PEPTIDE REFERENCE GUIDE

Comprehensive Research Database

107 Peptides | Comprehensive Research Database

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5-Amino-1MQ

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Also Known As	5-Amino-1MQ, 5-amino-1-methylquinolinium, NNMTi, 5A-1MQ
Category	Metabolic & Weight Management
Classification / Peptide Type	Selective NNMT enzyme inhibitor; metabolic regulatory small molecule
Half-Life	Approximately 7 hours following subcutaneous administration

DESCRIPTION

5-Amino-1MQ is a selective inhibitor of NNMT (nicotinamide N-methyltransferase) that acts as a metabolic switch to reduce fat storage and boost energy expenditure. By blocking NNMT, it allows NAD+ precursors to remain available for cellular energy production, stimulating fat cell conversion from storage to active burning mode. Research in obese mice showed significant fat mass reduction and improved metabolic health without changes in food intake.

BENEFITS

Reduces fat mass by inhibiting NNMT; increases NAD+ availability; promotes fat burning; improves metabolic rate and insulin sensitivity without appetite suppression.

SIDE EFFECTS

Limited human safety data; no serious adverse effects reported in preclinical studies. Oral bioavailability is good. Minimal reported side effects at research doses.

PROTOCOL

5-Amino-1MQ Goal: Study NNMT inhibition and metabolic reprogramming. Available oral or injectable form.

DOSING TABLES

5-Amino-1MQ Oral Protocol

Phase	Daily Dose (mg)	Frequency
Weeks 1-2	50 mg	Once daily
Weeks 3-4	100 mg	Once daily
Weeks 5-12	100-150 mg	Once daily

Acetyl Hexapeptide-3 (Argireline)

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Also Known As	Acetyl Hexapeptide-3, Acetyl Hexapeptide-8, Argireline, Argireline NP, Hexapeptide-3, Hexapeptide-8
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	Neurotransmitter inhibitor peptide; SNARE complex competitive inhibitor; cosmeceutical anti-wrinkle agent
Half-Life	—

DESCRIPTION

Acetyl Hexapeptide-3, better known as Argireline, is a gentle skin peptide nicknamed Botox in a bottle because it smooths wrinkles without needles. It works by calming the tiny muscle movements in your face that cause lines. Clinical tests showed it reduced wrinkle depth by up to 30% after just a month of using creams with it.

BENEFITS

Known as a topical Botox alternative; it works by inhibiting the release of neurotransmitters that cause muscle contraction, effectively reducing the depth of dynamic facial wrinkles (like crow's feet and forehead lines).

SIDE EFFECTS

Generally very safe; occasional reports of localized skin irritation, redness, or dryness when used topically.

PROTOCOL

Research Goal: Evaluate the non-invasive reduction of muscle contraction-induced skin wrinkling via inhibition of the SNARE complex. Preparation: Typically used as a topical solution (10% concentration).

DOSING TABLES

Topical Application Protocol

Concentration	Frequency	Application Area
5% concentration	2x daily (AM/PM)	Full face, focus on expression lines
10% concentration	2x daily (AM/PM)	Targeted wrinkle areas (crow's feet, forehead)
Clinical max	10%	Periorbital and glabellar regions

Adamax

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Also Known As	—
Category	Cognitive & Neurological Health
Classification / Peptide Type	Linear heptapeptide with N-terminal acetyl group and C-terminal adamantane moiety
Half-Life	Estimated 4-8 hours in circulation (extended significantly relative to native Semax)

DESCRIPTION

Adamax is an enhanced Semax analog featuring N-terminal adamantane acetylation and C-terminal amidation modifications that extend half-life, improve blood-brain barrier penetration, and amplify BDNF expression, neuroplasticity, and cognitive enhancement compared to parent Semax.

BENEFITS

Enhances memory, mental clarity, and neuroplasticity (BDNF); provides neuroprotection and mood support by modulating dopamine and serotonin.

SIDE EFFECTS

High safety profile with no major adverse effects in short-term trials; mild redness or itching at the injection site may occur.

