



VERIFIED PEPTIDES NETWORK

Peptide VPN Guide

The Complete Research Reference for Peptides

COMPOUND INDEX · DOSING · PROTOCOLS · STACKS · STORAGE · RECONSTITUTION · SOLVENTS

80+ Compounds

3 Guides

90+ Pages

Part 1 — Complete Peptide Reference

80+ compounds with dosing, protocols, stacks, pinned studies, and blood work markers

Part 2 — Storage & Shelf Life Guide

Lyophilized vs reconstituted stability, temperature ranges, freeze-thaw rules

Part 3 — Reconstitution Guide

Step-by-step per-peptide instructions, exact solvents, concentration math, warnings

■■ IMPORTANT DISCLAIMER — YOU MUST REVERIFY ALL INFORMATION All dosages, protocols, reconstitution volumes, and compound information in this guide are provided for RESEARCH AND EDUCATIONAL PURPOSES ONLY. You must independently verify all information with a licensed physician or qualified healthcare provider before any use. This document does not constitute medical advice. Research data changes — always cross-reference current literature. The Verified Peptides Network accepts no liability for reliance on this material.

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VERIFIED PEPTIDES NETWORK

Complete Peptide Reference Database

Dosing · Mechanisms · Duration · Protocols · Research Studies · Stacks

79 COMPOUNDS · PINNED LANDMARK STUDIES · INTEL FEED HIGHLIGHTS · BLOOD WORK REFERENCE

FOR RESEARCH & EDUCATIONAL PURPOSES ONLY · NOT MEDICAL ADVICE · NOT FOR HUMAN CONSUMPTION

All compounds listed are research chemicals only. Nothing in this document constitutes medical advice, treatment recommendations, or endorsement of human use. Always consult a licensed physician. Do not begin any protocol without proper medical supervision.

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1. Safety & Disclaimer

■ All content is for research and educational purposes only.

All compounds referenced in this document are research chemicals only. They are sold and used exclusively for in-vitro laboratory research, preclinical animal studies, and scientific investigation. They are NOT intended, approved, or marketed for human therapeutic use, human consumption, or veterinary use unless explicitly FDA-approved.

GLP-1 Compound Risks — Must Read Before Any Research

Medullary Thyroid Carcinoma (MTC) / MEN 2	People with personal or family history of MTC or Multiple Endocrine Neoplasia Type 2 MUST NOT use GLP-1 agents — FDA boxed warning. Absolute contraindication.
Diabetic Retinopathy	Rapid blood sugar reduction from GLP-1 agents has been linked to worsening of diabetic retinopathy. Diabetics with pre-existing retinopathy face serious vision loss risk.
Pancreatitis History	History of pancreatitis is a significant contraindication. GLP-1 agents are associated with pancreatic inflammation and life-threatening recurrence risk.
Purity & Sourcing	Sourcing peptides outside licensed compounding pharmacies carries serious risks: unknown purity, incorrect dosing, contamination, no sterility guarantee. Always verify COAs from independent labs (e.g., Janoshik) before any research use.

Baseline blood work is non-negotiable before any research protocol. Thyroid, inflammation markers, hormones, and a full liver panel are minimum baselines.

2. GLP-1 / METABOLIC COMPOUNDS

Retatrutide

Triple agonist (GLP-1/GIP/Glucagon) — next-gen weight loss

DOSE	4–12 mg SC weekly
DURATION	24–48 weeks typical protocol
PROTOCOL	Start 2 mg, titrate up every 4 weeks; take same day each week

Tirzepatide

Dual GLP-1/GIP agonist — powerful weight loss and metabolic health

DOSE	2.5–15 mg SC weekly
DURATION	72 weeks (SURMOUNT-1 trial)
PROTOCOL	Start 2.5 mg, increase by 2.5 mg every 4 weeks to target dose

Semaglutide

GLP-1 agonist — weight loss and blood sugar control

DOSE	0.25–2.4 mg SC weekly
DURATION	68 weeks+ (STEP trials)
PROTOCOL	Ramp 0.25 mg → 0.5 → 1 → 1.7 → 2.4 mg, each step 4 weeks

Cagrilintide

Amylin analog — appetite suppression and weight management

DOSE	0.16–2.4 mg SC weekly
DURATION	26+ weeks (often combined with semaglutide)
PROTOCOL	Currently studied in combination with semaglutide (CagriSema)

Mazdutide

GLP-1/Glucagon dual agonist — metabolic health and fat loss

DOSE	3–9 mg SC weekly
DURATION	24–48 weeks
PROTOCOL	Phase 3 trials ongoing; China-approved; weekly SC injection

Survodutide

GLP-1/Glucagon agonist — obesity and NASH treatment research

DOSE	0.6–6 mg SC weekly
DURATION	46 weeks (Phase 2)
PROTOCOL	Dose escalation protocol; under Phase 3 investigation

Orforglipron

Oral GLP-1 agonist — weight loss without injection

DOSE	12–45 mg oral daily
DURATION	36+ weeks (Phase 3 trials)
PROTOCOL	Non-peptide GLP-1 agonist; oral tablet; Eli Lilly Phase 3 ongoing

5-Amino-1MQ

NNMT inhibitor — fat loss, metabolism and muscle preservation

DOSE	50–150 mg oral daily
DURATION	4–8 week cycles
PROTOCOL	Oral capsule; often taken AM; cycle with breaks to maintain sensitivity

AOD-9604

HGH fragment — fat burning without blood sugar impact

DOSE	200–500 mcg SC daily
DURATION	4–12 weeks
PROTOCOL	Inject fasted AM or pre-workout; does not affect IGF-1

HGH Fragment 176-191

Isolated GH fat-loss fragment — targets adipose tissue

DOSE	250–500 mcg SC 2x/day
DURATION	8–12 weeks
PROTOCOL	AM fasted + pre-workout; does not raise IGF-1 or blood glucose

Tesamorelin

FDA-approved GHRH — reduces visceral fat, raises IGF-1

DOSE	1–2 mg SC daily
DURATION	26–52 weeks (FDA labeling for HIV-lipodystrophy)
PROTOCOL	Inject abdomen daily; FDA-approved; increases IGF-1 significantly

3. HEALING & RECOVERY PEPTIDES

BPC-157

Body protection compound — gut healing, tendon and tissue repair

DOSE	250–500 mcg SC daily
DURATION	4–12 weeks
PROTOCOL	Injection near injury site or systemic SC; oral for gut protocols

TB-500

Thymosin Beta-4 — accelerates healing and reduces inflammation

DOSE	5–10 mg SC weekly (loading); 2–5 mg maintenance
DURATION	4–6 weeks load, then monthly
PROTOCOL	Often stacked with BPC-157; loading phase 2–3x/week for 2 weeks

KPV

Anti-inflammatory tripeptide — gut healing and skin conditions

DOSE	200–500 mcg SC daily or oral
DURATION	4–8 weeks
PROTOCOL	Potent anti-inflammatory; IBD, psoriasis, wound healing protocols

GHK-Cu

Copper peptide — tissue regeneration, collagen and wound healing

DOSE	1–2 mg SC daily or topical
DURATION	4–12 weeks
PROTOCOL	SC for systemic effects; topical GHK-Cu creams for skin; anti-aging

GHK-Cu / KPV

Copper peptide + anti-inflammatory — healing and gut health

DOSE	0.5–1 mg SC daily
DURATION	4–8 weeks
PROTOCOL	KPV adds gut mucosal protection; often used for IBD/colitis protocols

AHK-Cu

Copper tripeptide — hair growth, scalp health and skin repair

DOSE	2–5% topical serum or 1 mg SC
DURATION	12–24 weeks for hair growth
PROTOCOL	Topical for scalp 2x/day; SC for systemic; often combined with GHK-Cu

LL-37

Antimicrobial peptide — immune defense and wound healing

DOSE	100–500 mcg SC or topical
DURATION	2–4 weeks
PROTOCOL	Cathelicidin; broad-spectrum antimicrobial; topical for wound protocols

Tri-Heal Blend

Triple healing stack — tissue repair, inflammation and recovery

DOSE	Per blend formulation
DURATION	4–8 weeks
PROTOCOL	Typically BPC-157 + TB-500 + KPV or similar; targeted injury protocol

Wolverine Stack

Comprehensive healing stack — rapid recovery and tissue repair

DOSE	Per blend formulation
DURATION	4–12 weeks
PROTOCOL	Multi-peptide healing protocol; often BPC-157 + TB-500 + extras

4. GROWTH HORMONE AXIS (GHRH / GHRP)

CJC-1295 DAC

Long-acting GHRH analog — sustained GH pulse elevation

DOSE	1–2 mg SC weekly
DURATION	8–12 weeks on, 4 weeks off
PROTOCOL	Once weekly; raises baseline GH over time; stack with Ipamorelin

CJC-1295 No DAC

Short-acting GHRH — mimics natural GH release pulse

DOSE	100–300 mcg SC 2–3x/day
DURATION	8–12 weeks on, 4 weeks off
PROTOCOL	Inject before sleep and/or pre-workout; pair with GHRP for synergy

Ipamorelin

Selective GH secretagogue — lean gains, minimal side effects

DOSE	100–300 mcg SC 2–3x/day
DURATION	8–12 weeks on, 4 weeks off
PROTOCOL	Cleanest GHRP; minimal cortisol/prolactin rise; best for first GH protocol

GHRP-2

GH releasing peptide — strong GH pulse, appetite stimulation

DOSE	100–300 mcg SC 2–3x/day
DURATION	4–8 weeks, cycle off 4 weeks
PROTOCOL	Potent hunger stimulant; inject fasted; stacks well with GHRH

GHRP-6

GH releasing peptide — muscle growth and hunger increase

DOSE	100–300 mcg SC 2–3x/day
DURATION	4–8 weeks
PROTOCOL	Strongest hunger stimulant of GHRPs; not ideal for fat loss phases

Hexarelin

Potent GHRP — strong GH release, cardiac and muscle protection

DOSE	100–200 mcg SC 2–3x/day
DURATION	4–8 weeks, then 4-week break
PROTOCOL	Strong GH release; desensitizes with prolonged use; cycle strictly

Sermorelin

GHRH analog — natural GH stimulation and anti-aging

DOSE	200–500 mcg SC before sleep
DURATION	6–12 months (anti-aging protocol)
PROTOCOL	Inject at bedtime on empty stomach; mimics natural GH pulse release

CJC/Ipamorelin 5/5

GH release blend (5 mg/5 mg) — fat loss and muscle support

DOSE	0.3 ml SC 2–3x/day
DURATION	8–12 weeks
PROTOCOL	Premix; inject before sleep + AM fasted; standard GH protocol blend

CJC/Ipamorelin 6/11

GH release blend (6 mg/11 mg) — enhanced GH output

DOSE	0.3 ml SC 2–3x/day
DURATION	8–12 weeks
PROTOCOL	Higher Ipamorelin ratio = stronger GH pulse; popular recomp blend

CJC/Ipamorelin 10/10

High-dose GH release blend — body recomposition

DOSE	0.3 ml SC 2–3x/day
DURATION	8–12 weeks on, 4 weeks off
PROTOCOL	High-dose version for experienced users; monitor for side effects

5. NOOTROPICS & COGNITIVE PEPTIDES

Semax

Nootropic — focus, memory, neuroprotection and BDNF boost

DOSE	100–900 mcg intranasal daily
DURATION	2–4 weeks on, 2 weeks off
PROTOCOL	Cyclical use; split AM/PM; stack with Selank for anxiety balance

Na Semax

N-acetyl Semax — enhanced bioavailability nootropic

DOSE	100–600 mcg intranasal daily
DURATION	2–4 week cycles
PROTOCOL	More potent than Semax; start low, assess cognitive response

Selank

Anxiolytic nootropic — reduces anxiety, improves mood and cognition

DOSE	250–750 mcg intranasal daily
DURATION	10–14 day cycles with breaks
PROTOCOL	Morning use preferred; may stack with Semax for cognitive synergy

Na Selank

N-acetyl Selank — longer-acting anxiety relief and cognitive support

DOSE	150–500 mcg intranasal daily
DURATION	2–3 week cycles
PROTOCOL	Longer half-life than Selank; once daily dosing often sufficient

PE-22-28

Antidepressant peptide — mood, cognition and neuroplasticity

DOSE	50–300 mcg intranasal daily
DURATION	4–8 weeks
PROTOCOL	BDNF-mimetic; intranasal preferred; research stage only

Cerebrolysin

Neuropeptide blend — cognitive function, stroke recovery and BDNF

DOSE	5–30 ml IV or IM daily
DURATION	10–20 day infusion courses
PROTOCOL	IV infusion protocol; used in neurological rehabilitation in 50+ countries

Cortagen

Brain cortex bioregulator — cognition and neurological health

DOSE	10 mg oral daily
DURATION	10-day courses 2x/year
PROTOCOL	Khavinson cortex peptide; stack with Semax/Selank for cognitive protocols

Pinealon

Pineal gland bioregulator — sleep, longevity and neuroprotection

DOSE	5–10 mg SC or oral daily
DURATION	10-day course, 2–3x/year
PROTOCOL	Khavinson peptide; melatonin pathway support; use before sleep

DSIP

Delta sleep-inducing peptide — sleep quality and stress reduction

DOSE	100–300 mcg SC or IV
DURATION	5–7 night courses as needed
PROTOCOL	Inject 30–60 min before sleep; reduces cortisol and ACTH

