Peptide Research Quick Reference Guide

The 10 most researched compounds — 2026 Edition

What's inside this guide:

- 10 detailed compound profiles with research findings
- Purity & quality standards — what to look for in a supplier
- Reconstitution & storage protocols for research compounds
- 2026 FDA regulatory landscape explained

The 10 Most Researched Peptide Compounds

Part 1 of 2 — Compounds 1 through 5

1 BPC-157

Healing & Repair

Body Protection Compound-157 is a 15-amino acid peptide fragment derived from a protein found in gastric juice. It is one of the most extensively studied peptides in preclinical research, with over 100 published animal studies.

- Investigated for tendon, ligament, and muscle repair in rodent models
- Studied for gut mucosal healing and inflammatory bowel models
- Research suggests involvement in nitric oxide pathway activation
- Stable in gastric acid; studied via multiple administration routes in animal models

2 TB-500

Tissue Regeneration

Thymosin Beta-4 is a naturally occurring peptide present in nearly all human and animal cells. TB-500 is a synthetic version of the active region of Thymosin Beta-4, studied for its role in cell migration and tissue repair.

- Promotes actin regulation which is critical to cell structure and movement
- Studied for wound healing acceleration in animal models
- Research indicates potential anti-inflammatory effects in rodent studies
- Often studied alongside BPC-157 in healing-focused research protocols

3 Semaglutide

GLP-1 / Metabolic

A GLP-1 receptor agonist originally developed for type 2 diabetes research. Semaglutide has become one of the most studied metabolic compounds globally due to its effects on appetite regulation and weight management.

- Mimics GLP-1 hormone to regulate insulin secretion and glucagon suppression
- Slows gastric emptying — studied extensively for satiety signaling
- Long half-life (~7 days) enables weekly dosing protocols in clinical studies
- Subject of landmark trials including SUSTAIN and STEP study series

4 CJC-1295

Growth Hormone

A synthetic analogue of Growth Hormone Releasing Hormone (GHRH) with a DAC (Drug Affinity Complex) modification that significantly extends its half-life compared to native GHRH.

- Stimulates pituitary gland to release growth hormone in research models
- DAC modification extends active half-life to approximately 6-8 days in studies
- Commonly studied in conjunction with Ipamorelin for GH pulse amplification
- Research focus includes body composition, recovery, and IGF-1 elevation

5 Ipamorelin

Growth Hormone

A selective GH secretagogue and ghrelin receptor agonist. Known for its clean release profile — it stimulates GH release with minimal effect on cortisol or prolactin, distinguishing it from earlier GH secretagogues.

- Selective GH release without significant cortisol or prolactin elevation in studies
- Often paired with CJC-1295 for synergistic GH pulse research
- Shorter half-life (~2 hours) allows for more controlled dosing windows
- Studied for lean mass, recovery, and sleep quality research applications

The 10 Most Researched Peptide Compounds

Part 2 of 2 — Compounds 6 through 10

6 GHK-Cu

Anti-Aging / Skin

Glycine-Histidine-Lysine copper peptide. A naturally occurring tripeptide found in human plasma that binds copper ions. GHK-Cu has been studied extensively in dermatological research for its role in wound healing and skin regeneration.

- Stimulates collagen and elastin production in cell culture studies
- Studied for wound healing, scar reduction, and skin barrier restoration
- Research suggests antioxidant and anti-inflammatory signaling properties
- One of the most studied topical peptides with a strong published literature base

7 Thymosin Alpha-1

Immune Research

A 28-amino acid peptide naturally produced by the thymus gland. Thymosin Alpha-1 is one of the few research peptides with an extensive clinical history, having been studied in human trials for immune modulation.