PROTOCOL

Adamax (10mg) Goal: Support cognitive enhancement, neuroprotection, and neuroplasticity via BDNF upregulation. Reconstitute with 3.0 mL bacteriostatic water.

DOSING TABLES

Adamax (10mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	100 mcg	3 units (0.03 mL)
Weeks 3-4	200 mcg	6 units (0.06 mL)
Weeks 5-12	300 mcg	9 units (0.09 mL)

Adipotide (FTPP)

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Also Known As	Adipotide, FTPP (Fat-Targeted Proapoptotic Peptide), Prohibitin-TP01, TP-1
Category	Metabolic & Weight Management
Classification / Peptide Type	Vascular-targeting proapoptotic agent; peptidomimetic angiogenesis inhibitor
Half-Life	—

DESCRIPTION

Adipotide (FTPP) is an experimental peptidomimetic designed for rapid weight loss by targeting the blood supply of white adipose tissue, causing fat cells to undergo apoptosis (programmed cell death). Animal studies showed dramatic weight loss but significant kidney toxicity concerns limit human use.

BENEFITS

An experimental peptidomimetic designed for rapid weight loss; works by targeting the blood supply of white adipose tissue, causing fat cells to undergo apoptosis (programmed cell death).

SIDE EFFECTS

High risk of renal (kidney) toxicity in animal studies, including dehydration and changes in serum creatinine. Not recommended for human use outside of clinical trials.

PROTOCOL

Research Goal: Investigating the induction of fat loss through targeted destruction of blood vessels supplying white adipose tissue.

DOSING TABLES

Adipotide Research Protocol

Phase	Daily Dose	Route	Notes
Weeks 1-4	0.01 mg/kg SC	Subcutaneous	~0.7 mg/day for 70 kg subject
Max duration	28 days	SC	Monitor kidney function throughout

AHK (Tripeptide-3)

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Also Known As	Tripeptide-3, AHK, Copper Tripeptide-3, AHK-Cu, Alanine-Histidine-Lysine, Acetyl tripeptide-3
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	Cosmeceutical peptide; fibroblast-activating agent; collagen synthesis stimulator
Half-Life	—

DESCRIPTION

AHK (Tripeptide-3) is a copper-binding tripeptide that activates fibroblasts to boost collagen and elastin production, improving skin firmness and wound healing. It is a foundational peptide in cosmeceutical formulations for anti-aging skin remodeling.

BENEFITS

Stimulates collagen and elastin synthesis; improves skin firmness and texture; supports wound healing and hair follicle health.

SIDE EFFECTS

Excellent safety profile; very rare reports of mild localized skin irritation or sensitivity when used topically.

PROTOCOL

Research Goal: Evaluate fibroblast activation and collagen synthesis stimulation. Preparation: Used topically in serum or cream formulations at 0.01-0.1% concentration.

DOSING TABLES

AHK Topical Protocol

Concentration	Frequency	Application
0.01% concentration	2x daily	Serum or cream base
0.1% concentration	2x daily	Targeted skin repair
Cosmeceutical use	0.01–0.1%	Combine with copper chelator

AHK-Cu

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Also Known As	AHK-Cu, Copper AHK, Copper Tripeptide, Copper Peptide AHK
Category	Healing & Tissue Repair
Classification / Peptide Type	Copper chelating peptide; wound healing agent; tissue remodeling peptide
Half-Life	—

DESCRIPTION

AHK-Cu is a copper-chelated form of the AHK tripeptide offering enhanced bioavailability and potency for wound healing, tissue regeneration, and skin remodeling. The copper complexation improves cellular uptake and amplifies collagen stimulation and anti-inflammatory effects.

BENEFITS

Highly effective for wound healing and skin rejuvenation. Stimulates collagen synthesis, reduces inflammation, and supports hair follicle regeneration.

SIDE EFFECTS

Excellent safety profile; very rare reports of mild skin irritation. Copper overload is not a concern at cosmetic concentrations.

