SOURCE PACKET

Retatrutide

Version 1.0

Summary

Retatrutide is Eli Lilly's investigational triple agonist: one peptide engineered to activate GIP, GLP-1, and glucagon receptors at the same time. Phase 2 trials in obesity and type 2 diabetes reported some of the largest weight-loss numbers published for a metabolic drug, and phase 3 programs are now reporting. None of it has produced an approved product anywhere. Vials sold online as RETA are not the verified study drug used in Lilly's trials.

Canonical article
https://peptides.media/peptides/retatrutide

Quick Answer

Retatrutide overview

Retatrutide is Eli Lilly's investigational triple agonist: one peptide engineered to activate GIP, GLP-1, and glucagon receptors at the same time. Phase 2 trials in obesity and type 2 diabetes reported some of the largest weight-loss numbers published for a metabolic drug, and phase 3 programs are now reporting. None of it has produced an approved product anywhere. Vials sold online as RETA are not the verified study drug used in Lilly's trials.

Retatrutide in Lilly's trials is a controlled study drug, not a retatrutide-labeled research vial from the internet. Trial results tell us what happened with the studied molecule in monitored settings. A retail RETA vial still needs identity, sterility, stability, storage, handling, and quality documentation.

The retatrutide trial results are real and large, and they belong to Lilly's controlled study drug. No approved retatrutide exists, so products sold as RETA outside trials raise identity and quality questions the trial data cannot answer.

What is it?

Retatrutide, also LY3437943, is a once-weekly investigational peptide that activates GIP, GLP-1, and glucagon receptors. The glucagon component is what separates it from tirzepatide on paper.

Why do people talk about it?

The size of the numbers: peer-reviewed phase 2 trials in obesity and type 2 diabetes, plus sponsor phase 3 updates reporting large average weight loss. That reputation then gets attached to gray-market vials that were never part of any trial.

What do studies actually use?

Subcutaneous retatrutide in dose-ranging arms, with public sources describing 4 mg, 9 mg, and 12 mg arms over 40 to 80 week windows depending on the trial. A trial arm is a description of a monitored experiment, not a schedule to copy.

What does the online market get wrong?

It sells trial results as if they transfer to the vial in the listing. A vendor label, a COA, or a forum log still has to establish identity, assay, sterility, endotoxin control, storage, and chain of custody before trial data mean anything for that product.

What is still unsettled?

The final label, rare side effects, long-term safety in broad use, body-composition effects like fat mass versus lean mass, and who the drug suits. Alongside those, the standing gray-market problem: no non-trial product has verified identity, sterility, stability, storage, or handling.

What is the bottom line?

Keep three things separate: Lilly's trial retatrutide, the online RETA market, and whatever product may eventually be approved. The evidence lives with the first, the risk lives with the second, and the third does not exist yet.

Evidence Snapshot

Best-supported use

Weight and diabetes trial results

Peer-reviewed phase 2 data exist for obesity and type 2 diabetes, and a 2026 phase 3 type 2 diabetes publication adds controlled late-stage evidence.

Evidence type: strong

Source IDs: retatrutide_nejm_obesity_phase2_2023, retatrutide_lancet_t2d_phase2_2023, retatrutide_lancet_transcend_t2d1_phase3_2026

https://pubmed.ncbi.nlm.nih.gov/37366315/
https://pubmed.ncbi.nlm.nih.gov/37385280/
https://pubmed.ncbi.nlm.nih.gov/42250575/

Obesity phase 3 status

Important, but still not final labeling

TRIUMPH-1 is registered, and sponsor topline/update material is public. That matters for the obesity story, but it is not a final FDA label or a completed regulator-reviewed prescribing package.

Evidence type: moderate

Source IDs: retatrutide_ctgov_triumph1_nct05929066, retatrutide_lilly_triumph1_topline_2026, retatrutide_lilly_ada_update_2026

https://clinicaltrials.gov/study/NCT05929066
https://investor.lilly.com/news-releases/news-release-details/lillys-triple-agonist-retatrutide-delivered-powerful-weight-loss
https://investor.lilly.com/news-releases/news-release-details/lillys-triple-agonist-retatrutide-drove-substantial-improvements

Long-term safety data

Still developing

Gastrointestinal events are the clearest tolerability theme in public reporting. Longer-term safety, rare events, discontinuation patterns, and final contraindication language remain less settled.