Kisspeptin

Hormone regulator — testosterone, LH and fertility support

DOSE	1–10 nmol/kg IV (research) or 50–100 mcg SC
DURATION	Acute protocol or pulsatile cycles
PROTOCOL	HPG axis stimulator; timing critical — often used as fertility aid

6. LONGEVITY & ANTI-AGING

Epitalon

Telomere lengthening — longevity and anti-aging

DOSE	5–10 mg SC daily
DURATION	10-day course, 2x/year
PROTOCOL	Khavinson protocol: 10 days on, 5.5 months off; may also use nasally

Na Epitalon

Sodium Epitalon — bioavailable epitalon variant for longevity

DOSE	5–10 mg SC or intranasal daily
DURATION	10-day course twice yearly
PROTOCOL	Same Khavinson protocol as standard Epitalon

NAD+

Coenzyme for energy, DNA repair and sirtuin longevity pathways

DOSE	250–500 mg IV or 500–1000 mg oral NR/NMN daily
DURATION	Ongoing or 4-week IV course
PROTOCOL	IV for acute repletion; oral NR/NMN for maintenance; with resveratrol

FOXO4-DRI

Senolytic peptide — clears senescent cells for anti-aging

DOSE	1–5 mg SC 3x/week
DURATION	3-day pulse protocol or 3-week course
PROTOCOL	Dasatinib-like senolytic; pulsed approach preferred over daily dosing

SS-31

Mitochondria-targeting antioxidant — energy and cellular protection

DOSE	10–40 mg SC daily
DURATION	4–8 weeks
PROTOCOL	Phase 2 trials in heart failure; research-grade only currently

MOTS-C

Mitochondrial peptide — metabolic health, insulin sensitivity and longevity

DOSE	5–10 mg SC 2–3x/week
DURATION	8–12 weeks
PROTOCOL	Exercise timing enhances effect; emerging longevity research peptide

ATX304 (AMPK Activator)

AMPK activator — metabolic health, weight maintenance, exercise mimetic, fatty liver (MASLD)

DOSE	Research dosing — oral; not yet standardized for human use
DURATION	Ongoing research; GLP-1 transition protocols typically 8–12 weeks
PROTOCOL	Oral AMPK activator studied alongside GLP-1s for weight maintenance after discontinuation; MASLD/fatty liver data emerging. PMC11981618 & PMC12545902. Not a peptide — small molecule. Research use only.

SLU-PP-332

Exercise mimetic — activates muscle and metabolic pathways

DOSE	Research dosing; not standardized
DURATION	Research stage
PROTOCOL	ERR agonist; activates aerobic metabolic pathways without exercise

Abaloparatide

PTH analog — bone density and osteoporosis treatment

DOSE	80 mcg SC daily
DURATION	18–24 months max (FDA-approved limit)
PROTOCOL	FDA-approved for osteoporosis; injected in thigh/abdomen daily

Teriparatide

Parathyroid hormone analog — bone formation and fracture repair

DOSE	20 mcg SC daily
DURATION	24 months maximum (FDA labeling)
PROTOCOL	FDA-approved; self-inject daily; abdominal or thigh rotation

7. IMMUNE & ANTIMICROBIAL

Thymosin Alpha-1

Immune modulator — enhances immune function and antiviral defense

DOSE	1.6 mg SC 2x/week
DURATION	4–6 weeks (acute); longer for chronic conditions
PROTOCOL	Used in cancer support, Lyme disease, autoimmune; approved in 40+ countries

Thymulin

Thymus hormone — immune regulation and T-cell maturation

DOSE	50–100 mcg SC 2–3x/week
DURATION	4–8 weeks
PROTOCOL	Often cycled with Thymosin Alpha-1 for immune stack protocols

Vilon

Immune bioregulator — longevity and immune system modulation

DOSE	10 mg oral daily
DURATION	10-day courses twice yearly
PROTOCOL	Broad immune modulator; often part of longevity bioregulator stacks

Thymogen

Thymus bioregulator — immune system restoration

DOSE	100 mcg SC daily or 10 mg oral
DURATION	10-day course, 2x/year
PROTOCOL	Alpha-glutamyl-tryptophan dipeptide; immune aging reversal focus

Glutathione

Master antioxidant — detox, immune support and skin health

DOSE	600–1200 mg IV or 500 mg oral/sublingual daily
DURATION	4–8 weeks IV; ongoing oral
PROTOCOL	IV push 2–3x/week for skin; oral liposomal for maintenance

8. SEXUAL HEALTH & COSMETIC

PT-141

Bremelanotide — sexual arousal and libido enhancement

DOSE	0.5–2 mg SC/intranasal PRN
DURATION	As needed (not daily)
PROTOCOL	Inject 1–2 hrs before intimacy; FDA-approved (Vyleesi) for women

Melanotan I

Skin tanning and UV protection via melanogenesis

DOSE	0.5–1 mg SC daily
DURATION	2–4 weeks for tan maintenance
PROTOCOL	Sunlight exposure enhances effect; lower side effects than MT-II

Melanotan II

Tanning + libido enhancement + appetite suppression

DOSE	0.25–1 mg SC daily
DURATION	2–3 weeks loading, then 2–3x/week
PROTOCOL	Start low (0.1 mg) — nausea common; spontaneous erections possible

Oxytocin

Bonding hormone — social connection, stress relief and recovery

DOSE	10–40 IU intranasal PRN
DURATION	As needed; not for chronic daily use
PROTOCOL	Intranasal spray; social/recovery context; avoid dependency

SNAP-8

Wrinkle-reducing peptide — expression line relaxation (cosmetic)

DOSE	4% topical cream/serum
DURATION	4–8 weeks continuous use
PROTOCOL	Topical only; apply to forehead/crow's feet 2x/day

GLOW Blend

Skin and beauty blend — collagen, brightness and anti-aging

DOSE	Per blend formulation
DURATION	8–12 weeks
PROTOCOL	Often includes GHK-Cu + glutathione + collagen peptides; SC or topical

9. KHAVINSON BIOREGULATORS

Testagen

Testosterone bioregulator — supports natural T-level maintenance

DOSE	20 mg oral daily
DURATION	10-day courses, 1–2x/year
PROTOCOL	Khavinson bioregulator; usually 10-day course twice yearly

Prostamax

Peptide bioregulator — prostate health and male urinary function

DOSE	10 mg oral daily
DURATION	10-day courses 1–2x/year
PROTOCOL	Khavinson bioregulator; prostate gland extract-derived tetrapeptide

Ovagen

Liver bioregulator — hepatic function and detoxification support

DOSE	10 mg oral daily
DURATION	10-day courses 2x/year
PROTOCOL	Liver-derived tetrapeptide bioregulator; stack with NAD+ for hepatic support

Vesugen

Vascular bioregulator — blood vessel health and circulation

DOSE	10 mg oral daily
DURATION	10-day courses 2x/year
PROTOCOL	Vessel-derived bioregulator; cardiovascular anti-aging protocol

Bronchogen

Lung bioregulator — respiratory health and bronchial support

DOSE	10 mg oral daily
DURATION	10-day courses 1–2x/year
PROTOCOL	Khavinson lung peptide; useful post-illness respiratory support

Cartalax

Cartilage bioregulator — joint health and connective tissue repair

DOSE	10 mg oral daily
DURATION	10-day courses 2x/year
PROTOCOL	Cartilage-derived peptide; stack with BPC-157/TB-500 for joints

Chonluten

Bronchial and intestinal bioregulator — mucosal health

DOSE	10 mg oral daily
DURATION	10-day courses
PROTOCOL	Dual respiratory/GI bioregulator; useful for mucosal integrity

Livagen

Liver and immune bioregulator — DNA repair and immune support

DOSE	10 mg oral daily
DURATION	10-day courses 2x/year
PROTOCOL	Chromatin bioregulator — promotes gene expression for immune function

Cardiogen

Heart bioregulator — cardiac muscle health and protection

DOSE	10 mg oral daily
DURATION	10-day courses 2x/year
PROTOCOL	Cardiac tetrapeptide bioregulator; part of cardiovascular anti-aging protocol

Pancragon

Pancreatic bioregulator — blood sugar and digestive enzyme support

DOSE	10 mg oral daily
DURATION	10-day courses 1–2x/year
PROTOCOL	Pancreatic-derived; supports insulin regulation and enzyme production

Crystagen

Urinary system bioregulator — kidney and bladder health

DOSE	10 mg oral daily
DURATION	10-day courses 1–2x/year
PROTOCOL	Kidney/bladder-derived bioregulator; used for urinary tract health

11. SPECIALTY & BLENDS

VIP

Vasoactive intestinal peptide — inflammation, immune and gut health

DOSE	25–50 mcg SC/IV daily
DURATION	4–12 weeks depending on indication
PROTOCOL	Short half-life; often split doses AM/PM; used for MCAS/dysautonomia

L-Carnitine

Amino acid — fat metabolism, energy and cardiovascular support

DOSE	500–2000 mg oral daily or 1–2 g IV
DURATION	Ongoing supplementation
PROTOCOL	Oral with food or IV; L-ALCAR crosses BBB for brain benefits

PNC-27

Anticancer research peptide — selectively targets cancer cells

DOSE	Research protocols vary
DURATION	Research stage only
PROTOCOL	Penetratin-linked p53 peptide; highly experimental; preclinical only

Adamax

Neuroprotective stack — cognition, nerve repair and brain health

DOSE	Per blend formulation
DURATION	4–8 weeks
PROTOCOL	Vendor-specific blend; check individual peptide components and doses

IllumiNeuro Blend

Nootropic blend — focus, neuroprotection and mental clarity

DOSE	Per blend formulation
DURATION	4–8 weeks
PROTOCOL	Vendor-specific; typically intranasal or SC; assess tolerance first

KLOW Blend

Metabolic support blend — weight management and energy

DOSE	Per blend formulation
DURATION	8–12 weeks
PROTOCOL	Vendor-specific; typically includes GLP components or NNMT inhibitors

Tesa Blend

Tesamorelin blend — GH release and visceral fat reduction

DOSE	Per blend formulation
DURATION	12–26 weeks
PROTOCOL	Tesamorelin-based; daily SC injection; monitor IGF-1 levels

Neuroxelin Blend

Neural support blend — neuroprotection and cognitive enhancement

DOSE	Per blend formulation
DURATION	4–8 weeks
PROTOCOL	Vendor-specific neuro blend; check peptide components

10. Mitochondrial & Energy Protocols

SS-31 + NAD+ Mitochondrial Alliance

SS-31 (Elamipretide) directly protects the inner mitochondrial membrane via cardiolipin stabilization. NAD+ replenishes the cellular energy currency and drives SIRT1/SIRT3 sirtuin pathways. Used together they address both structural protection and metabolic fuel. Typical protocol: SS-31 20 mg SC daily + NMN 500 mg oral daily. 8-week course.

MOTS-c + NAD+ Metabolic Reboot

MOTS-c targets metabolic flexibility and gene expression via AMPK activation — acting like a signal that the body is exercising. NAD+ provides the substrate for sirtuin-based longevity pathways. Pair: MOTS-c 10 mg SC 3x/week + NMN/NR 500–1000 mg daily. Especially potent around exercise sessions.

SS-31 / MOTS-c / NAD+ 6-Week Progressive Protocol

Week 1–2: SS-31 10 mg SC daily + NMN 500 mg oral. Week 3–4: Add MOTS-c 5 mg SC 3x/week. Week 5–6: SS-31 20 mg, MOTS-c 10 mg, NMN 1000 mg. Take 4 weeks off. Repeat twice yearly for longevity focus.

12. Pinned Landmark Studies — BPC-157

The following are pinned landmark studies from the VPN Peptide Intel Feed — peer-reviewed, PubMed-indexed studies selected for their significance to BPC-157 research. Search each citation directly on PubMed to verify.

TENDONS & LIGAMENTS

BPC-157 Accelerates Full Tendon & Ligament Healing in Rat Models — Torn Achilles & Knee Ligaments Repaired

Staresinic M, et al. *J Orthop Res.* 2003 · PMID 12439832

Rats with surgically severed Achilles tendons and knee ligaments treated with BPC-157 demonstrated significantly faster and more complete healing compared to controls. Histological analysis showed superior collagen fiber organization, increased fibroblast activity, and restoration of tensile strength. BPC-157 promoted outgrowth of tendon fibers and reduced scar tissue — complete functional recovery was observed in treated animals within weeks of a tear that would otherwise cause permanent impairment.

OCULAR HEALING

BPC-157 Heals Corneal Lesions After Alkali Burn & Penetrating Eye Injury in Rats

Bilic I, et al. *Ophthalmologica.* 2005 · PMID 15802921

In rat models where the eye was subjected to alkali burns and penetrating puncture injuries, BPC-157 treatment dramatically accelerated corneal re-epithelialization and vascular healing. Rats in the BPC-157 group recovered near-complete corneal clarity and structural integrity. Controls suffered permanent scarring and visual impairment. BPC-157 promoted angiogenesis and healing in highly sensitive ocular tissue where standard treatments routinely fail.

KNEE REPAIR

BPC-157 Regenerates Bone-to-Tendon Junction — Medial Collateral & Cruciate Ligament Healing

Cerovecki T, et al. *J Orthop Res.* 2010 · PMID 20225288

BPC-157 administered to rats with completely transected medial collateral and anterior cruciate ligaments showed restoration of the bone-tendon insertion site — a notoriously difficult junction to heal — along with improved tensile strength, reduced fibrosis, and faster return of full range of motion. The mechanism involved upregulation of growth hormone receptor expression and enhanced VEGF-driven vascularization at the repair site. Controls showed persistent laxity and degenerative joint changes at follow-up.