PROTOCOL

Research Goal: Evaluate copper-mediated enhancement of skin repair and wound healing. Preparation: Typically used in topical formulations or reconstituted for localized injection research.

DOSING TABLES

AHK-Cu Topical Protocol

Concentration	Frequency	Application
0.01% concentration	2x daily	Serum or lotion base
0.1% concentration	2x daily (AM/PM)	Targeted wound/repair areas
Cosmeceutical use	0.01–0.1%	Can stack with GHK-Cu

AICAR

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Also Known As	AICAR, Acadesine, AICA Riboside, 5-Aminoimidazole-4-carboxamide ribonucleotide
Category	Metabolic & Weight Management
Classification / Peptide Type	AMP-activated protein kinase (AMPK) activator; exercise mimetic nucleotide analog
Half-Life	—

DESCRIPTION

AICAR (Acadesine) is an AMPK activator that mimics the cellular energy depletion signal caused by intense exercise, triggering increased fat oxidation, improved insulin sensitivity, and muscle fiber adaptations without physical activity. Animal research showed dramatic endurance improvements and fat loss. Often grouped with peptides in research settings despite being a nucleotide analog.

BENEFITS

Activates AMPK to mimic exercise signals; improves fat oxidation and endurance; increases insulin sensitivity; promotes slow-twitch muscle fiber development.

SIDE EFFECTS

Limited human safety data; potential hypoglycemia; may promote uric acid production (gout risk); cardiovascular effects at high doses.

PROTOCOL

AICAR Research Goal: Study AMPK activation and exercise mimicry. Research dose: 150-500 mg SC daily.

DOSING TABLES

AICAR Research Protocol

Phase	Dose	Route	Duration
Animal studies	500 mg/kg	IP injection	4 weeks
Human community protocol	150-250 mg	SC injection	Daily x 4-8 weeks
Note	—	No established clinical dosing	Research only

AOD-9604

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Also Known As	AOD-9604, AOD9604, Anti-Obesity Drug 9604, HGH Fragment 177-191
Category	Metabolic & Weight Management
Classification / Peptide Type	Peptide fragment; lipolytic agent; HGH C-terminal fragment
Half-Life	Approximately 4 minutes (rapid degradation)

DESCRIPTION

AOD-9604 is a modified fragment of human growth hormone (amino acids 176-191) engineered specifically for fat burning without the growth-promoting or insulin-desensitizing effects of full HGH. It directly stimulates lipolysis (fat breakdown) and inhibits lipogenesis (new fat formation) through beta-3 adrenergic receptors.

BENEFITS

Stimulates fat breakdown (lipolysis) and inhibits new fat formation; no blood sugar or IGF-1 side effects unlike full HGH; well tolerated in human trials.

SIDE EFFECTS

Very well tolerated in human trials; mild injection site reactions are the primary side effect. No significant impact on blood glucose or IGF-1 levels.

PROTOCOL

Goal: Support metabolic fat reduction. Reconstitute AOD-9604 (2mg) with 2.0 mL bacteriostatic water, or AOD-9604 (5mg) with 3.0 mL.

DOSING TABLES

AOD-9604 (2mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	200 mcg	30 units (0.30 mL)
Weeks 3-4	300 mcg	45 units (0.45 mL)
Weeks 5-12	500 mcg	75 units (0.75 mL)

ARA-290

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Also Known As	ARA-290, Cibinetide, ARA290
Category	Immune Support & Inflammation
Classification / Peptide Type	Erythropoietin-derived peptide; innate repair receptor agonist; neuroprotective agent
Half-Life	—

DESCRIPTION

ARA-290 is a next-generation repair peptide derived from erythropoietin that fixes damaged nerves and calms down overactive inflammation without the blood-building or side effects of full EPO. It targets the Innate Repair Receptor (IRR) to reduce neuropathic pain, promote nerve regeneration, and modulate chronic inflammation.

BENEFITS

Reduces neuropathic pain and promotes nerve regeneration; anti-inflammatory without EPO side effects; clinical benefits in diabetic neuropathy and sarcoidosis.