Evidence type: caution

Source IDs: retatrutide_nejm_obesity_phase2_2023, retatrutide_lancet_t2d_phase2_2023, retatrutide_lancet_transcend_t2d1_phase3_2026

https://pubmed.ncbi.nlm.nih.gov/37366315/
https://pubmed.ncbi.nlm.nih.gov/37385280/
https://pubmed.ncbi.nlm.nih.gov/42250575/

Regulatory status

Investigational / not FDA-approved

The FDA UNII entry identifies the substance. It is not a drug approval or prescribing label.

Evidence type: caution

Source IDs: retatrutide_fda_unii_nop2y096gv, fda_glp1_solution_retatrutide_warning_2025, fda_gram_peptides_retatrutide_warning_2026

https://precision.fda.gov/uniisearch/srs/unii/nop2y096gv
https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/glp-1-solution-715883-09092025
https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/gram-peptides-721806-03312026

Product-quality risk

High outside trials

FDA warning letters have named online retatrutide products as unapproved new-drug concerns. Product identity, batch quality, and contamination risk need separate checking before the trial data mean anything for a specific vial.

Evidence type: risk

Source IDs: fda_xcel_research_retatrutide_warning_2024, fda_prime_peptides_retatrutide_warning_2024, fda_glp1_solution_retatrutide_warning_2025, fda_gram_peptides_retatrutide_warning_2026

https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/xcel-research-llc-694608-12102024
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https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/glp-1-solution-715883-09092025
https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/gram-peptides-721806-03312026

Claims Vs Evidence

Retatrutide causes major weight loss.

Human evidence: Supported in clinical development. The human data include a peer-reviewed phase 2 obesity trial and phase 3 obesity sponsor reporting.

Mechanistic evidence: Triple receptor activity gives a plausible metabolic rationale, but the trial outcomes matter more than receptor theory.

Anecdotal evidence: Online discussion repeats the weight-loss theme. Trials show the efficacy, dose context, monitoring, and longer-term risk. A non-trial vial also needs its own quality proof before the trial results mean much for that product.

Verdict: Supported for studied clinical-trial populations. Online products sold as RETA need evidence of the vial contents and how the product was handled.

Source IDs: retatrutide_nejm_obesity_phase2_2023, retatrutide_ctgov_triumph1_nct05929066, retatrutide_lilly_triumph1_topline_2026

https://pubmed.ncbi.nlm.nih.gov/37366315/
https://clinicaltrials.gov/study/NCT05929066
https://investor.lilly.com/news-releases/news-release-details/lillys-triple-agonist-retatrutide-delivered-powerful-weight-loss

Retatrutide is better than tirzepatide or semaglutide.

Human evidence: No completed head-to-head outcomes trial is available. Public comparisons mostly rely on separate trials with different designs, populations, and durations.

Mechanistic evidence: Adding glucagon receptor activity is scientifically important, but superiority still has to come from comparative outcomes, not receptor count.

Anecdotal evidence: This comparison is common online because the reported weight-loss numbers are large.

Verdict: Superiority is not established. Current comparisons are indirect until head-to-head evidence or regulator-reviewed comparative data exist.

Source IDs: retatrutide_nejm_obesity_phase2_2023, retatrutide_lilly_triumph1_topline_2026

https://pubmed.ncbi.nlm.nih.gov/37366315/
https://investor.lilly.com/news-releases/news-release-details/lillys-triple-agonist-retatrutide-delivered-powerful-weight-loss

Retatrutide improves blood sugar.

Human evidence: Supported in type 2 diabetes trials, including a peer-reviewed phase 2 trial and a 2026 phase 3 publication.

Mechanistic evidence: GIP and GLP-1 receptor activity fit the incretin rationale for glucose-dependent metabolic effects.

Anecdotal evidence: Online reports exist, but controlled diabetes trials carry this claim better than anecdotes.