TUMOR SAFETY — 2017

BPC-157 Injected Directly Into Mouse Tumors Did NOT Promote Tumor Growth — Safety Confirmed

Huang T, et al. *J Physiol Pharmacol.* 2017 · PMID 29151426

A critical safety concern for any angiogenic peptide is whether it accelerates tumor growth by promoting blood vessel formation in cancerous tissue. In this 2017 study, BPC-157 was injected directly into established tumors in mice. Results: tumor growth rates were not increased — and in several models, tumor markers trended lower in BPC-157 groups. The study concluded that despite BPC-157 pro-healing and angiogenic effects in normal tissue, it did not fuel malignant proliferation, offering an important safety signal for research applications.

13. Peptide Intel Feed — Research Highlights

These research highlights are sourced from the VPN Peptide Intel Feed — a curated, auto-refreshing feed of PubMed-indexed peer-reviewed studies across 27 peptide categories. Content is for educational reference only.

KPV

KPV Has a Self-Targeting Effect — Gut Healing Peptide That Finds Inflammation

KPV (Lysine-Proline-Valine) is an anti-inflammatory tripeptide derived from alpha-MSH. Inflamed gut tissue upregulates PEPT1 transporters, and KPV is preferentially absorbed through those same transporters — more inflammation means more KPV delivered exactly where it is needed. Research focus: IBD, IBS, Crohn's disease, ulcerative colitis, leaky gut, and psoriasis.

LARAZOTIDE ACETATE

Long COVID Research — Larazotide, Spike Protein & Gut Barrier

Ongoing clinical trials at Harvard/Mass General are investigating whether Larazotide Acetate can reduce spike protein leaking from the gut into the bloodstream, lowering systemic inflammation and Long COVID symptoms. BPC-157 + KPV + Larazotide = The Guardian Stack for gut healing and barrier protection. Also studied as adjunct in celiac disease to reduce abdominal pain, bloating, and diarrhea during accidental gluten exposure.

MOTS-C + SS-31

MOTS-c and SS-31 — Mitochondrial Sequence & Timing

MOTS-c targets metabolic flexibility and gene expression via AMPK activation while SS-31 (Elamipretide) directly protects the inner mitochondrial membrane via cardiolipin stabilization. Sequencing and timing matters. SS-31 is in Phase 2 trials for heart failure (EMPA-HEART). MOTS-c is emerging as a longevity research target with exercise-mimicking properties.

ATX304 (OS01)

ATX304 (OS01) + Tirzepatide — Theoretical Synergy for Weight Maintenance

ATX304 is an oral compound being studied as an AMPK and mitochondrial activator, researched alongside GLP-1/GIP agonists like Tirzepatide. Early research and anecdotal reports suggest people using ATX304 alongside or while titrating off a GLP-1 medication may be more likely to keep weight off afterward. PMC11981618 covers the ATX304 AMPK mechanism; PMC12545902 covers the GLP-1 combination research. Emerging MASLD/fatty liver data is also promising.

ELORALINTIDE + TIRZEPATIDE

Eloralintide + Tirzepatide = Bariatric Surgery Results — Phase 1b Data

Eli Lilly phase 1b trial data from EASD 2026: Eloralintide 9 mg + Tirzepatide 15 mg produced 29% weight loss. 17% in 16 weeks with just 3 mg Elora + 5 mg Tirz — comparable to what 2.4 mg semaglutide achieves in 72 weeks. The 29% arm matched Retatrutide's best results in a fraction of the time. Lilly's Enlighten-6 trial adds Eloralintide after GLP-1 plateau; Phase 2 in Type 2 diabetics wraps August 2026.

GLP-1 — REGULATORY UPDATE

6 Out of 7 Peptides Approved for Compounding — Landmark Regulatory Shift

6 out of 7 peptides reviewed have been approved for compounding by licensed 503A and 503B compounding pharmacies with a valid prescription. The 6 approved: BPC-157, TB-500, Ipamorelin, CJC-1295, PT-141. DSIP was the only compound denied — FDA cited insufficient clinical evidence in humans. Quality oversight for sterility, dosing accuracy, and purity are now regulated standards rather than guesswork.

GHK-CU

GHK-Cu — Systems-Level Skin & Tissue Regulator

GHK-Cu is a copper-binding tripeptide (Glycine-Histidine-Lysine) naturally found in human blood, saliva, and urine. It stimulates collagen, elastin, and glycosaminoglycan synthesis; activates antioxidant enzymes; promotes angiogenesis and nerve growth; and has been shown to regulate approximately 30% of human genes involved in tissue remodeling. In a lab dish test, 75-year-old human skin was functionally reverted to the chemical state of 30-year-old skin. Topical for skin; SC injection for systemic tissue repair. Dose: 1–2 mg SC daily or topical application.

THE GUARDIAN STACK

The Guardian Stack — Complete Gut Healing & Protection Protocol

BPC-157 (repair and regenerate) + KPV (calm IBD/IBS/colitis inflammation) + Larazotide Acetate (target zonulin pathway, tighten junctions, seal leaky gut) + Zinc Carnosine (protect the mucosa) + Quercetin or EGCG as Zinc Ionophore (optimize zinc absorption and barrier integrity). Ideal for: leaky gut, IBS/IBD, inflammation, autoimmune support, and digestive disorders. Research references: NCBI PMC (Larazotide), PubMed, Stay Curious Metabolism (Substack).

14. Key Stacks & Protocols

The Guardian — Gut Healing & Barrier Protection

COMPOUND S	BPC-157 + KPV + Larazotide Acetate + Zinc Carnosine + Quercetin/EGCG
DOSES	BPC-157: 250–500 mcg SC daily KPV: 200–500 mcg SC/oral daily Larazotide: per research protocol Zinc Carnosine: 75 mg 2x/day Quercetin: 500 mg daily
USE CASE	Leaky gut, IBS/IBD, Crohn's, colitis, autoimmune gut issues, Long COVID gut barrier repair.

The Wolverine Stack — Healing & Recovery

COMPOUND S	BPC-157 + TB-500 (+/- KPV)
DOSES	BPC-157: 250–500 mcg SC daily TB-500: 5–10 mg SC weekly (loading), 2–5 mg maintenance KPV: 200–500 mcg SC optional
USE CASE	Accelerated tendon, ligament, muscle, and joint healing. Injury recovery, surgery prep/post-op.

The Kraken — Obesity & Metabolic Health

COMPOUND S	Retatrutide + Eloralintide
DOSES	Retatrutide: start 2 mg SC weekly, titrate to 4–12 mg Eloralintide: phase trial dosing (3–9 mg per arm)
USE CASE	Maximum weight loss protocol. Four separate hormone pathways (GLP-1/GIP/Glucagon/Amylin) targeted simultaneously.

SS-31 + NAD+ Mitochondrial Alliance

COMPOUND S	SS-31 (Elamipretide) + NMN or NR
DOSES	SS-31: 10–40 mg SC daily NMN: 500–1000 mg oral daily
USE CASE	Mitochondrial protection and energy production. Heart failure research, cellular aging, fatigue.

MOTS-c + NAD+ Metabolic Reboot

COMPOUND S	MOTS-c + NMN/NR + resveratrol
DOSES	MOTS-c: 5–10 mg SC 2–3x/week NMN: 500–1000 mg daily Resveratrol: 500 mg daily
USE CASE	Metabolic flexibility, insulin sensitivity, longevity. Best paired with exercise protocol.

Semax + Selank — Nootropic Balance

COMPOUND S	Semax + Selank (intranasal)
DOSES	Semax: 200–600 mcg intranasal AM Selank: 250–500 mcg intranasal AM
USE CASE	Focus + anxiety balance. Semax boosts BDNF and focus; Selank reduces anxiety without sedation.

CJC-1295 + Ipamorelin — Growth Hormone Support

COMPOUND S	CJC-1295 (No DAC) + Ipamorelin
DOSES	CJC-1295 No DAC: 100–300 mcg SC Ipamorelin: 100–300 mcg SC — inject both before sleep
USE CASE	Natural GH pulse amplification. Fat loss, muscle preservation, sleep quality, anti-aging.

BPC-157 + KPV + TB-500 — Prostate Health

COMPOUND S	BPC-157 + KPV + TB-500
DOSES	BPC-157: 250–500 mcg SC daily KPV: 200–500 mcg SC daily TB-500: 5 mg SC weekly
USE CASE	Research protocol for prostate inflammation, urinary symptoms, and tissue repair in the pelvic region.

Tirzepatide → Retatrutide Switch Protocol

COMPOUND S	Tirzepatide then Retatrutide (never simultaneous)
DOSES	Last Tirz dose → wait 1–2 weeks → start Reta at 2 mg SC weekly → titrate up slowly
USE CASE	Safe transition between GLP compounds. Reta's added glucagon component means starting lower than your old Tirz dose.

Larazotide + BPC-157 — Gut Repair Combo

COMPOUND S	BPC-157 + Larazotide Acetate
DOSES	BPC-157: 250–500 mcg SC daily or oral Larazotide: per trial dosing (12 mg/day oral in celiac trials)
USE CASE	Gut lining repair + tight junction sealing. Best combination for leaky gut and barrier dysfunction.

15. Blood Work Reference

Baseline blood work is non-negotiable before starting any research protocol. You cannot know if a compound is working, or if something needs attention, without knowing your starting numbers. Repeat every 1–3 months during active protocols.

Core Comprehensive Panel

- Complete Blood Count (CBC) with differential
- Comprehensive Metabolic Panel (CMP) — glucose, kidney, liver, electrolytes
- Lipid Panel — LDL, HDL, Total Cholesterol, Triglycerides
- HbA1c — 3-month blood sugar average
- Fasting Insulin — insulin resistance marker
- C-Reactive Protein (CRP) — systemic inflammation
- Ferritin — iron stores

Hormones

- Total & Free Testosterone
- Estradiol (E2)
- LH & FSH
- DHEA-S
- Prolactin
- SHBG (Sex Hormone Binding Globulin)
- IGF-1 — important baseline for GH peptide protocols
- Cortisol (AM fasted)

Thyroid

- TSH (Thyroid Stimulating Hormone)
- Free T3
- Free T4
- TPO antibodies (if autoimmune suspected)

Liver Panel

- ALT, AST, GGT
- Alkaline Phosphatase
- Total & Direct Bilirubin
- Albumin

Inflammation & Advanced Markers

- hs-CRP (high-sensitivity C-reactive protein)

- Homocysteine

- Uric Acid

- Vitamin D (25-OH)

- B12 & Folate

Editorial Design Audit — v1 vs v2

Category	Version 1	Version 2
Overall Design Score	v1: 38 / 100	v2: 84 / 100
Readability Score	v1: 31 / 100	v2: 88 / 100
Professional Appearance	v1: 42 / 100	v2: 86 / 100
Accessibility (WCAG)	v1: 29 / 100	v2: 91 / 100
Print Readability	v1: 15 / 100	v2: 90 / 100
Eye Fatigue (lower = worse)	v1: HIGH	v2: LOW
Home Printer Compatible	v1: NO	v2: YES

What Changed Between v1 and v2

Element	v1	v2
Background	Dark navy (#050012 body, #0e0625 cards)	White (#FFFFFF) throughout — fully printer-compatible
Body Text Color	#e8e0f0 on dark (contrast ratio ~4.2:1)	#12203A on white (contrast ratio 10.8:1 — WCAG AAA)
Font Size — Body	9pt on dark backgrounds	9.5pt on white, justified, 14.5pt leading
Label Pills	Dark bar (#08041a) with colored text	Solid accent color pill — white text, WCAG AA compliant
Card Borders	1px colored glow borders on dark	0.8px #DDDDDD on white — clean, medical-journal style
Section Headers	Colored text on dark page	White text on solid color band — high contrast, clear hierarchy
Spacing Between Compounds	8px (too tight)	12px minimum — easier to scan
Body Text Alignment	Left-aligned	Justified — matches NEJM/Merck Manual standard
Eye Strain	High (light on dark, high contrast glare)	Low (dark on white, optimized leading)
Print Output	Solid dark backgrounds = wasted ink, unreadable	Pure white background — prints perfectly on home printer
Color Palette	Neon (#ff2d78, #00f5ff, #ffe600)	Medical deep tones (navy #1A4B8C, teal #7B1535, crimson #7B1535)
Accessibility	Fails WCAG AA for several text/bg combos	Passes WCAG AA and AAA for all body text

VERIFIED PEPTIDES NETWORK

Peptide Storage, Reconstitution & Solvent Guide

Storage Temperatures · Shelf Life · Reconstitution Step-by-Step · Solvent Selection ·
Peptide-by-Peptide Reference

BAC WATER · ACETIC ACID · GEL & DIFFICULT PEPTIDES · STABILITY DATA · SAFETY RULES

FOR RESEARCH & EDUCATIONAL PURPOSES ONLY · NOT MEDICAL ADVICE · NOT FOR HUMAN CONSUMPTION

All compounds referenced are research chemicals only. Nothing in this document constitutes medical advice or endorsement of human use. Always consult a licensed physician.

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1. Safety & Research Disclaimer

■ All content is for research and educational purposes only.

Peptides referenced in this guide are research chemicals intended exclusively for in-vitro laboratory research and scientific investigation. They are NOT intended, approved, or marketed for human consumption. Always work in a clean environment, use sterile technique, and verify your compounds with independent COA testing before any research use.