SIDE EFFECTS

Well tolerated in clinical trials; no significant adverse effects reported. Does not affect red blood cell production or blood pressure.

PROTOCOL

Ara-290 (16mg) Goal: Study innate repair receptor activation and neuroprotective pathways. Reconstitute with 3.0 mL bacteriostatic water.

DOSING TABLES

Ara-290 (16 mg)

Phase	Daily Dose (mg)	Units (mL)
Standard	4 mg	100 units (1.0 mL)
High Dose	8 mg	200 units (Split 1.0 mL x 2)

B7-33

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Also Known As	B7-33, B7-33 peptide, Relaxin-2 B-chain fragment
Category	Healing & Tissue Repair
Classification / Peptide Type	Relaxin-2-derived peptide; antifibrotic agent; vasodilatory peptide
Half-Life	Expected half-life less than H2 relaxin (~30 minutes in rodents), suggesting rapid in vivo degradation

DESCRIPTION

B7-33 is a single-chain peptide derived from the B-chain of relaxin-2 that provides potent antifibrotic and vasodilatory effects without the complex two-chain structure of full relaxin. Research shows it reduces organ fibrosis, improves cardiac function, and promotes tissue remodeling.

BENEFITS

Reduces organ fibrosis (heart, kidney, lung); vasodilatory effects; promotes tissue remodeling and wound healing without full relaxin complexity.

SIDE EFFECTS

Generally well-tolerated in preclinical studies; potential for hypotension at high doses due to vasodilatory activity.

PROTOCOL

Research Goal: Study antifibrotic and vasodilatory mechanisms via RXFP1 receptor activation. Reconstitute with bacteriostatic water before use.

DOSING TABLES

B7-33 Research Protocol

Phase	Daily Dose	Route	Frequency
Standard	100–250 mcg	SC or IP	Once daily
Escalated	250–500 mcg	Subcutaneous	Once daily
Animal reference	0.25 mg/kg	Subcutaneous	Twice daily (every 12 hrs)

BPC-157

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Also Known As	BPC-157, Bepecin, PL-14736, Body Protection Compound 157, Pentadecapeptide BPC 157
Category	Healing & Tissue Repair
Classification / Peptide Type	Cytoprotective peptide with gastroprotective, wound healing, and tissue regeneration properties
Half-Life	—

DESCRIPTION

BPC-157 is a synthetic 15-amino acid peptide derived from human gastric juice that dramatically accelerates healing in muscles, tendons, ligaments, bones, and the digestive system by boosting blood vessel formation around injured areas. Research in animals showed it could cut healing time in half for tendon ruptures and muscle tears, and one human study found significant chronic knee pain relief lasting over six months after a single injection.

BENEFITS

Accelerates healing in gut, tendon, muscle, and skin; possesses strong anti-inflammatory and cytoprotective properties; promotes angiogenesis at injury sites.

SIDE EFFECTS

Good tolerability in early trials; side effects are primarily limited to mild injection-site reactions; no significant systemic adverse events reported.

PROTOCOL

Goal: Support systemic tissue repair and angiogenesis. Reconstitute BPC-157 (5mg) with 2.0 mL or (10mg) with 3.0 mL bacteriostatic water.

DOSING TABLES

BPC-157 (5mg)

Phase	Daily Dose (mcg)	Units (mL)
Standard	250 mcg	10 units (0.10 mL)
Accelerated	500 mcg	20 units (0.20 mL)
Alt BID	250 mcg x2	10 units twice daily

BPC-157 (10mg)

Phase	Daily Dose (mcg)	Units (mL)
Standard	250 mcg	5 units (0.05 mL)
Accelerated	500 mcg	10 units (0.10 mL)
Intensive	1000 mcg	20 units (0.20 mL)

Bronchogen

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Also Known As	Bronchogen, Bronchial bioregulator, Ala-Glu-Asp-Leu, AEDL tetrapeptide
Category	Cardiovascular & Pulmonary Health
Classification / Peptide Type	Bioregulatory peptide; bronchial tissue modulator; epigenetic regulator
Half-Life	—

DESCRIPTION

Bronchogen is a tetrapeptide bioregulator (Ala-Glu-Asp-Leu) that targets bronchial epithelial cells to restore healthy function, reduce inflammation, and regenerate airway tissue damaged by chronic respiratory disease, smoking, or aging. It works through epigenetic gene regulation to normalize bronchial cell activity.