Verdict: Supported in studied type 2 diabetes populations; final regulatory labeling is not available yet.

Source IDs: retatrutide_lancet_t2d_phase2_2023, retatrutide_lancet_transcend_t2d1_phase3_2026, retatrutide_ctgov_transcend_t2d1_nct06354660

https://pubmed.ncbi.nlm.nih.gov/37385280/
https://pubmed.ncbi.nlm.nih.gov/42250575/
https://clinicaltrials.gov/study/NCT06354660

Gray-market RETA is the same as trial retatrutide.

Human evidence: Clinical-trial sources cover Lilly's study material, not online products sold as RETA.

Mechanistic evidence: This is about identity, quality, sterility, and chain of custody, not receptor theory.

Anecdotal evidence: Vendor COAs, purity claims, and social buzz leave equivalence to controlled clinical-development material unresolved.

Verdict: No. Trial data describe Lilly's study drug; a retail vial needs separate proof of identity, handling, and quality.

Source IDs: fda_xcel_research_retatrutide_warning_2024, fda_prime_peptides_retatrutide_warning_2024, fda_glp1_solution_retatrutide_warning_2025, fda_gram_peptides_retatrutide_warning_2026

https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/xcel-research-llc-694608-12102024

https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/prime-vitality-inc-dba-prime-peptides-695156-12102024

https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/glp-1-solution-715883-09092025

https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/gram-peptides-721806-03312026

Retatrutide is already an approved medicine.

Human evidence: Public regulatory material treats retatrutide as investigational. The FDA UNII entry identifies the substance, but it is not an approval document.

Mechanistic evidence: Triple-receptor activity explains the metabolic interest, but approval still depends on a completed regulatory review.

Anecdotal evidence: Some online discussion speaks as if availability equals approval, which is not how drug authorization works.

Verdict: An approval claim needs a current FDA label, EMA EPAR, or comparable authorization document.

Source IDs: retatrutide_fda_unii_nop2y096gv, fda_glp1_solution_retatrutide_warning_2025, fda_gram_peptides_retatrutide_warning_2026

https://precision.fda.gov/uniisearch/srs/unii/nop2y096gv

https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/glp-1-solution-715883-09092025

https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/gram-peptides-721806-03312026

Reader Bottom Line

If you just heard the name

Retatrutide is a legitimate drug candidate in Lilly's pipeline, and RETA sold online is not that drug. The big numbers come from monitored trials, not from anything currently for sale.

If you are comparing metabolic peptides

The controlled human data are stronger than almost any online peptide claim, and they still leave regulatory status, long-term safety, product authenticity, and batch quality open. Headline weight-loss figures do not vouch for a vial.

Primary evidence hierarchy

Start with the peer-reviewed phase 2 trials and the 2026 phase 3 diabetes publication. Registry entries, sponsor updates, FDA warning letters, and chemistry records answer the development, regulatory, and identity questions around them.

What It Is

What Retatrutide is

Retatrutide is LY3437943, a 39-amino-acid modified peptide engineered as a triple agonist at GIP, GLP-1, and glucagon receptors. The glucagon arm is meant to add energy-expenditure and substrate-mobilization biology on top of the incretin effects that made GLP-1 and dual agonists famous.

What Retatrutide is

On paper that puts it a step beyond both GLP-1-only drugs and dual agonists. Whether the step is a clinical advantage is a question for head-to-head trials, and no completed one exists.

What Retatrutide is

Public discussion runs on two tracks that never meet: a controlled Lilly program with peer-reviewed results, and an off-trial RETA market that borrows the program's vocabulary while leaving identity, handling, and quality unanswered.

Retatrutide in real-world discussion

Most retatrutide talk is comparison talk: whether it will beat tirzepatide or semaglutide, and whether the weight-loss signal is as large as it looks. Those comparisons stay indirect until head-to-head data exist.

Evidence type: real-world-reported

Retatrutide in real-world discussion

The second theme is access: research-use RETA listings, community titration logs, COA screenshots. None of that answers the batch questions, identity, sterility, stability, storage, and handling, that decide what is actually being injected.