- Studied for T-cell activation and maturation in immune system research
- Has been investigated in clinical settings for viral hepatitis and immune deficiency
- Research suggests modulation of inflammatory cytokine signaling pathways
- Commercially available as Zadaxin in some countries for immune support research

8 Sermorelin

Growth Hormone

A synthetic analogue of the first 29 amino acids of human GHRH. Sermorelin was the first GHRH analogue approved by the FDA for diagnostic use in growth hormone deficiency — giving it a clinical research history longer than most peptides.

- Stimulates natural pulsatile GH release by acting on pituitary somatotroph cells
- FDA-approved diagnostic history provides robust safety and pharmacokinetic data
- Studied for age-related GH decline, body composition, and sleep architecture
- Shorter half-life (~10-20 min) produces physiological GH pulses in research models

9 Epithalon

Longevity

A synthetic tetrapeptide (Ala-Glu-Asp-Gly) derived from the pineal gland peptide Epithalamin. Epithalon has been studied primarily in Russian longevity research since the 1980s, with a focus on telomere biology.

- Studied for telomerase activation and telomere elongation in cell models
- Research suggests effects on circadian rhythm regulation via pineal gland pathway
- Animal studies have explored lifespan extension in multiple species
- Research base is predominantly Eastern European — fewer Western clinical trials exist

10 AOD-9604

Metabolic

A modified fragment of human growth hormone (hGH176-191) that isolates the fat-metabolizing properties of hGH without the growth-promoting or diabetogenic effects. AOD-9604 has undergone Phase II and Phase III clinical trials.

- Studied for lipolysis stimulation and lipogenesis inhibition in adipose tissue
- Clinical trial history (Phase II/III) provides human safety and efficacy data
- Does not bind GH receptor — no impact on IGF-1 or insulin sensitivity in studies
- Research interest focuses on metabolic disorders and obesity-related applications

Understanding Purity & Quality

What every researcher needs to know before sourcing

When sourcing research peptides, quality documentation is everything. Unlike pharmaceutical drugs, research-use-only compounds are not FDA-regulated for purity or manufacturing standards. That means the responsibility falls entirely on the supplier — and on you as the researcher to know what to look for.

What Is a Certificate of Analysis (COA)?

A COA is a document from an **independent third-party laboratory** confirming the identity, purity, and composition of a compound. A COA from a supplier's own internal lab is not sufficient — it must come from an accredited, independent testing facility. Always verify the lab name on the COA is a recognized third-party facility, not the supplier itself.

Purity Standards at a Glance

98%+	**Research Grade** ✓ Always look for this
95–97%	**Acceptable** Review COA carefully before use
Below 95%	**Not Recommended** Not suitable for precision research

The Supplier Checklist

- ☑ **Third-party tested**
  Publicly accessible COA for every product — not internal lab results
- ☑ **Purity clearly stated**
  98% or higher purity level confirmed on COA documentation
- ☑ **Independent lab verification**
  Lab name on COA is a recognized accredited third-party facility
- ☑ **Research Use Only labeling**
  All products clearly labeled RUO — Not for Human Consumption
- ☑ **Lyophilized powder format**
  Freeze-dried for stability and extended shelf life
- ☑ **Cold-chain shipping**
  Documented cold-chain practices to preserve compound integrity
- ☑ **Transparent sourcing**
  Clear information on manufacturing origin and quality controls
- ☑ **Accessible support**
  Responsive customer support for COA requests and documentation

All BioStrata Research compounds are third-party tested with full COA documentation.
View all COAs at: biostrataresearch.com/coas/

Reconstitution & Storage Protocols

Standard laboratory handling for lyophilized research peptides

Most research peptides are supplied as lyophilized (freeze-dried) powder. Before use in a research setting, they must be reconstituted with an appropriate solvent. Proper handling, reconstitution, and storage directly impact compound stability and research accuracy.