BENEFITS

Supports bronchial tissue repair and regeneration; reduces airway inflammation; may improve lung function in chronic respiratory conditions.

SIDE EFFECTS

Excellent safety profile based on bioregulator research history; generally very well tolerated.

PROTOCOL

Bronchogen (20mg) Goal: Study bronchial tissue normalization and epigenetic gene regulation. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

Bronchogen (20mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	200 mcg	2 units (0.02 mL)
Weeks 3-4	400 mcg	4 units (0.04 mL)
Weeks 5-12	600 mcg	6 units (0.06 mL)

Cagrilinitide

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Also Known As	—
Category	Metabolic & Weight Management
Classification / Peptide Type	Linear 37-amino acid peptide with strategic amino acid modifications
Half-Life	Approximately 5-6 days

DESCRIPTION

Cagrilintide is a long-acting amylin analog that tells your brain you are full faster and keeps you full longer. It is engineered to last an entire week in the body instead of minutes like natural amylin. It works by attaching to sensors in the brain that control hunger, significantly reducing caloric intake and supporting substantial weight loss in obesity treatment.

BENEFITS

Reduces appetite and caloric intake; supports significant weight loss; improves metabolic markers; complements GLP-1 therapies when combined.

SIDE EFFECTS

Nausea and vomiting are the most common side effects, especially during dose escalation. Injection site reactions also reported.

PROTOCOL

Goal: Study amylin receptor activation and appetite suppression for obesity research. Reconstitute with bacteriostatic water per vial size.

DOSING TABLES

Cagrilinitide Research Protocol

Phase	Weekly Dose	Route
Weeks 1-4	0.16 mg	SC weekly
Weeks 5-8	0.32 mg	SC weekly
Weeks 9-12	0.6 mg	SC weekly
Weeks 13-16	1.2 mg	SC weekly
Weeks 17+	2.4 mg	SC weekly (maintenance)

Cagrilintide

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Also Known As	Cagrilintide, AM833, CagriSema (in combination with semaglutide)
Category	Metabolic & Weight Management
Classification / Peptide Type	Amylin analog; long-acting amylin receptor agonist; appetite-suppressing peptide hormone analog
Half-Life	Approximately 5-6 days (extended via fatty acid conjugation)

DESCRIPTION

Cagrilintide is a fatty acid-conjugated amylin analog with a ~5-6 day half-life that suppresses appetite through hypothalamic amylin receptor activation, slows gastric emptying, and synergizes with GLP-1 agonists for enhanced weight loss. Clinical trials show up to 15.6% body weight reduction as monotherapy and greater reductions in combination with semaglutide.

BENEFITS

Potent appetite suppression; significant weight loss (up to 15.6% monotherapy); complements GLP-1 agonists; improves metabolic parameters.

SIDE EFFECTS

Nausea, vomiting, decreased appetite during initiation; injection site reactions. Generally well-tolerated with dose titration.

PROTOCOL

Goal: Amylin receptor agonism for appetite suppression and metabolic research. Reconstitute with bacteriostatic water.

DOSING TABLES

Cagrilintide Research Protocol

Phase	Weekly Dose	Route
Weeks 1-4	0.16 mg	SC weekly
Weeks 5-8	0.32 mg	SC weekly
Weeks 9-12	0.6 mg	SC weekly
Weeks 13-16	1.2 mg	SC weekly
Weeks 17+	2.4 mg	SC weekly (maintenance)

Cardiogen

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Also Known As	Cardiogen, Cardiac bioregulator, Ala-Glu-Asp-Arg, AEDR tetrapeptide
Category	Cardiovascular & Pulmonary Health
Classification / Peptide Type	Bioregulatory peptide; cardiac tissue modulator; gene expression regulator
Half-Life	—

DESCRIPTION

Cardiogen is a tetrapeptide bioregulator (Ala-Glu-Asp-Arg) targeting cardiac muscle cells to restore normal gene expression, reduce oxidative stress, and support heart tissue repair and regeneration. Research shows it reduces cardiac damage from oxidative stress and supports cardiomyocyte recovery.