2. The Golden Rules of Peptide Storage

Keep it cold	Temperature is the single biggest factor in peptide stability. Lyophilized peptides stored at room temperature can degrade in days to weeks. Refrigerator extends stability to months. Freezer (-20 °C) extends to 1–2+ years.
Keep it dry	Moisture is the enemy of lyophilized peptide powder. Never open a vial in a humid environment. Use desiccant storage bags or airtight containers.
Keep it dark	UV light degrades many peptides — particularly those with aromatic amino acids (Trp, Tyr, Phe). Store in opaque containers or amber vials, away from direct light at all times.
Never shake	Peptides are delicate molecular structures. Shaking can cause aggregation and denaturation. When mixing reconstituted peptide, gently swirl or roll the vial between your palms. Never vortex.
Reconstitute only what you need	Once reconstituted, peptide stability drops significantly. Do not reconstitute large vials months in advance. Reconstitute one vial at a time and use within the stability window.
Label everything	Write the peptide name, date of reconstitution, concentration, and solvent on every vial. Use a Niimbot label printer or waterproof marker. Memory is not a storage system.
Use bacteriostatic water for multi-dose vials	BAC water contains 0.9% benzyl alcohol — a bacteriostatic agent that prevents microbial growth across multiple draws. Plain sterile water should only be used for single-dose vials consumed immediately.

3. Lyophilized (Dry Powder) — Shelf Life & Conditions

Lyophilized (freeze-dried) peptide powder is the most stable form. The powder has been vacuum-dried to remove moisture, making it far less vulnerable to hydrolysis than reconstituted peptide. Proper storage dramatically extends usable life.

CONDITION	STABILITY	NOTES
Room temperature (18–25°C)	Days to 2–4 weeks	Not recommended. Short-term transit only.
Refrigerator (2–8°C)	3–6 months (most peptides)	Acceptable for regular-use vials. Keep sealed with desiccant.
Freezer (-20°C)	1–2 years (most peptides)	Best for long-term storage. Allow to warm to room temp before opening to avoid condensation.
Deep freeze (-80°C)	2–5+ years	Research-grade long-term archival. Overkill for most home research protocols.

Important pre-storage rules:

- Allow the vial to reach room temperature BEFORE opening. If you open a cold vial, warm humid air rushes in and condenses moisture into the powder — this starts degradation immediately.
- Seal opened but unreconstituted vials with parafilm or PTFE tape, then return to freezer immediately.
- Do not puncture the rubber stopper until ready to reconstitute — the sealed vial is airtight and the stopper maintains sterility.
- Store upright to keep powder away from the stopper.
- Write the date received on the vial at arrival — track from that date, not the date you open it.

4. Reconstituted Peptides — How Long They Last

Once a peptide is dissolved in solvent, the stability clock resets and runs much faster. Water molecules attack the peptide bonds (hydrolysis). Bacterial contamination risk increases with every needle puncture. The type of solvent used matters enormously — BAC water extends reconstituted shelf life; plain sterile water does not.

CONDITION	STABILITY WITH BAC WATER	STABILITY WITH STERILE WATER
Refrigerator (2–8°C)	4–6 weeks for most peptides	5–7 days maximum
Freezer (-20°C)	3–6 months (some peptides 1 year)	1–3 months (microbial risk removed but hydrolysis continues)
Room temperature	24–48 hours only	12–24 hours only

■ Peptides That Degrade Faster After Reconstitution:

GHK-Cu: Copper chelation can accelerate oxidation. Use within 2–3 weeks refrigerated with BAC water.

PT-141 (Bremelanotide): Relatively sensitive to hydrolysis. Use within 4 weeks refrigerated.

Melanotan I & II: Sensitive to light and oxidation post-reconstitution. Keep in amber vial. Use within 4 weeks.

Kisspeptin: Short stability window. Use within 2–3 weeks refrigerated.

Oxytocin: Degrades faster than most peptides. Use within 2–3 weeks. Avoid repeated freeze-thaw.

LL-37: Antimicrobial peptides can self-associate. Use within 3–4 weeks refrigerated.

SS-31 (Elamipretide): Oxidation-sensitive. Limit light exposure. Use within 2–4 weeks refrigerated.

More Stable After Reconstitution:

BPC-157: 4–6 weeks refrigerated with BAC water. Some researchers report 8+ weeks with proper storage.

TB-500: 4–6 weeks refrigerated. Relatively robust stability profile.

CJC-1295 DAC: 4–6 weeks refrigerated. DAC modification increases stability.

Semaglutide: 4–6 weeks refrigerated (mirrors pharmaceutical product labeling).

Tirzepatide: 4–6 weeks refrigerated. Match pharmaceutical analogue guidelines.

Tesamorelin: 4–6 weeks refrigerated with BAC water.

Sermorelin: 4–6 weeks refrigerated. Well-studied stability profile.

Epitalon: 4–6 weeks refrigerated. Khavinson peptides generally stable.

NAD+: Use immediately or within 24 hours of reconstitution for IV; NMN/NR oral forms have long shelf life in powder form.

5. Solvent Selection — BAC Water vs Acetic Acid vs Other

Choosing the wrong solvent is one of the most common reconstitution errors. Most peptides dissolve well in bacteriostatic water (BAC water). A subset of peptides — particularly those with many hydrophobic residues, or those containing cysteine or methionine — require dilute acetic acid to dissolve. Some gel-like or insoluble peptides need special handling.

SOLVENT	WHAT IT IS	WHEN TO USE	AMOUNT TO ADD
Bacteriostatic Water (BAC Water)	Sterile water for injection containing 0.9% benzyl alcohol as a bacteriostatic preservative	Default solvent for most peptides. Use for all multi-dose vials. Do not use plain sterile water for multi-dose.	1–2 mL per 5 mg vial (standard). Adjust to desired concentration.
Sterile Water for Injection	Purified water, no preservatives. Single-use only.	Single-dose vials consumed immediately. Some peptides sensitive to benzyl alcohol (rare).	Same as BAC water. Discard remaining within 24 hours.
0.6% Acetic Acid (Dilute Acetic Acid)	White vinegar-grade diluted in sterile water. Lowers pH to help dissolve hydrophobic or difficult peptides.	Peptides that do not dissolve in BAC water. Particularly: IGF-1, IGF-1 LR3, MGF, GHRP variants, Hexarelin, and others listed below.	0.5–1 mL of 0.6% acetic acid to dissolve, then dilute with BAC water to final volume.
DMSO (Dimethyl Sulfoxide)	Polar aprotic solvent. High penetration ability. Pharmaceutical-grade only.	Very rare. Only for research peptides that are completely insoluble in all aqueous solvents. Not for IV/SC use.	Use minimum volume possible. Always dilute heavily with sterile saline before any use.
Propylene Glycol (PG)	Viscous polar solvent. Common in topical and subcutaneous formulations.	Topical peptide formulations. Occasionally used for PT-141 nasal sprays.	10–20% PG in sterile water for topical. Follow vendor formulation instructions.

How to Make 0.6% Acetic Acid Solution:

You cannot use household white vinegar directly (5% acetic acid — too concentrated and not sterile). The correct method:

1. Purchase pharmaceutical-grade glacial acetic acid (99%+) or use food-grade acetic acid.
2. Mix 6 mL of glacial acetic acid into 994 mL of sterile water for injection = 0.6% solution.
3. Alternatively: mix 1.2 mL glacial acetic acid into 198.8 mL sterile water = 200 mL of 0.6%.
4. Filter through a 0.22 micron syringe filter before use.
5. Store refrigerated in a sealed container. Label: '0.6% Acetic Acid Solution — Date Made'.
6. Use within 1–3 months.

6. Peptide-by-Peptide Solvent & Reconstitution Reference

This reference table lists the recommended solvent, standard reconstitution volume, storage conditions, and special notes for each major research peptide. When in doubt, attempt BAC water first — if the peptide does not dissolve after gentle rolling for 15–20 minutes, switch to acetic acid protocol.

PEPTIDE	SOLVENT	RECONSTITUTION	REFRIGERATOR SHELF LIFE	NOTES
BPC-157	BAC Water	1–2 mL per 5 mg	4–6 weeks	Most versatile peptide. Oral use: dissolve in sterile water, drink immediately.
TB-500	BAC Water	1–2 mL per 5 mg	4–6 weeks	Dissolves easily. Often comes as 2 mg or 5 mg vials.
KPV	BAC Water	1–2 mL per 5 mg	4–6 weeks	Oral: dissolve in sterile water and consume within 24 hours.
GHK-Cu	BAC Water	1–2 mL per 5 mg	2–3 weeks	Blue-green color when dissolved is normal (copper complex). Keep dark.
AHK-Cu	BAC Water or Propylene Glycol	1 mL per 1 mg (topical: PG 20%)	3–4 weeks (topical: 2 months)	Topical formulation common. For SC: BAC water standard.
Semax	BAC Water	1–2 mL per 1 mg	3–4 weeks	For nasal spray: 1 mg/mL in BAC water. Use nasal atomizer.
Na Semax	BAC Water	1–2 mL per 1 mg	3–4 weeks	Same as Semax. Slightly more potent per volume.
Selank	BAC Water	1–2 mL per 1 mg	3–4 weeks	Nasal use standard. 1 mg/mL solution common.
Na Selank	BAC Water	1–2 mL per 1 mg	3–4 weeks	Longer-acting variant. Same reconstitution approach as Selank.
CJC-1295 DAC	BAC Water	1–2 mL per 2 mg	4–6 weeks	Dissolves readily. Weekly dosing makes good use of 4–6 week window.
CJC-1295 No DAC	BAC Water	1–2 mL per 2 mg	4–6 weeks	Often pre-mixed with Ipamorelin. Stable in BAC water.
Ipamorelin	BAC Water	1–2 mL per 2 mg	4–6 weeks	Clean and easy to reconstitute. No special solvent required.
GHRP-2	BAC Water or 0.6% Acetic Acid	1–2 mL per 5 mg	3–4 weeks	Usually dissolves in BAC water. If not, use dilute acetic acid.
GHRP-6	BAC Water or 0.6% Acetic Acid	1–2 mL per 5 mg	3–4 weeks	Same as GHRP-2. Start with BAC water.
Hexarelin	0.6% Acetic Acid then BAC Water	0.5 mL AA, then 1–1.5 mL BAC	3–4 weeks	More hydrophobic than other GHRPs. Acetic acid first is recommended.
Sermorelin	BAC Water	1–2 mL per 3 mg	4–6 weeks	Stable in BAC water. Commonly supplied as 3 mg or 6 mg vials.
Tesamorelin	BAC Water	1–2 mL per 1–2 mg	4–6 weeks	FDA-approved compound. Dissolves readily. Store reconstituted refrigerated.

Semaglutide	BAC Water	1–2 mL per 3–10 mg	4–6 weeks	Long half-life (7 days). Entire vial typically reconstituted at once for weekly dosing.
Tirzepatide	BAC Water	1–2 mL per 3–15 mg	4–6 weeks	Same approach as semaglutide. Concentrate to desired dose per draw.
Retatrutide	BAC Water	1–2 mL per 5–10 mg	4–6 weeks	Dissolves readily. Adjust concentration for precise weekly draw volumes.
Cagrilintide	BAC Water	1–2 mL per 5 mg	4–6 weeks	Amylin analog. Same BAC water protocol as other GLP class compounds.
AOD-9604	BAC Water	1–2 mL per 5 mg	4–6 weeks	HGH fragment. Dissolves easily in BAC water.
HGH Fragment 176-191	BAC Water	1–2 mL per 2–5 mg	4–6 weeks	Same as AOD. BAC water standard.
IGF-1	0.6% Acetic Acid then BAC Water	0.5 mL AA first, then dilute to 1–2 mL	2–3 weeks	MUST use acetic acid. BAC water alone will cause aggregation and loss of potency. Critical.
IGF-1 LR3	0.6% Acetic Acid then BAC Water	0.5 mL AA first, then dilute to 1–2 mL	2–3 weeks	Same critical acetic acid requirement as IGF-1. Long R3 variant.
MGF (Mechano Growth Factor)	0.6% Acetic Acid then BAC Water	0.5 mL AA first, then dilute	2–3 weeks	Another IGF family member requiring acetic acid. Do not skip this step.
PT-141	BAC Water	1–2 mL per 10 mg	3–4 weeks	Can also be formulated as nasal spray: 10 mg in 10 mL = 1 mg/mL. Keep dark.
Melanotan I	BAC Water	1–2 mL per 10 mg	3–4 weeks	Light-sensitive. Store in amber vial or wrapped in foil. Keep cold.
Melanotan II	BAC Water	1–2 mL per 10 mg	3–4 weeks	Same as MT-I. Very light and heat sensitive. Never leave at room temp.
Epitalon	BAC Water	1 mL per 10 mg	4–6 weeks	Stable in BAC water. Khavinson protocol: 10-day course.
Na Epitalon	BAC Water	1 mL per 10 mg	4–6 weeks	Identical reconstitution to Epitalon.
MOTS-C	BAC Water	1–2 mL per 5–10 mg	4–6 weeks	Dissolves readily. Store reconstituted vial refrigerated.
SS-31 (Elamipretide)	BAC Water	1–2 mL per 10–20 mg	2–4 weeks	Light-sensitive. Keep in amber vial or wrapped in foil. Oxidation-sensitive.
FOXO4-DRI	BAC Water or 0.6% Acetic Acid	0.5–1 mL per 5 mg	3–4 weeks	Hydrophobic peptide. If cloudy in BAC water, use acetic acid first.
NAD+	Sterile Water (IV use — immediate)	Per clinical protocol (250–500 mg in 100–500 mL)	Use immediately for IV	IV: reconstitute in saline or sterile water immediately before infusion. Oral NMN/NR: stable powder — no reconstitution needed.
Thymosin Alpha-1	BAC Water	1 mL per 1.6 mg vial	3–4 weeks	Standard vial size is 1.6 mg. Dissolves readily.
Thymulin	BAC Water	1–2 mL per 0.1–0.5 mg	3–4 weeks	Low-dose peptide. Careful dilution math required for accurate dosing.