What You Need for Reconstitution

- **Bacteriostatic Water (BAC Water)**
  Sterile water with 0.9% benzyl alcohol. The standard solvent for most research peptides. The benzyl alcohol acts as a preservative, extending the usable life of the reconstituted solution.
- **Sterile Water for Injection**
  Used when BAC water is not appropriate or when a preservative-free solution is required. Reconstituted solutions must be used within 24 hours or discarded.
- **Acetic Acid Solution (0.1%–1%)**
  Used for peptides that are poorly soluble in water alone (e.g., some GH peptides). Typically 0.1% to 1% acetic acid in sterile water.
- **Insulin Syringe (U-100)**
  Standard 1ml insulin syringes allow precise measurement of small volumes. Essential for accurate peptide solution preparation.
- **Alcohol Wipes**
  For sterilizing vial rubber stoppers before and after each needle insertion. Standard sterile technique.

Standard Reconstitution Procedure

1. **Allow the vial to reach room temperature**
   Remove from refrigerator and allow 15-30 minutes before handling to reduce thermal stress on the compound.
2. **Wipe the vial stopper with an alcohol wipe**
   Use a fresh alcohol wipe on the rubber stopper. Allow to air dry for 10-15 seconds before inserting needle.
3. **Draw the desired volume of BAC water**
   Common volumes: 1ml, 2ml, or 3ml depending on desired concentration. More solvent = lower concentration per unit volume.
4. **Inject solvent slowly along the vial wall**
   Never inject directly onto the lyophilized powder. Direct the stream along the glass wall and allow it to run down slowly.
5. **Gently swirl — never shake or vortex**
   Gently rotate the vial between your fingers until fully dissolved. Shaking or vortexing can degrade the peptide structure.
6. **Inspect the solution**
   The solution should be clear and free of particles. If cloudy or particulate, do not use. Note the date of reconstitution on the vial.

Storage Guidelines

Compound State	Storage Temp	Stability	Notes
Lyophilized (unopened)	2–8°C refrigerator	12–24 months	Keep away from direct light
Lyophilized (long-term)	-20°C freezer	24–36 months	Avoid repeated freeze-thaw cycles
Reconstituted solution	2–8°C refrigerator	28–30 days (with BAC water)	Label with reconstitution date
Reconstituted (sterile water)	2–8°C refrigerator	Use within 24 hours	No preservative — use promptly

The 2026 Peptide Regulatory Landscape

What every researcher needs to know right now

The regulatory environment for research peptides has shifted significantly in the past 18 months. This page provides a plain-language summary of where things stand as of early 2026 — including key FDA policy changes and what they mean for laboratory researchers.

The FDA Compounding Category Framework

Category 1
— Under Evaluation

May be compounded by licensed 503A/503B pharmacies while under FDA review. Examples: NAD+, Sermorelin, AOD-9604. These remain accessible through licensed compounding channels.

Category 2
— Restricted

Cannot be compounded by 503A pharmacies under current policy. As of early 2026, this list includes BPC-157, CJC-1295, TB-500, Ipamorelin, and approximately 15 others. Note: this does **not** affect research-use-only supply chains.

Category 3
— Insufficient Data

Cannot be used as active compounding ingredients due to lack of safety data. Research-use-only availability is unaffected.

What Changed in February 2026

On **February 27, 2026**, HHS Secretary RFK Jr. announced plans to move 14 of 19 Category 2 peptides back to Category 1 — potentially reopening access for licensed compounding pharmacies. As of the date of this publication, the FDA has not yet issued formal written guidance implementing this announcement. Researchers should monitor **biostrataresearch.com/latest-news/** for updates as they are published.

What This Means for Researchers

- **Reclassification ≠ FDA approval.** Category changes affect compounding pharmacy rules, not research-use-only supply.
- **RUO compounds remain legally available** for legitimate laboratory research regardless of compounding category status.
- **Enforcement is focused on suppliers** making human consumption or therapeutic claims — not on researchers purchasing for legitimate study.
- **Documentation matters.** Maintaining clear records of research purpose is standard best practice for any laboratory setting.

Stay current on regulatory developments:
BioStrata Research publishes regulatory updates as they happen.
biostrataresearch.com/latest-news/

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