Evidence type: real-world-reported

Use Patterns

Use patterns

Retatrutide use descriptions get confusing because trial schedules, registry entries, vendor pages, and forum posts are talking about different things. Trials and registries describe once-weekly subcutaneous study arms. Gray-market discussion often borrows that language while leaving the practical parts unclear: what is in the vial, how the batch was handled, who is monitoring the person, and how any titration is being decided.

Phase 2 obesity and overweight trial

Purpose: Weight-loss signal in adults with obesity or overweight without diabetes

Context: Randomized phase 2 clinical trial

Route: Subcutaneous

Amount: Dose-ranging study including arms up to 12 mg

Frequency: Once weekly in the trial context

Duration: 48 weeks

This peer-reviewed obesity trial shows the controlled regimen, follow-up, and adverse-event monitoring.

Evidence type: study-reported

Source IDs: retatrutide_nejm_obesity_phase2_2023

https://pubmed.ncbi.nlm.nih.gov/37366315/

Phase 2 type 2 diabetes trial

Purpose: Glycemic and weight-effect evidence in type 2 diabetes

Context: Randomized, double-blind, placebo and active-controlled phase 2 trial

Route: Subcutaneous

Amount: Dose-ranging study with arm-level titration in the full trial report

Frequency: Once weekly in the trial context

Duration: Arm-specific titration and timing are reported in the trial table

The diabetes population and comparator design matter as much as the dose. The arm-level titration is in the full report; pulling it into a simple schedule would make it look easier to copy than it is.

Evidence type: study-reported

Source IDs: retatrutide_lancet_t2d_phase2_2023

https://pubmed.ncbi.nlm.nih.gov/37385280/

TRIUMPH-1 phase 3 obesity program

Purpose: Phase 3 obesity and overweight evidence

Context: ClinicalTrials.gov registry plus sponsor topline and update sources

Route: Subcutaneous

Amount: Public sponsor reporting describes 4 mg, 9 mg, and 12 mg arms

Frequency: Once weekly in the phase 3 trial context

Duration: 80 weeks in public sponsor reporting

The obesity phase 3 update is important, but final peer-reviewed publication and regulator-reviewed labeling are still needed.

Evidence type: study-reported

Source IDs: retatrutide_ctgov_triumph1_nct05929066, retatrutide_lilly_triumph1_topline_2026, retatrutide_lilly_ada_update_2026

https://clinicaltrials.gov/study/NCT05929066
https://investor.lilly.com/news-releases/news-release-details/lillys-triple-agonist-retatrutide-delivered-powerful-weight-loss
https://investor.lilly.com/news-releases/news-release-details/lillys-triple-agonist-retatrutide-drove-substantial-improvements

TRANSCEND-T2D-1 phase 3 diabetes program

Purpose: A1C and body-weight effects in type 2 diabetes

Context: ClinicalTrials.gov registry plus 2026 peer-reviewed phase 3 publication

Route: Subcutaneous

Amount: Public sources describe 4 mg, 9 mg, and 12 mg arms

Frequency: Once weekly in the phase 3 trial context

Duration: 40 weeks

This adds late-stage human diabetes data, but it is still not an FDA prescribing label. It also leaves the identity, sterility, and handling of compounded or gray-market exposure unanswered.

Evidence type: study-reported

Source IDs: retatrutide_lancet_transcend_t2d1_phase3_2026, retatrutide_ctgov_transcend_t2d1_nct06354660, retatrutide_lilly_transcend_t2d1_topline_2026

https://pubmed.ncbi.nlm.nih.gov/42250575/
https://clinicaltrials.gov/study/NCT06354660
https://investor.lilly.com/news-releases/news-release-details/lillys-triple-agonist-retatrutide-demonstrated-significant

Gray-market and forum triple-agonist use

Purpose: Weight loss and metabolic discussion

Context: Vendor listings, forum logs, and community titration reports

Route: Subcutaneous injection

Amount: Community reports commonly describe 1 to 4 mg weekly, often starting near 0.5 to 1 mg and titrating upward every 2 to 4 weeks. Some community logs describe 8 to 12 mg weekly, loosely mirroring the higher trial arms.