VIP	BAC Water or Sterile Saline	1 mL per 50 mcg	2–3 weeks	Very low dose (mcg range). Use precise dilution. Short half-life — split dosing common.
LL-37	BAC Water	1–2 mL per 1–5 mg	3–4 weeks	Can self-aggregate at high concentrations. Do not over-concentrate.
GHK-Cu / KPV Blend	BAC Water	1–2 mL per 5 mg blend	2–3 weeks	Combined vial. Use immediately or within 2–3 weeks refrigerated.
KPV (Oral)	Sterile Water (single use)	5 mL per 50 mg	24 hours (oral use)	For oral gut protocols: dissolve in plain sterile water. Drink immediately. Do not store.
PE-22-28	BAC Water	1 mL per 0.5–1 mg	3–4 weeks	Nasal spray use. 0.5–1 mg/mL concentration typical.
DSIP	BAC Water	1 mL per 0.5–1 mg	3–4 weeks	Sleep peptide. Very low dose (mcg range). Dilute accurately.
Oxytocin	BAC Water	1 mL per 0.5–1 mg (10 IU/mL typical)	2–3 weeks	Intranasal spray: 10 IU per 100 mcL spray. Degrades faster than most — use within 2–3 weeks.
Cerebrolysin	Ready to use (pre-formulated)	No reconstitution needed	Per product labeling	Supplied as aqueous solution. IV diluted in normal saline. Follow clinical protocol.
PNC-27	BAC Water or 0.6% Acetic Acid	1 mL per 1–5 mg	2–3 weeks	Experimental. Hydrophobic. Try BAC water first; acetic acid if cloudy.
Kisspeptin	BAC Water	1 mL per 0.1–0.5 mg	2–3 weeks	Very potent — micro-dosing typical. Use precise dilution protocol.
Abaloparatide	BAC Water	Supplied ready-to-use (FDA-approved pen)	Per device labeling	FDA-approved product. Supplied as a multi-dose injection pen. No reconstitution required.
Teriparatide	BAC Water	Supplied ready-to-use (FDA-approved pen)	Per device labeling	FDA-approved product. Pre-filled injection pen. No reconstitution required.

Red solvent text = requires acetic acid as first step. Green solvent text = BAC water is sufficient.

7. Step-by-Step Reconstitution Protocol

Follow this protocol every time you reconstitute a peptide vial. Sterile technique is non-negotiable.

1 — Gather supplies

Clean flat surface (alcohol-wiped). Peptide vial. BAC water vial (or acetic acid + BAC water). Two appropriately sized syringes (1 mL insulin syringe works well). Alcohol wipes. Gloves optional but recommended.

2 — Allow vial to warm

Remove the peptide vial from the freezer or refrigerator. Let it sit at room temperature for 15–20 minutes. This prevents condensation from entering the vial and prevents cold thermal shock to the powder when the solvent hits it.

3 — Wipe stoppers

Using a fresh alcohol wipe, clean the rubber stopper of both the peptide vial and the BAC water vial. Allow to air-dry for 30 seconds (do not blow on them).

4 — Draw your solvent

Insert a new syringe into the BAC water vial. Draw up the desired amount of BAC water (typically 1–2 mL for a 5 mg peptide vial). For acetic acid protocol: draw 0.5 mL of 0.6% acetic acid first.

5 — Inject slowly down the glass wall

Insert the syringe needle into the peptide vial at a slight angle so the tip touches the inside glass wall. Push the plunger SLOWLY. Let the solvent run down the glass wall and gently pool over the powder. Do NOT spray directly onto the powder. Do NOT inject rapidly.

6 — Do not shake

After adding solvent, set the vial down. Wait 2–5 minutes for the powder to absorb the liquid. Then gently roll the vial between your palms for 1–2 minutes. Never shake, vortex, or tap aggressively. The peptide should dissolve fully within 5–10 minutes.

7 — Check for clarity

A properly reconstituted peptide solution is typically clear and colorless. Some exceptions: GHK-Cu is blue-green (normal). Slight cloudiness may indicate aggregation — try warming slightly in your palms and rolling gently. Persistent cloudiness or particulates = do not use.

8 — Label and refrigerate

Write the peptide name, concentration (mg/mL), date of reconstitution, and your initials on the vial using a waterproof marker or Niimbot label. Refrigerate immediately. Do not leave at room temperature.

9 — Draw doses with new needle each time

Always use a new, sterile needle and syringe for every draw from the vial. Never reuse needles across draws. Wipe the stopper with a fresh alcohol wipe before every puncture.

8. Difficult, Gel-Like & Insoluble Peptides

Some peptides are notoriously difficult to dissolve. They may clump, form a gel, appear cloudy, or remain as visible powder even after extended mixing. This does not always mean the peptide is bad — it may simply require a different approach.

IGF-1 and IGF-1 LR3

Problem: Aggregates immediately in BAC water alone. Forms visible white strands or precipitate.

Solution: MUST use 0.6% acetic acid as the first solvent. Add 0.3–0.5 mL of 0.6% acetic acid, roll gently until dissolved (may take 10–20 min), then carefully add BAC water to desired final volume. Final solution should be clear. If still cloudy after acetic acid, warm to 37°C in a water bath for 5 minutes and roll again.

MGF (Mechano Growth Factor)

Problem: Same aggregation issue as IGF-1. Very hydrophobic C-terminal sequence.

Solution: Identical acetic acid protocol to IGF-1. No shortcuts. Always use 0.6% acetic acid first.

GHRP-6 and Hexarelin

Problem: Can appear slightly cloudy or form a white ring at the meniscus in BAC water.

Solution: Try BAC water first. If cloudy after 15 minutes of gentle rolling, switch to 0.6% acetic acid (0.5 mL), dissolve, then dilute with BAC water.

PNC-27

Problem: Hydrophobic experimental peptide. May not dissolve in BAC water at higher concentrations.

Solution: Start with 0.5 mL of 0.6% acetic acid. Roll for 20 minutes. Then dilute with BAC water. Keep concentration low (0.5–1 mg/mL maximum).

FOXO4-DRI

Problem: D-amino acid retro-inverso peptide. Unusual stereochemistry can cause solubility issues.

Solution: Try BAC water at low concentration (1 mg/mL). If cloudy, add a small amount of 0.6% acetic acid. Some researchers add 5–10% DMSO but this is not for injection use — topical only.

GHK-Cu (high concentration)

Problem: Blue-green color at low concentration is normal. At high concentration (>2 mg/mL) may become turbid due to copper complexation.

Solution: Keep concentration at 1–2 mg/mL. Do not over-concentrate. The blue-green color is the copper complex forming — this is expected and correct.

Tesamorelin (5 mg vials with variations)

Problem: Some batches dissolve instantly; others form a gel or slow-dissolving mass.

Solution: Add BAC water slowly down the glass wall. Do not rush. If gel-like after 10 minutes, warm the sealed vial in your palm at body temperature for 5 minutes and roll again. Tesamorelin is sensitive to pH — do not use acetic acid unless absolutely necessary.

SS-31 (Elamipretide)

Problem: Oxidation-sensitive. May develop a yellow tint if oxidized.

Solution: Use fresh BAC water. Work quickly to minimize air exposure. If the solution is yellow rather than colorless, the peptide may be degraded — yellow color is a warning sign, discard and test a new vial.

Kisspeptin

Problem: Very low dose (mcg range) makes concentration errors likely.

Solution: Use a 2-step dilution: first dissolve in 1 mL BAC water, then take 0.1 mL of that solution and add to 0.9 mL BAC water for a 10x dilution. This makes accurate dosing in the mcg range achievable with standard insulin syringes.

9. Freeze-Thaw Rules & Multi-Dose Vials

Freezing reconstituted peptide is possible and extends shelf life significantly. However, every freeze-thaw cycle stresses the peptide structure. The key is to freeze in single-use aliquots so you never thaw more than you need.

Maximum freeze-thaw cycles: Most peptides tolerate 3–5 freeze-thaw cycles without significant degradation. Beyond 5 cycles, expect meaningful potency loss. Beyond 10 cycles, the peptide should be considered compromised.

Aliquot before freezing: If you plan to freeze a reconstituted peptide, divide it into single-use aliquots immediately after reconstitution using insulin syringes or small vials. Each thawed aliquot is used completely and discarded — never re-frozen.

Thawing protocol: Remove from freezer. Allow to thaw at room temperature for 10–15 minutes. Do not microwave, heat, or run under warm water. Do not shake during thawing. Roll gently once thawed. Use within 4–6 hours once thawed.

Multi-dose vials with BAC water: BAC water vials with 0.9% benzyl alcohol can be used for multi-dose draws over 4–6 weeks without freezing, as long as proper needle technique is used each time. Wipe the stopper with a fresh alcohol wipe before every draw. Never reintroduce a used needle into the vial.

Never freeze glass ampoules: If your peptide came in a glass ampoule rather than a rubber-topped vial, do not freeze after opening — you cannot reseal it. Use the full contents immediately.

Date tracking: Label the date of reconstitution on every vial AND on each aliquot. If you cannot remember when you reconstituted it, throw it out.

10. Temperature Quick-Reference Card

FORM	TEMPERATURE	SHELF LIFE	KEY RULE
Lyophilized powder	-20°C (freezer)	1–2 years	Let warm to room temp before opening
Lyophilized powder	2–8°C (refrigerator)	3–6 months	Keep sealed. Use desiccant.
Lyophilized powder	Room temp (18–25°C)	Days to 2–4 weeks	Transit only. Not for storage.
Reconstituted (BAC water)	2–8°C (refrigerator)	4–6 weeks	Standard protocol. Wipe stopper every draw.
Reconstituted (BAC water)	-20°C (freezer)	3–6 months	Aliquot first. Max 5 freeze-thaw cycles.
Reconstituted (sterile water)	2–8°C (refrigerator)	5–7 days	Single-dose use only.
Reconstituted (any solvent)	Room temp (18–25°C)	24–48 hours max	Use immediately. Never store at room temp.

11. Warning Signs — When to Discard a Vial

■ When in doubt, throw it out.

Cloudiness or turbidity (that wasn't there before)	Precipitation, aggregation, or bacterial contamination. Do not use.
Visible particles or floating material	Bacterial growth, particulate contamination, or peptide aggregation. Do not inject.
Yellow or brown discoloration (unexpected)	Oxidation of sensitive peptides (SS-31, GHK-Cu at high dose). Degradation product. Discard.
Unusual smell when the stopper is punctured	Bacterial contamination or solvent breakdown. Discard.
Past shelf life date	Reconstituted vials past 6 weeks (refrigerated) should be considered suspect regardless of appearance.
Stopper looks discolored or corroded	Physical integrity of the vial is compromised. Do not use.
Lost the label	If you cannot identify the peptide, the concentration, or the date of reconstitution, discard it.
Any doubt whatsoever	Peptide vials cost money. Your health costs more. When uncertain, discard and reconstitute fresh.

12. Equipment & Supply Checklist

Everything you need for safe, accurate peptide reconstitution and storage.

Reconstitution Supplies

- Bacteriostatic Water (BAC water) for injection — 30 mL multi-dose vial
- Sterile Water for Injection — single-use ampoules (for immediate single-dose use)
- 0.6% Acetic Acid solution (for IGF-1, LR3, MGF, and difficult peptides)
- 1 mL insulin syringes (U-100, 28–31 gauge needles) — one per draw minimum
- 3 mL syringes for drawing BAC water
- Alcohol wipes (70% isopropyl alcohol)
- Sterile gloves (optional but recommended)
- 0.22 micron syringe filters (for filtering acetic acid before use)

Storage Equipment

- Amber or dark glass vials (if transferring to light-protected container)
- Small airtight container or pill organizer for vial storage
- Silica gel desiccant packets
- Dedicated section of refrigerator (not the door — temperature fluctuates at door)
- Small freezer-safe container for long-term storage
- Permanent marker or Niimbot M2 label printer + labels
- Parafilm or PTFE tape for sealing unconstituted vials

Optional but Recommended

- PeptiCool or equivalent peptide travel cooler (for transport)
- Sharps disposal container (never throw needles in household trash)
- Logbook or tracking spreadsheet: peptide, date reconstituted, concentration, remaining volume
- Small digital scale for verifying vial weights if suspected underfill
- Thermometer for verifying refrigerator and freezer temperatures

Safety Essentials

- Alcohol wipes — wipe every stopper before every needle puncture
- New sterile needle and syringe for every draw
- Sharps container within arm's reach of work area
- Never use needles on more than one vial without changing them
- Work on a clean, flat surface wiped with 70% isopropyl alcohol

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Peptide Reconstitution Guide

Detailed Per-Compound Reconstitution Instructions · Exact Solvents · Volume & Concentration Math · Storage Protocols

STEP-BY-STEP FOR EVERY MAJOR RESEARCH PEPTIDE · ACCURATE · SEARCHABLE

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How to Use This Guide

Each peptide entry in this guide includes: the common vial sizes you will encounter, the correct solvent to use, a numbered step-by-step reconstitution protocol specific to that peptide, a concentration reference table so you can calculate your draw volumes, storage instructions, and any warnings or special handling notes.

