide–Semaglutide in Adults with Overweight or Obesity — REDEFINE 1
https://www.nejm.org/doi/full/10.1056/NEJMoa2502081

[R6] Novo Nordisk: CagriSema FDA filing and status
https://www.novonordisk.com/news-and-media/news-and-ir-materials/news-details.html?id=916470

[R7] FDA: bulk substances that may present significant safety risks
https://www.fda.gov/drugs/human-drug-compounding/certain-bulk-drug-substances-use-compounding-may-present-significant-safety-risks

[R8] FDA Pharmacy Compounding Advisory Committee — July 2026 materials
https://www.fda.gov/advisory-committees/advisory-committee-calendar/july-23-24-2026-pharmacy-compounding-advisory-committee-meeting-announcement-07232026

[R9] Human evidence for BPC-157: systematic review (2026) — PubMed
https://pubmed.ncbi.nlm.nih.gov/42885452/

[R10] Thymosin beta-4 in a rat wound-healing model — PubMed
https://pubmed.ncbi.nlm.nih.gov/15037013/

[R11] FDA label: EGRIFTA WR (tesamorelin)
https://www.accessdata.fda.gov/drugsatfda_docs/label/2025/022505s020lbl.pdf

[R12] CJC-1295 pharmacodynamic study — PubMed
https://pubmed.ncbi.nlm.nih.gov/16352683/

SOURCE DIRECTORY

Selected references / 2

Primary publications, regulator pages and official labels used in this edition. Links are intentionally shown in full for transparent checking.

[R13] CJC-1295 and GH pulsatility — PubMed
https://pubmed.ncbi.nlm.nih.gov/17018654/

[R14] Ipamorelin pharmacokinetics — PubMed
https://pubmed.ncbi.nlm.nih.gov/10496658/

[R15] Ipamorelin postoperative ileus trial — PubMed
https://pubmed.ncbi.nlm.nih.gov/25331030/

[R16] FDA accelerated approval: Forzinity (elamipretide)
https://www.fda.gov/news-events/press-announcements/fda-grants-accelerated-approval-first-treatment-barth-syndrome

[R17] MOTS-c and exercise physiology — PubMed
https://pubmed.ncbi.nlm.nih.gov/34351816/

[R18] ClinicalTrials.gov: CB4211 analogue study
https://clinicaltrials.gov/study/NCT03998514

[R19] FDA KPV compounding review
https://www.fda.gov/media/193773/download

[R20] FDA PCAC materials: thymosin alpha-1
https://www.fda.gov/advisory-committees/advisory-committee-calendar/october-29-2024-pharmacy-compounding-advisory-committee-meeting-announcement-10292024

[R21] FDA: understanding the risks of compounded drugs
https://www.fda.gov/drugs/human-drug-compounding/compounding-and-fda-questions-and-answers

[R22] FDA: compounding risk alerts
https://www.fda.gov/drugs/human-drug-compounding/compounding-risk-alerts

[R23] Body composition changes with tirzepatide — SURMOUNT-1 substudy
https://pubmed.ncbi.nlm.nih.gov/39996356/

[R24] FDA MedWatch safety reporting
https://www.fda.gov/safety/medwatch-fda-safety-information-and-adverse-event-reporting-program

[R25] FDA label: WEGOVY injection (semaglutide), revised 2026
https://www.accessdata.fda.gov/drugsatfda_docs/label/2026/215256s033lbl.pdf

LIVE SOURCES

Regulatory status, labels and trial records can change. Recheck the linked source before publication, clinical discussion or purchasing decisions.

AEVANOVA

VERIFY THE CLAIM.
THEN VERIFY THE VIAL.

Evidence and product quality are separate questions.

AEVANOVA is building a research hub for evidence summaries, batch-linked verification and analytical literacy — without turning uncertainty into marketing.

CONTINUE THE RESEARCH

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