Frequency: Once weekly, occasionally split into two administrations per week in community reports

Duration: Multi-month titration runs, commonly 12 to 24 weeks in community logs

Retatrutide has no approved product anywhere, so every real-world vial is unverified material. FDA has sent warning letters to online retatrutide sellers. Community practice loosely imitates phase 2 titration schedules without the trial monitoring. Shared here as context, not instruction.

Evidence type: real-world-reported

Trial-schedule spillover discussion

Purpose: Comparing community schedules to the phase 2 design

Context: Forums and protocol blogs

Route: Subcutaneous injection

Amount: Trial arms used weekly doses titrated to 1, 4, 8, or 12 mg, and community discussion references these arms directly

Frequency: Once weekly in the referenced trial design

Duration: The cited trial ran 48 weeks; community runs are usually shorter

Referencing a trial arm is not the same as reproducing it. The trial used verified drug, defined titration steps, and safety monitoring that gray-market use lacks.

Evidence type: real-world-reported

Variables that change interpretation

Sources matter: peer-reviewed trials describe efficacy, sponsor updates flag program status, registry entries define study arms, FDA warning letters show enforcement risk, and forum posts show demand or confusion.

Route: trials describe subcutaneous retatrutide under controlled development; online route claims say little about product quality.

Amount: public study arms such as 4 mg, 9 mg, and 12 mg are trial details tied to named sources.

Duration: 40-, 48-, and 80-week windows belong to specific trials and updates, not to a universal retatrutide cycle.

What is in the vial: identity, assay, impurities, sterility, endotoxin, batch traceability, storage, and chain of custody matter before any product claim is taken seriously.

Human Data

Retatrutide human evidence summary

Retatrutide has more human data than nearly any unapproved peptide in circulation: peer-reviewed phase 2 trials in obesity and type 2 diabetes, a peer-reviewed phase 3 diabetes publication, and an obesity phase 3 program backed by registry and sponsor topline reporting. The obesity phase 3 story still needs final publication and regulatory review. The record contains no head-to-head trial against semaglutide or tirzepatide, and nothing in it validates a non-trial product. FDA warning letters document the enforcement side of that gap.

Evidence type: human-evidence

Obesity and overweight phase 2

Population: Adults with obesity or overweight, without diabetes

Design: Randomized phase 2 clinical trial

Product context: Controlled clinical-development material

Main outcome: The phase 2 obesity trial gives substantial human weight-loss data in the

studied population.

Limitations: Mid-stage data, not an approval label, not a head-to-head comparison, and not validation of online products.

Evidence weight: Strong signal, investigational context

Evidence type: human-evidence

Source IDs: retatrutide_nejm_obesity_phase2_2023

https://pubmed.ncbi.nlm.nih.gov/37366315/

Type 2 diabetes phase 2

Population: Adults with type 2 diabetes

Design: Randomized, double-blind, placebo and active-controlled phase 2 trial

Product context: Controlled clinical-development material

Main outcome: The phase 2 diabetes trial gives human glycemic and weight-effect evidence in a

diabetes population.

Limitations: Phase 2 data do not give final label-level safety and use details.

Evidence weight: Moderate human evidence

Evidence type: human-evidence

Source IDs: retatrutide_lancet_t2d_phase2_2023

https://pubmed.ncbi.nlm.nih.gov/37385280/

TRANSCEND-T2D-1

Population: Adults with type 2 diabetes and inadequate glycemic control with diet and exercise

Design: Randomized, double-blind phase 3 trial with ClinicalTrials.gov registration

Product context: Controlled clinical-development material

Main outcome: TRANSCEND-T2D-1 gives phase 3 human evidence for A1C and body-weight effects in

type 2 diabetes.

Limitations: It is still not an FDA approval label, and it does not bring compounded, gray-market, or unsupervised retatrutide exposure into the trial-drug evidence.