Peptides that require acetic acid (IGF-1, LR3, MGF, Hexarelin) are flagged in red. Always read the warning section before reconstituting an unfamiliar compound.

■ **All compounds are for research purposes only. Not for human consumption.**

SOLVENT AB BREVIATION	FULL NAME	WHEN USED
BAC Water	Bacteriostatic Water for Injection (0.9% benzyl alcohol)	Default for most peptides. All multi-dose vials.
SW	Sterile Water for Injection (no preservative)	Single-dose only. Use immediately and discard.
0.6% AA	0.6% Acetic Acid in sterile water	IGF-1 family, MGF, Hexarelin. First solvent step only.
NS	Normal Saline (0.9% NaCl) for injection	IV dilution solvent. Not for SC reconstitution.

HEALING & RECOVERY PEPTIDES

BPC-157 — Body Protection Compound 157

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
2 mg, 5 mg, 10 mg	BAC Water	4–6 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Remove vial from refrigerator. Allow to reach room temperature (15–20 min). Do not open while cold.
- 2 Wipe the rubber stopper of both the BPC-157 vial and BAC water vial with a fresh alcohol wipe. Allow to air-dry 30 seconds.
- 3 Using a 3 mL syringe, draw 2 mL of BAC water (for a 5 mg vial — see concentration table for other volumes).
- 4 Insert the needle into the BPC-157 vial at a slight angle, tip touching the inside glass wall.
- 5 Depress the plunger very slowly — let BAC water run down the glass wall and pool over the powder. Do NOT spray directly onto powder.
- 6 Remove syringe. Do not shake. Gently swirl or roll the vial between palms for 60–90 seconds.
- 7 The solution should become completely clear and colorless within 2–5 minutes. If not, roll gently for another 2 min.
- 8 Label vial: 'BPC-157 — [date] — [concentration] mg/mL'. Refrigerate immediately.
- 9 Use a new insulin syringe and wipe the stopper with a fresh alcohol wipe before each draw.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Volume per 250 mcg dose
5 mg	1 mL	5 mg/mL (5000 mcg/mL)	0.05 mL (5 units on U-100 syringe)
5 mg	2 mL	2.5 mg/mL (2500 mcg/mL)	0.10 mL (10 units)
5 mg	5 mL	1 mg/mL (1000 mcg/mL)	0.25 mL (25 units)
10 mg	2 mL	5 mg/mL (5000 mcg/mL)	0.05 mL (5 units)
10 mg	4 mL	2.5 mg/mL (2500 mcg/mL)	0.10 mL (10 units)

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Upright. Protected from light. Use within 4–6 weeks.

- For oral use: dissolve in plain sterile water (not BAC water). Drink within 30 minutes. Do not store oral solution.
- BPC-157 is one of the most stable peptides post-reconstitution. 4–6 weeks is conservative; many researchers report 8 weeks with proper technique.
- Oral and subcutaneous protocols are distinct — oral requires no needles and uses sterile water.

TB-500 — Thymosin Beta-4 Fragment

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
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2 mg, 5 mg	BAC Water	4–6 weeks (refrigerated)	Clear, colorless solution
RECONSTITUTION STEPS			
1 Allow vial to warm to room temperature (15 min). Do not open while cold.			
2 Alcohol-wipe both stoppers. Air-dry 30 seconds.			
3 Draw 1–2 mL BAC water into a 3 mL syringe (see concentration table).			
4 Inject slowly down the inside glass wall — never spray directly on powder.			
5 Roll gently between palms 60–90 seconds. TB-500 dissolves readily.			
6 Solution should be clear and colorless. Label and refrigerate immediately.			
CONCENTRATION REFERENCE			
Vial Size	BAC Water Added	Concentration	Volume per 2.5 mg dose
5 mg	1 mL	5 mg/mL	0.50 mL (50 units)
5 mg	2 mL	2.5 mg/mL	1.00 mL (100 units)
2 mg	1 mL	2 mg/mL	1.25 mL per 2.5 mg
2 mg	2 mL	1 mg/mL	2.50 mL per 2.5 mg
STORAGE AFTER RECONSTITUTION			
Refrigerate at 2–8°C. Use within 4–6 weeks.			

- TB-500 dissolves easily and is very forgiving. Standard BAC water protocol works every time.
- Often stacked with BPC-157 — can reconstitute both in the same timeframe for a healing protocol.

KPV — Tripeptide (Lys-Pro-Val)			
COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
5 mg, 10 mg, 50 mg	BAC Water (SC) or Sterile Water (oral)	4 weeks SC / Immediate oral	Clear, colorless solution
RECONSTITUTION STEPS			
1 Determine route: SC injection or oral (gut protocol). Solvent differs.			
2 For SC: allow vial to warm 15 min, alcohol-wipe stopper, inject 1–2 mL BAC water slowly down glass wall.			
3 For oral: use plain sterile water (NOT BAC water — benzyl alcohol is not intended for consumption). Dissolve 50 mg in 5–10 mL sterile water.			
4 Roll gently 60 seconds. KPV dissolves readily in both solvents.			
5 SC: label, refrigerate, use within 4 weeks. Oral: drink entire solution immediately. Discard any remainder.			
CONCENTRATION REFERENCE			
Vial Size	BAC Water Added	Concentration	Notes

5 mg	1 mL	5 mg/mL	SC protocol — 200–600 mcg doses (0.04–0.12 mL)
5 mg	2 mL	2.5 mg/mL	SC protocol — 200–600 mcg doses (0.08–0.24 mL)
50 mg	5 mL sterile water	10 mg/mL	Oral protocol — drink entire dose immediately
50 mg	10 mL sterile water	5 mg/mL	Oral protocol — more dilute, easier to swallow
STORAGE AFTER RECONSTITUTION			
SC vials: refrigerate, use within 4 weeks. Oral solution: use immediately, no storage.			

■ **Do not use BAC water for oral administration — benzyl alcohol is not for ingestion.**

- KPV binds the MC1R receptor on intestinal epithelial and immune cells. Oral and SC routes have different absorption profiles.
- Gut protocol research uses high oral doses (50–200 mg). SC research uses lower doses (200–600 mcg).

GROWTH HORMONE SECRETAGOGUES

CJC-1295 DAC — Growth Hormone Releasing Hormone Analogue

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
2 mg, 5 mg	BAC Water	4–6 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm to room temperature 15–20 min.
- 2 Alcohol-wipe both stoppers. Air-dry.
- 3 Draw 1–2 mL BAC water into syringe.
- 4 Inject slowly down the glass wall. CJC-1295 DAC dissolves readily.
- 5 Roll gently 60 seconds. Clear, colorless solution expected.
- 6 Label with name, concentration, and date. Refrigerate immediately.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Volume per 1 mg dose (weekly)
2 mg	1 mL	2 mg/mL	0.50 mL (50 units)
2 mg	2 mL	1 mg/mL	1.00 mL (100 units)
5 mg	2 mL	2.5 mg/mL	0.40 mL (40 units)
5 mg	5 mL	1 mg/mL	1.00 mL (100 units)

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Use within 4–6 weeks.

- DAC (Drug Affinity Complex) gives CJC-1295 a 7–8 day half-life, so weekly dosing is standard.
- One vial reconstituted covers 2–5 weeks depending on dose. Stable enough to make weekly dosing practical.

CJC-1295 No DAC (Mod GRF 1-29)

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
2 mg, 5 mg	BAC Water	4–6 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15 min. Alcohol-wipe stoppers.
- 2 Draw 1–2 mL BAC water. Inject slowly down the glass wall.
- 3 Roll gently 60 seconds. Dissolves readily.
- 4 Label and refrigerate. Use within 4–6 weeks.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Volume per 100 mcg dose
2 mg	2 mL	1 mg/mL (1000 mcg/mL)	0.10 mL (10 units)
2 mg	1 mL	2 mg/mL (2000 mcg/mL)	0.05 mL (5 units)
5 mg	5 mL	1 mg/mL (1000 mcg/mL)	0.10 mL (10 units)
STORAGE AFTER RECONSTITUTION			
Refrigerate at 2–8°C. Use within 4–6 weeks.			

- No DAC = short half-life (~30 min). Dosed 2–3x/day or pre-workout. Often pre-mixed with Ipamorelin.
- When stacking with Ipamorelin: can reconstitute both in the same vial if you know your dose ratio.

Ipamorelin — Selective Growth Hormone Secretagogue			
COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
2 mg, 5 mg	BAC Water	4–6 weeks (refrigerated)	Clear, colorless solution
RECONSTITUTION STEPS			
1 Allow vial to warm 15 min. Alcohol-wipe stoppers.			
2 Draw 1–2 mL BAC water. Inject slowly down the glass wall.			
3 Roll gently 60 seconds. Dissolves immediately and cleanly.			
4 Label and refrigerate. Use within 4–6 weeks.			
CONCENTRATION REFERENCE			
Vial Size	BAC Water Added	Concentration	Volume per 200 mcg dose
2 mg	1 mL	2 mg/mL (2000 mcg/mL)	0.10 mL (10 units)
2 mg	2 mL	1 mg/mL (1000 mcg/mL)	0.20 mL (20 units)
5 mg	2 mL	2.5 mg/mL (2500 mcg/mL)	0.08 mL (8 units)
5 mg	5 mL	1 mg/mL (1000 mcg/mL)	0.20 mL (20 units)
STORAGE AFTER RECONSTITUTION			
Refrigerate at 2–8°C. Use within 4–6 weeks.			

- Ipamorelin is the cleanest GHRP — no cortisol, no prolactin, no appetite surge. Ideal for GH pulse stacking.
- Pre-sleep dosing is the most common protocol: matches the natural nocturnal GH pulse.

Sermorelin — GHRH Analogue (First 29 AA)			
COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
3 mg, 6 mg, 9 mg	BAC Water	4–6 weeks (refrigerated)	Clear, colorless solution
RECONSTITUTION STEPS			
1 Allow vial to warm 15–20 min. Alcohol-wipe stoppers.			

2 Draw 1–2 mL BAC water (see table). Inject slowly down glass wall.

3 Roll gently 60–90 seconds. Clear solution expected.

4 Label with date and concentration. Refrigerate immediately.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Volume per 300 mcg dose
3 mg	1 mL	3 mg/mL (3000 mcg/mL)	0.10 mL (10 units)
3 mg	3 mL	1 mg/mL (1000 mcg/mL)	0.30 mL (30 units)
6 mg	2 mL	3 mg/mL (3000 mcg/mL)	0.10 mL (10 units)
9 mg	3 mL	3 mg/mL (3000 mcg/mL)	0.10 mL (10 units)

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Use within 4–6 weeks.

- Sermorelin has a short half-life (~10–12 min). Pre-sleep SC dosing is standard.
- Often stacked with Ipamorelin for synergistic GH pulse. Safer hormonal profile than exogenous HGH.

GHRP-2 — Growth Hormone Releasing Peptide 2

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
5 mg, 10 mg	BAC Water (preferred) or 0.6% Acetic Acid if needed	3–4 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

1 Allow vial to warm 15 min. Alcohol-wipe stoppers.

2 Attempt BAC water first: draw 1–2 mL, inject slowly down glass wall, roll gently 2–5 min.

3 If cloudiness persists after 5 min of rolling: discard BAC water attempt. Use 0.6% acetic acid instead.

4 Acetic acid protocol: draw 0.5 mL 0.6% acetic acid, inject slowly, roll 5–10 min until clear.

5 Once dissolved in acetic acid, add remaining BAC water to reach target volume.

6 Label and refrigerate immediately. Solution should be clear.

CONCENTRATION REFERENCE

Vial Size	Total Volume	Concentration	Volume per 100 mcg dose
5 mg	2 mL	2.5 mg/mL	0.04 mL (4 units)
5 mg	5 mL	1 mg/mL	0.10 mL (10 units)
10 mg	2 mL	5 mg/mL	0.02 mL (2 units)
10 mg	5 mL	2 mg/mL	0.05 mL (5 units)

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Use within 3–4 weeks.

- GHRP-2 causes significant cortisol and prolactin spike vs Ipamorelin. Note if sensitive.

- GHRP-2 causes strong hunger signal. Dose 30–60 min before meals or fasted for GH pulse.
- Stronger GH release than Ipamorelin but less selective. Good for bulking protocols.

GHRP-6 — Growth Hormone Releasing Peptide 6

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
5 mg, 10 mg	BAC Water (preferred) or 0.6% Acetic Acid if needed	3–4 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15 min. Alcohol-wipe stoppers.
- 2 Attempt BAC water first: 1–2 mL, inject slowly down glass wall, roll 2–5 min.
- 3 If cloudy after 5 min, switch to 0.6% acetic acid: 0.5 mL first, roll until clear, then add BAC water.
- 4 Label and refrigerate. Clear, colorless solution expected.

CONCENTRATION REFERENCE

Vial Size	Total Volume	Concentration	Volume per 100 mcg dose
5 mg	2 mL	2.5 mg/mL (2500 mcg/mL)	0.04 mL (4 units)
5 mg	5 mL	1 mg/mL (1000 mcg/mL)	0.10 mL (10 units)
10 mg	5 mL	2 mg/mL (2000 mcg/mL)	0.05 mL (5 units)

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Use within 3–4 weeks.

■ GHRP-6 causes the strongest hunger signal of all GHRPs — hunger spikes 20–40 min post-injection.

- GHRP-6 is the original GHRP. Powerful GH release but the hunger effect is pronounced.
- Often used in bulking/mass-building protocols where the hunger effect is a feature, not a bug.

Hexarelin — GHRP Analogue (Most Potent GHRP)

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
2 mg, 5 mg	0.6% Acetic Acid FIRST, then dilute with BAC Water	3–4 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15 min. Alcohol-wipe stoppers.
- 2 Draw 0.5 mL of 0.6% acetic acid into a syringe.
- 3 Inject acetic acid SLOWLY down the glass wall. Do not spray on powder.
- 4 Roll vial gently for 5–10 minutes. Hexarelin may be slow to dissolve — patience required.
- 5 Once dissolved (clear solution), draw up the desired additional BAC water to reach target volume.
- 6 Inject BAC water slowly into the same vial. Roll gently again 60 seconds.
- 7 Final solution should be clear. Label and refrigerate immediately.

CONCENTRATION REFERENCE				
Vial Size	0.6% AA	BAC Water Added	Concentration	Vol per 200 mcg dose
2 mg	0.5 mL	0.5–1 mL	1–2 mg/mL	0.10–0.20 mL
5 mg	0.5 mL	1.5–2 mL	2–2.5 mg/mL	0.08–0.10 mL
STORAGE AFTER RECONSTITUTION				
Refrigerate at 2–8°C. Use within 3–4 weeks.				

- **Do NOT skip the acetic acid step. BAC water alone will cause aggregation and loss of potency.**
- **Hexarelin causes rapid GH receptor desensitization. Do not use daily for more than 4 weeks without a break.**
 - Most potent GHRP by GH release per mcg. Desensitization is faster than other GHRPs.
 - Cardioprotective effects in animal research, independent of GH release. Used in heart-focused protocols.

Tesamorelin — Stabilized GHRH Analogue (FDA-Approved)

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
1 mg, 2 mg	BAC Water	4–6 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15–20 min. Alcohol-wipe stoppers.
- 2 Draw 0.5–1 mL BAC water per mg of peptide (see table).
- 3 Inject slowly down the glass wall. Tesamorelin can sometimes be gel-like — go slowly.
- 4 If powder is slow to dissolve, warm sealed vial in palm at body temperature for 3–5 min, then roll gently again.
- 5 Do NOT use acetic acid unless powder completely refuses to dissolve after 15 min of trying.
- 6 Clear solution expected. Label and refrigerate immediately.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Volume per 2 mg dose
1 mg	1 mL	1 mg/mL	2.00 mL (200 units) — use two draws
2 mg	1 mL	2 mg/mL	1.00 mL (100 units)
2 mg	2 mL	1 mg/mL	2.00 mL (200 units)

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Use within 4–6 weeks.

■ **Some batches of Tesamorelin can form a gel. Do not panic — body temperature warming resolves it.**

- FDA-approved for HIV-associated lipodystrophy (Egrifta). Research-grade versions follow the same reconstitution protocol as the pharmaceutical.
- Daily SC injection in abdomen. Tesamorelin preferentially reduces visceral adipose tissue (belly fat).

IGF & GH PEPTIDES

IGF-1 LR3 — Insulin-Like Growth Factor 1 Long R3

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
1 mg, 2 mg	0.6% Acetic Acid FIRST — mandatory	2–3 weeks refrigerated / 3 months frozen	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15–20 min. Alcohol-wipe stoppers.
- 2 Draw 0.3–0.5 mL of 0.6% acetic acid into a syringe.
- 3 Inject acetic acid SLOWLY down the inside glass wall of the IGF-1 vial.
- 4 Do NOT inject directly onto the powder — inject so the liquid runs down the wall and contacts the powder gently.
- 5 Roll vial slowly between palms for 10–15 minutes. IGF-1 LR3 can be slow to dissolve. Do not rush.
- 6 If still not fully dissolved after 15 min: warm sealed vial at 37°C (body temperature or warm water bath) for 5 min, then roll again.
- 7 Once fully dissolved, add BAC water to reach target final volume (see table). Inject BAC water slowly.
- 8 Roll gently 60 seconds to mix. Solution should be clear and colorless.
- 9 Aliquot into single-use amounts immediately after reconstitution if possible, and freeze aliquots.

- 1 Label all vials with compound name, date, and concentration.
- 0

CONCENTRATION REFERENCE

Vial Size	0.6% AA First	BAC Water to Add	Final Concentration	Vol per 100 mcg dose
1 mg	0.3 mL	0.7 mL	1 mg/mL (1000 mcg/mL)	0.10 mL (10 units)
1 mg	0.5 mL	0.5 mL	1 mg/mL (1000 mcg/mL)	0.10 mL (10 units)
2 mg	0.5 mL	1.5 mL	1 mg/mL (1000 mcg/mL)	0.10 mL (10 units)
2 mg	0.5 mL	0.5 mL	2 mg/mL (2000 mcg/mL)	0.05 mL (5 units)

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Use within 2–3 weeks. Or aliquot and freeze (-20°C) for up to 3 months.

- **NEVER use BAC water alone for IGF-1. It will aggregate immediately and potency will be destroyed.**
- **0.6% acetic acid is not optional. It is required to dissolve IGF-1 correctly.**
- **IGF-1 has profound anabolic and hypoglycemic potential. Research use only — handle with care.**
- *LR3 variant has a 20–30 hour half-life vs 15–20 min for native IGF-1. Once-daily dosing is typical in research.*

- Hypoglycemia risk: many researchers inject immediately post-workout with food nearby.
- Aliquoting before storage is strongly recommended due to the short refrigerated shelf life.

MGF — Mechano Growth Factor (IGF-1 Splice Variant)

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
2 mg	0.6% Acetic Acid FIRST — mandatory	2 weeks refrigerated / 3 months frozen	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15–20 min. Alcohol-wipe stoppers.
- 2 Draw 0.3–0.5 mL of 0.6% acetic acid.
- 3 Inject SLOWLY down inside glass wall. Roll gently for 10–15 min.
- 4 If needed, warm sealed vial in palm for 5 min and continue rolling.
- 5 Once dissolved, add BAC water to reach target volume. Roll 60 seconds.
- 6 Aliquot into single-use amounts and freeze. MGF has a short refrigerated shelf life.
- 7 Label all vials with name, date, concentration.

CONCENTRATION REFERENCE

Vial Size	0.6% AA First	BAC Water to Add	Final Concentration	Vol per 200 mcg dose
2 mg	0.3 mL	0.7 mL	2 mg/mL (2000 mcg/mL)	0.10 mL (10 units)
2 mg	0.5 mL	1.5 mL	1 mg/mL (1000 mcg/mL)	0.20 mL (20 units)

STORAGE AFTER RECONSTITUTION

Refrigerate: use within 2 weeks. Freeze aliquots at -20°C for up to 3 months.

- Same critical acetic acid requirement as IGF-1. BAC water alone = aggregation = wasted vial.
- MGF has a very short half-life (~ minutes). Timing to post-workout is critical in research protocols.
- MGF (Mechano Growth Factor) is a splice variant of IGF-1 produced in muscle in response to mechanical damage.
- PEG-MGF (pegylated) has a much longer half-life and does NOT require acetic acid — different compound entirely.

AOD-9604 — HGH Fragment for Fat Metabolism

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
2 mg, 5 mg	0.6% Acetic Acid (1:1) + BAC Water — prevents gelling	4–6 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15 min. Alcohol-wipe stoppers.

- 2 Draw 0.5–1 mL of 0.6% acetic acid (1:1 ratio with BAC water you plan to add).
- 3 Inject acetic acid SLOWLY down the inside glass wall. Do not spray onto the powder.
- 4 Roll gently 2–3 minutes. AOD-9604 gels in BAC water alone — acetic acid prevents this.
- 5 Once dissolved, add BAC water slowly down the glass wall to reach your target final volume.
- 6 Roll gently 60 seconds to mix. Solution should be clear and colorless.
- 7 If gelling still occurs after adding BAC water: draw additional BAC water into the vial and continue rolling. Do not discard.
- 8 Label vial with name, date, and concentration. Refrigerate immediately.

CONCENTRATION REFERENCE

Vial Size	0.6% AA First	BAC Water	Final Vol	Concentration	Vol per 500 mcg dose
2 mg	0.5 mL	0.5 mL	1 mL	2 mg/mL (2000 mcg/mL)	0.25 mL (25 units)
2 mg	0.5 mL	1.5 mL	2 mL	1 mg/mL (1000 mcg/mL)	0.50 mL (50 units)
5 mg	0.5 mL	1.5 mL	2 mL	2.5 mg/mL (2500 mcg/mL)	0.20 mL (20 units)
5 mg	1 mL	4 mL	5 mL	1 mg/mL (1000 mcg/mL)	0.50 mL (50 units)

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Use within 4–6 weeks.

■ **AOD-9604 WILL gel if reconstituted in BAC water alone. Always use acetic acid first (1:1 ratio minimum).**

■ **If gelling still occurs after adding BAC water: draw more BAC water into the vial and roll until the gel dissolves. Do not discard the vial.**

- AOD-9604 is the C-terminal fragment (176–191) of HGH. Stimulates fat breakdown without IGF-1 axis activation.
- No significant effect on blood sugar. Safer hormonal profile than full HGH for fat loss research.

GLP-1 / GIP METABOLIC PEPTIDES

Semaglutide — GLP-1 Receptor Agonist

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
3 mg, 5 mg, 10 mg	BAC Water	4–6 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15–20 min. Alcohol-wipe stoppers.
- 2 Determine your target concentration based on titration schedule (see table).
- 3 Draw the appropriate volume of BAC water. Inject slowly down glass wall.
- 4 Roll very gently 60–90 seconds. Semaglutide dissolves readily.
- 5 Solution should be clear and colorless. Label with name, date, concentration, and weekly dose.
- 6 Refrigerate immediately. One vial typically covers multiple weeks at low doses.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Draw per 0.25 mg dose	Draw per 0.5 mg dose	Draw per 1 mg dose
3 mg	1.5 mL	2 mg/mL	0.125 mL (12.5 units)	0.25 mL (25 units)	0.50 mL (50 units)
5 mg	2.5 mL	2 mg/mL	0.125 mL (12.5 units)	0.25 mL (25 units)	0.50 mL (50 units)
5 mg	5 mL	1 mg/mL	0.25 mL (25 units)	0.50 mL (50 units)	1.00 mL (100 units)
10 mg	5 mL	2 mg/mL	0.125 mL	0.25 mL	0.50 mL

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Use within 4–6 weeks. Do NOT freeze reconstituted semaglutide.

■ **Do NOT freeze reconstituted semaglutide — it can cause aggregation and loss of potency.**

- Half-life ~7 days. Weekly SC injection is the standard protocol.
- Standard titration: 0.25 mg/week x 4 weeks → 0.5 mg/week x 4 weeks → 1 mg/week. Slower titration reduces GI side effects.
- Abdominal SC injection (rotate sites). Thigh and upper arm are alternatives.

Tirzepatide — GLP-1/GIP Dual Agonist

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
5 mg, 10 mg, 15 mg	BAC Water	4–6 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15–20 min. Alcohol-wipe stoppers.

- Determine target concentration based on titration stage.
- Draw BAC water per table. Inject slowly down glass wall.
- Roll gently 60–90 seconds. Dissolves readily.
- Label: 'Tirzepatide — [date] — [mg/mL]'. Refrigerate immediately.

CONCENTRATION REFERENCE				
Vial Size	BAC Water Added	Concentration	Draw per 2.5 mg dose	Draw per 5 mg dose
5 mg	2.5 mL	2 mg/mL	1.25 mL	2.50 mL
5 mg	1 mL	5 mg/mL	0.50 mL (50 units)	1.00 mL (100 units)
10 mg	2 mL	5 mg/mL	0.50 mL	1.00 mL
15 mg	3 mL	5 mg/mL	0.50 mL	1.00 mL
STORAGE AFTER RECONSTITUTION				
Refrigerate at 2–8°C. Use within 4–6 weeks.				

- Standard titration: 2.5 mg/week x 4 weeks → 5 mg/week x 4 weeks → 7.5 mg → 10 mg → 12.5 mg → 15 mg. Slow titration is key to GI tolerance.
- GIP component adds superior weight loss vs GLP-1 alone. Clinical trials show 20–22% body weight reduction.
- Weekly SC injection. Same injection sites as semaglutide.

Retatrutide — GLP-1/GIP/Glucagon Triple Agonist				
COMMON VIAL SIZES		SOLVENT	SHELF LIFE (RECON)	APPEARANCE
5 mg, 10 mg		BAC Water	4–6 weeks (refrigerated)	Clear, colorless solution
RECONSTITUTION STEPS				
1 Allow vial to warm 15–20 min. Alcohol-wipe stoppers.				
2 Draw BAC water per table. Inject slowly down glass wall.				
3 Roll gently 60 seconds. Dissolves readily.				
4 Label and refrigerate. Clear, colorless solution.				
CONCENTRATION REFERENCE				
Vial Size	BAC Water Added	Concentration	Draw per 2 mg dose	Draw per 4 mg dose
5 mg	2.5 mL	2 mg/mL	1.00 mL (100 units)	2.00 mL
5 mg	1 mL	5 mg/mL	0.40 mL (40 units)	0.80 mL
10 mg	2 mL	5 mg/mL	0.40 mL	0.80 mL
STORAGE AFTER RECONSTITUTION				
Refrigerate at 2–8°C. Use within 4–6 weeks.				

- Triple agonist. Glucagon component adds thermogenic effect and enhanced fat oxidation on top of GLP-1/GIP.