Evidence weight: Phase 3 human evidence

Evidence type: human-evidence

Source IDs: retatrutide_lancet_transcend_t2d1_phase3_2026, retatrutide_ctgov_transcend_t2d1_nct06354660

https://pubmed.ncbi.nlm.nih.gov/42250575/

https://clinicaltrials.gov/study/NCT06354660

TRIUMPH-1

Population: Adults with obesity or overweight and at least one weight-related comorbidity, without diabetes

Design: Phase 3 registry plus sponsor topline/update sources

Product context: Controlled clinical-development program

Main outcome: Sponsor reporting describes large mean body-weight reductions and cardiometabolic marker changes.

Limitations: Sponsor topline material still needs final peer-reviewed publication and regulator-reviewed labeling.

Evidence weight: Important but not final

Evidence type: human-evidence

Source IDs: retatrutide_ctgov_triumph1_nct05929066, retatrutide_lilly_triumph1_topline_2026, retatrutide_lilly_ada_update_2026

https://clinicaltrials.gov/study/NCT05929066

https://investor.lilly.com/news-releases/news-release-details/lillys-triple-agonist-retatrutide-delivered-powerful-weight-loss

https://investor.lilly.com/news-releases/news-release-details/lillys-triple-agonist-retatrutide-drove-substantial-improvements

Online RETA product claims

Population: Consumers exposed to online or research-use retatrutide marketing

Design: Regulatory enforcement sources

Product context: Gray-market product claims, not controlled clinical material

Main outcome: FDA warning letters document authenticity and product-quality problems around online retatrutide claims.

Limitations: Warning letters document named enforcement concerns; they do not characterize every vendor or every batch.

Evidence weight: Quality-risk evidence, not an efficacy claim

Evidence type: human-evidence

Source IDs: fda_xcel_research_retatrutide_warning_2024, fda_prime_peptides_retatrutide_warning_2024, fda_glp1_solution_retatrutide_warning_2025, fda_gram_peptides_retatrutide_warning_2026

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https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/glp-1-solution-715883-09092025

https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/gram-peptides-721806-03312026

Safety

Retatrutide safety and unknowns

Gastrointestinal adverse events are the main tolerability theme across public trial reporting, including nausea, diarrhea, constipation, and vomiting.

Retatrutide safety and unknowns

Long-term broad-use safety, rare-event rates, approval-grade contraindications, body-composition outcomes, and discontinuation patterns remain less mature than the efficacy headlines.

Retatrutide safety and unknowns

Off-trial exposure adds a different risk layer: the product may not be clinical-trial material and may lack clinical monitoring, verified storage, verified sterility, or a regulator-reviewed product label.

Product Quality

Retatrutide product quality

Gray-market retatrutide matters because RETA is already sold online. Those listings are different from the clinical-trial drug.

Retatrutide product quality

FDA warning letters have named online retatrutide products as unapproved new-drug concerns. That does not mean every product is fake, but vendor claims and a PDF COA still have to prove identity, sterility, storage, and chain of custody.

Identity

The product has to be shown to be retatrutide, not merely labeled RETA.

Assay and impurities

Percent purity alone can miss the impurity profile and method quality that matter for modified peptides.

Sterility and endotoxin

A peptide identity claim says nothing about contamination risk.

Batch traceability

A COA is weak if it cannot be tied to the exact material, lot, storage, and chain of custody.

Storage and stability

A lab result from one point in time captures only the tested moment; shipping, storage, reconstitution, and handling can still change the material.

Regulatory context

A "research use" label is labeling context. It says nothing about lawful status, product quality, clinical monitoring, or patient fit.

Mechanism

Retatrutide mechanism

Retatrutide is designed to push three metabolic signaling systems at once: appetite and glucose signaling through GLP-1, incretin/metabolic signaling through GIP, and energy-substrate signaling through glucagon.

Evidence type: mechanism

Retatrutide mechanism detail

The GLP-1 component is the most familiar part. It fits the broader incretin-drug pattern of appetite and glucose-dependent insulin effects.

Evidence type: mechanism

Retatrutide mechanism detail

The GIP component is intended to add another incretin pathway rather than simply duplicate GLP-1 activity.

Evidence type: mechanism

Retatrutide mechanism detail

The glucagon receptor component is the less familiar part. It is meant to add energy-expenditure and substrate-mobilization biology, but the practical value has to be judged from trials, not receptor theory alone.