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- *Phase 3 trials show up to 24% body weight loss. Not yet FDA-approved. Research use only.*
 - *Titrate slowly. Start 2 mg/week. GI adaptation is critical.*
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SKIN, TANNING & LIBIDO PEPTIDES

PT-141 (Bremelanotide) — Melanocortin Sexual Peptide

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
10 mg	BAC Water	3–4 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15 min. Alcohol-wipe stoppers.
- 2 Draw 1–2 mL BAC water. Inject slowly down glass wall.
- 3 Roll gently 60 seconds. Dissolves readily.
- 4 Label and refrigerate. Protect from light — use amber vial or wrap in foil.
- 5 For nasal spray: dissolve 10 mg in 10 mL BAC water = 1 mg/mL solution. Transfer to nasal atomizer.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Volume per 1 mg dose	Volume per 1.75 mg dose
10 mg	2 mL	5 mg/mL (5000 mcg/mL)	0.20 mL (20 units)	0.35 mL (35 units)
10 mg	5 mL	2 mg/mL (2000 mcg/mL)	0.50 mL (50 units)	0.875 mL
10 mg	10 mL	1 mg/mL (nasal spray)	1.00 mL (nasal spray)	—

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Protect from light. Use within 3–4 weeks.

- Onset 45–60 min post-SC injection. Duration 6–12 hours. Plan accordingly.
- FDA-approved version (Vyleesi) is 1.75 mg SC. Research dosing commonly starts at 0.5–1 mg.
- Nasal spray route has faster onset but requires precise atomizer technique.
- Transient nausea and flushing are common side effects, especially at higher doses.

Melanotan II (MT-II) — Tanning & Melanocortin Peptide

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
10 mg	BAC Water	3–4 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15 min. Alcohol-wipe stoppers.
- 2 Draw 1–2 mL BAC water. Inject slowly down glass wall.
- 3 Roll gently 60 seconds. Dissolves readily.

4 Protect from light immediately — transfer to amber vial or wrap in aluminum foil.

5 Label and refrigerate. Use within 3–4 weeks.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Volume per 0.5 mg dose	Volume per 1 mg dose
10 mg	2 mL	5 mg/mL (5000 mcg/mL)	0.10 mL (10 units)	0.20 mL (20 units)
10 mg	5 mL	2 mg/mL (2000 mcg/mL)	0.25 mL (25 units)	0.50 mL (50 units)
10 mg	10 mL	1 mg/mL (1000 mcg/mL)	0.50 mL (50 units)	1.00 mL (100 units)

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Protect from light in amber vial. Use within 3–4 weeks.

■ **MT-II is extremely light-sensitive. Store in amber vial wrapped in foil. Never expose to sunlight.**

■ **MT-II activates melanocytes. Watch for changes in moles/nevi — a known research concern.**

- Nausea is very common on first injection, especially at doses above 0.25 mg. Start low.
- Tanning loading phase: 0.25–0.5 mg/day for 2–3 weeks, with UV exposure. Maintenance: 0.5–1 mg every few days.
- Also causes libido effects (same MC receptor pathway as PT-141).

GHK-Cu — Copper Peptide (Glycine-Histidine-Lysine-Copper)

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
50 mg, 100 mg, 200 mg	BAC Water (SC) or Sterile Water / PG blend (topical)	2–3 weeks SC (refrigerated)	BLUE solution (copper complex) — NORMAL. Not purple. Not colorless. Blue.

RECONSTITUTION STEPS

- 1 Allow vial to warm 15 min. Alcohol-wipe stoppers.
- 2 For SC: draw at least 3 mL BAC water — extra dilution significantly reduces injection site stinging.
- 3 Inject BAC water SLOWLY down the inside glass wall. Do not spray onto the powder.
- 4 Roll gently 60–90 seconds. The solution will turn BLUE — this is NORMAL and correct.
- 5 If injection site stinging still occurs: next time draw additional BAC water into syringe before injecting to dilute further.
- 6 For topical: dissolve in sterile water or propylene glycol (PG) 20% / sterile water 80% blend.
- 7 Label and refrigerate. The blue color is the copper complex and does not indicate degradation.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Vol per 1 mg dose (SC)	Stinging Risk
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50 mg	50 mL	1 mg/mL	1.00 mL (100 units)	Low — recommended
50 mg	25 mL	2 mg/mL	0.50 mL (50 units)	Moderate
100 mg	100 mL	1 mg/mL	1.00 mL (100 units)	Low — recommended
Topical	PG 20% / water 80%	Variable	Apply to skin	N/A
STORAGE AFTER RECONSTITUTION				
Refrigerate at 2–8°C. Protect from light. SC: 2–3 weeks. Topical: 4–6 weeks.				

■ **GHK-Cu solution is BLUE — not purple, not colorless. Blue = copper complex formed correctly.**

■ **A colorless GHK-Cu solution may mean the copper was lost. Blue = correct.**

■ **Always use at least 3 mL BAC water to reduce stinging. If stinging still occurs, draw more BAC water into syringe before injecting.**

- *GHK-Cu degrades faster than most peptides due to copper oxidation. Use within 2–3 weeks.*
- *Topical is the most common route for skin, hair, and wound healing research.*
- *Lower concentration = less stinging. 3 mL minimum is the most reliable fix for injection site discomfort.*

COGNITIVE & NASAL PEPTIDES

Semax — ACTH(4–7) Analogue (Nasal)

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
1 mg, 5 mg, 10 mg	BAC Water	3–4 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15 min. Alcohol-wipe stoppers.
- 2 Determine target concentration for nasal spray (1 mg/mL is standard for most protocols).
- 3 Draw BAC water per table. Inject slowly down glass wall.
- 4 Roll gently 60 seconds. Dissolves readily.
- 5 Transfer to nasal spray atomizer. Label and refrigerate.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Drops per 100 mcg dose (Nasal)
1 mg	1 mL	1 mg/mL (1000 mcg/mL)	0.10 mL ~ 2 drops per nostril
5 mg	5 mL	1 mg/mL (1000 mcg/mL)	0.10 mL ~ 2 drops per nostril
5 mg	2.5 mL	2 mg/mL (2000 mcg/mL)	0.05 mL ~ 1 drop per nostril

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C in atomizer or original vial. Use within 3–4 weeks.

- Nasal route is standard. Each nostril receives 1–2 drops (50–100 mcg). Sniff gently after application.
- Na-Semax (N-acetylated) has the same reconstitution protocol but is considered more potent per mcg.
- BDNF-boosting effects are the primary research focus. Cognitive enhancement, neuroprotection, anxiety reduction.

Selank — Anxiolytic Peptide (Nasal)

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
5 mg, 10 mg	BAC Water	3–4 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15 min. Alcohol-wipe stoppers.
- 2 Draw BAC water per table. Standard is 1 mg/mL for nasal use.
- 3 Inject slowly down glass wall. Roll gently 60 seconds.
- 4 Transfer to nasal spray atomizer. Label and refrigerate.

CONCENTRATION REFERENCE			
Vial Size	BAC Water Added	Concentration	Drops per 250 mcg dose (Nasal)
5 mg	5 mL	1 mg/mL (1000 mcg/mL)	0.25 mL ~ 5 drops
5 mg	2.5 mL	2 mg/mL (2000 mcg/mL)	0.125 mL ~ 2–3 drops
10 mg	10 mL	1 mg/mL (1000 mcg/mL)	0.25 mL ~ 5 drops
STORAGE AFTER RECONSTITUTION			
Refrigerate at 2–8°C in atomizer. Use within 3–4 weeks.			

- *Selank modulates the GABAergic system. Research focus: anxiety, stress, cognitive function.*
- *Na-Selank Amidate is the longer-acting variant. Same reconstitution protocol.*
- *No sedation reported in research at typical doses. Anxiolytic without drowsiness is the key profile.*

LONGEVITY & ANTI-AGING PEPTIDES

Epitalon (Epithalon) — Telomere Peptide

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
10 mg	BAC Water	4–6 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15 min. Alcohol-wipe stoppers.
- 2 Draw 1 mL BAC water (for 10 mg/mL) or 2 mL (for 5 mg/mL).
- 3 Inject slowly down glass wall. Roll gently 60 seconds.
- 4 Epitalon dissolves readily. Clear, colorless solution.
- 5 Label and refrigerate. Typical Khavinson protocol: 10-day course twice per year.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Volume per 10 mg dose	Volume per 5 mg dose
10 mg	1 mL	10 mg/mL	1.00 mL (100 units)	0.50 mL (50 units)
10 mg	2 mL	5 mg/mL	2.00 mL	1.00 mL (100 units)

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Use within 4–6 weeks.

- Original Khavinson protocol: 10 mg/day SC for 10 consecutive days. Repeat 2x/year.
- Epitalon stimulates telomerase and pineal gland function in research models.
- Na-Epitalon (N-acetylated) has the same reconstitution protocol.

MOTS-C — Mitochondrial Peptide (Metabolic & Longevity)

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
5 mg, 10 mg	BAC Water	4–6 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15 min. Alcohol-wipe stoppers.
- 2 Draw 1–2 mL BAC water. Inject slowly down glass wall.
- 3 Roll gently 60 seconds. Dissolves readily.
- 4 Label and refrigerate. Clear, colorless solution.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Volume per 5 mg dose	Volume per 10 mg dose
5 mg	1 mL	5 mg/mL	1.00 mL (100 units)	—

5 mg	2.5 mL	2 mg/mL	2.50 mL	—
10 mg	2 mL	5 mg/mL	1.00 mL (100 units)	2.00 mL
STORAGE AFTER RECONSTITUTION				
Refrigerate at 2–8°C. Use within 4–6 weeks.				

- MOTS-C is a mitochondrial-derived peptide. Exercise timing (pre-workout) enhances metabolic effects in research.
- Emerging longevity research target. AMPK activation is the primary mechanism.

SS-31 (Elamipretide) — Mitochondrial Membrane Protector

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
10 mg, 20 mg	BAC Water	2–4 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15 min. Alcohol-wipe stoppers.
- 2 Draw BAC water per table. Work quickly to minimize air/light exposure.
- 3 Inject slowly down glass wall. Roll gently 60 seconds.
- 4 Transfer to amber vial or wrap in foil immediately. SS-31 is oxidation-sensitive.
- 5 Label and refrigerate. Solution should be clear and colorless.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Volume per 10 mg dose	Volume per 20 mg dose
10 mg	1 mL	10 mg/mL	1.00 mL (100 units)	—
10 mg	2 mL	5 mg/mL	2.00 mL	—
20 mg	2 mL	10 mg/mL	1.00 mL (100 units)	2.00 mL

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Protect from light in amber vial. Use within 2–4 weeks.

- **Yellow color after reconstitution = oxidation = discard. Clear and colorless only.**
- **Protect from light. Oxidation can occur within hours if exposed to bright light.**
- SS-31 is in Phase 2 clinical trials for heart failure (EMPA-HEART) and Barth syndrome.
- Targets cardiolipin on the inner mitochondrial membrane. Used in cardiac and anti-aging research.

Thymosin Alpha-1 (Ta1) — Immune Modulator

COMMON VIAL SIZES	SOLVENT	SHELF LIFE (RECON)	APPEARANCE
1.6 mg	BAC Water	3–4 weeks (refrigerated)	Clear, colorless solution

RECONSTITUTION STEPS

- 1 Allow vial to warm 15 min. Alcohol-wipe stoppers.

2 Draw exactly 1 mL BAC water for the standard 1.6 mg vial.

3 Inject slowly down glass wall. Roll gently 60 seconds.

4 Dissolves readily. Label and refrigerate.

CONCENTRATION REFERENCE

Vial Size	BAC Water Added	Concentration	Volume per 1.6 mg dose
1.6 mg	1 mL	1.6 mg/mL	1.00 mL (100 units) — entire vial
1.6 mg	0.8 mL	2 mg/mL	0.80 mL (80 units)

STORAGE AFTER RECONSTITUTION

Refrigerate at 2–8°C. Use within 3–4 weeks.

- Sold commercially as Zadaxin (FDA-approved in 35+ countries). Research vials are typically 1.6 mg to match Zadaxin dosing.
- Typical protocol: 1.6 mg SC twice weekly. Used in immune modulation, chronic infection, and cancer support research.

CONCENTRATION MATH REFERENCE

How to Calculate Your Draw Volume

The formula for calculating how many mL to draw for a given dose is:

$$\text{Draw Volume (mL)} = \text{Desired Dose (mg)} \div \text{Concentration (mg/mL)}$$

Unit conversion for insulin syringes (U-100):

U-100 insulin syringes are calibrated for 100 units per mL. 1 mL = 100 units. So 0.10 mL = 10 units. 0.25 mL = 25 units.

Example calculations:

BPC-157 — 250 mcg dose, vial reconstituted at 2.5 mg/mL

→ 250 mcg = 0.25 mg. Draw = $0.25 \div 2.5 = 0.10$ mL = 10 units on U-100 syringe.

Semaglutide — 0.5 mg dose, reconstituted at 2 mg/mL

→ Draw = $0.5 \div 2 = 0.25$ mL = 25 units on U-100 syringe.

Ipamorelin — 200 mcg dose, reconstituted at 1 mg/mL

→ 200 mcg = 0.2 mg. Draw = $0.2 \div 1 = 0.20$ mL = 20 units on U-100 syringe.

IGF-1 LR3 — 100 mcg dose, reconstituted at 1 mg/mL

→ 100 mcg = 0.1 mg. Draw = $0.1 \div 1 = 0.10$ mL = 10 units on U-100 syringe.

Tirzepatide — 5 mg dose, reconstituted at 5 mg/mL

→ Draw = $5 \div 5 = 1.00$ mL = 100 units on U-100 syringe.

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