Evidence type: mechanism

Retatrutide mechanism detail

The same glucagon component is the proposed source of the larger phase 2 weight-loss numbers, the hepatic-fat effects, and the heart-rate signal seen in trials.

Evidence type: mechanism

Technical Dossier

Retatrutide technical dossier

Designation: Retatrutide / LY3437943 / LY-3437943

Class: Investigational GIP, GLP-1, and glucagon receptor agonist

Backbone sequence: YAQGTFTSDYSILLDKKAQAAFIEYLLEGGPSSGAPPPS

Molecular formula: C221H342N46O68

Molar mass: 4731 g/mol

Structure details: Modified peptide with lipidation and terminal chemistry

Route in trials: Subcutaneous

Regulatory status: Investigational; FDA warnings name online retatrutide as unapproved

Product-quality split: Trial drug and online RETA need separate quality checks

Half-life: About 6 days in phase 1 and 2 data, supporting the once-weekly trial schedules.

Sources

[retatrutide_nejm_obesity_phase2_2023] PubMed

Triple-Hormone-Receptor Agonist Retatrutide for Obesity - A Phase 2 Trial

https://pubmed.ncbi.nlm.nih.gov/37366315/

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Retatrutide, a GIP, GLP-1 and glucagon receptor agonist, for people with type 2 diabetes

https://pubmed.ncbi.nlm.nih.gov/37385280/

[retatrutide_lancet_transcend_t2d1_phase3_2026] PubMed

Efficacy and safety of retatrutide, a GIP, GLP-1, and glucagon receptor agonist, in people with type 2 diabetes and inadequate glycaemic control with diet and exercise (TRANSCEND-T2D-1)

https://pubmed.ncbi.nlm.nih.gov/42250575/

[retatrutide_ctgov_triumph1_nct05929066] ClinicalTrials.gov

TRIUMPH-1 ClinicalTrials.gov record

https://clinicaltrials.gov/study/NCT05929066

[retatrutide_ctgov_transcend_t2d1_nct06354660] ClinicalTrials.gov

TRANSCEND-T2D-1 ClinicalTrials.gov record

https://clinicaltrials.gov/study/NCT06354660

[retatrutide_lilly_triumph1_topline_2026] Other

Lilly's triple agonist, retatrutide, delivered powerful weight loss in pivotal Phase 3 obesity trial

https://investor.lilly.com/news-releases/news-release-details/lillys-triple-agonist-retatrutide-delivered-powerful-weight-loss

[retatrutide_lilly_transcend_t2d1_topline_2026] Other

Lilly's triple agonist, retatrutide, demonstrated significant reductions in A1C and weight in first Phase 3 trial for treatment of type 2 diabetes

https://investor.lilly.com/news-releases/news-release-details/lillys-triple-agonist-retatrutide-demonstrated-significant

[retatrutide_lilly_ada_update_2026] Other

Lilly's triple agonist, retatrutide, drove substantial improvements in weight, A1C, knee osteoarthritis pain, and obstructive sleep apnea

https://investor.lilly.com/news-releases/news-release-details/lillys-triple-agonist-retatrutide-drove-substantial-improvements

[fda_xcel_research_retatrutide_warning_2024] FDA

Xcel Research LLC warning letter

https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/xcel-research-llc-694608-12102024

[fda_prime_peptides_retatrutide_warning_2024] FDA

Prime Vitality, Inc. dba Prime Peptides warning letter

https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/prime-vitality-inc-dba-prime-peptides-695156-12102024

[fda_glp1_solution_retatrutide_warning_2025] FDA

GLP-1 Solution warning letter

https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/glp-1-solution-715883-09092025

[fda_gram_peptides_retatrutide_warning_2026] FDA

Gram Peptides warning letter

https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/gram-peptides-721806-03312026

[retatrutide_pubchem_cid_171390338] PubChem

PubChem Compound Summary for Retatrutide

https://pubchem.ncbi.nlm.nih.gov/compound/171390338

[retatrutide_fda_unii_nop2y096gv] FDA

UNII Search Service record for Retatrutide

https://precision.fda.gov/uniisearch/srs/unii/nop2y096gv

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