BENEFITS

Supports cardiac tissue regeneration and repair; reduces oxidative stress in cardiomyocytes; may improve cardiac function in age-related decline.

SIDE EFFECTS

Excellent safety profile based on bioregulator research history; generally very well tolerated.

PROTOCOL

Cardiogen (20mg) Goal: Study cardiac bioregulatory mechanisms and cardiomyocyte protection. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

Cardiogen (20mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	200 mcg	2 units (0.02 mL)
Weeks 3-4	400 mcg	4 units (0.04 mL)
Weeks 5-12	600 mcg	6 units (0.06 mL)

Cartalax

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Also Known As	Cartalax, Cartilage bioregulator, Ala-Glu-Asp-Pro, AEDP tetrapeptide
Category	Organ-Specific Bioregulators
Classification / Peptide Type	Bioregulatory peptide; cartilage tissue modulator; epigenetic regulator
Half-Life	—

DESCRIPTION

Cartalax is a tetrapeptide bioregulator targeting cartilage and connective tissue cells to stimulate chondrocyte proliferation, reduce inflammatory cytokines, and support cartilage matrix production and repair. Research indicates benefits for osteoarthritis and joint health maintenance.

BENEFITS

Stimulates chondrocyte proliferation; reduces cartilage inflammation; supports joint matrix synthesis; potential benefits for osteoarthritis.

SIDE EFFECTS

Very good safety profile; well tolerated in bioregulator research studies.

PROTOCOL

Cartalax (20mg) Goal: Study chondrocyte modulation and cartilage repair mechanisms. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

Cartalax (20mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	200 mcg	2 units (0.02 mL)
Weeks 3-4	400 mcg	4 units (0.04 mL)
Weeks 5-12	600 mcg	6 units (0.06 mL)

Chonluten

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Also Known As	Chonluten, Lung bioregulator, Glu-Asp-Leu, EDL tripeptide
Category	Cardiovascular & Pulmonary Health
Classification / Peptide Type	Bioregulatory peptide; pulmonary tissue modulator; bronchial epithelial regulator
Half-Life	—

DESCRIPTION

Chonluten is a tripeptide bioregulator (Glu-Asp-Leu) that targets lung and bronchial epithelial cells to restore normal gene expression and tissue function in damaged pulmonary tissue. It supports respiratory repair and regeneration, particularly after damage from smoking, pollution, or chronic disease.

BENEFITS

Supports lung tissue repair; reduces bronchial inflammation; promotes pulmonary regeneration; potential benefits in COPD and chronic respiratory conditions.

SIDE EFFECTS

Excellent safety profile; very well tolerated with minimal reported adverse effects.

PROTOCOL

Chonluten (20mg) Goal: Study pulmonary tissue normalization and bronchial cell regeneration. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

Chonluten (20mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	200 mcg	2 units (0.02 mL)
Weeks 3-4	400 mcg	4 units (0.04 mL)
Weeks 5-12	600 mcg	6 units (0.06 mL)

CJC-1295 (No DAC)

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Also Known As	CJC-1295 without DAC, Mod GRF 1-29, Modified GRF (1-29), CJC-1295 No DAC, GRF (1-29)
Category	Muscle & Physical Performance
Classification / Peptide Type	GHRH analog; growth hormone secretagogue; pituitary stimulating peptide
Half-Life	Approximately 30 minutes

DESCRIPTION

CJC-1295 (No DAC) is a modified GHRH analog that stimulates natural pulsatile GH release from the pituitary with a 30-minute half-life, making it ideal for mimicking the body's natural GH release patterns when used with GHRPs like Ipamorelin. It preserves natural feedback mechanisms while amplifying GH pulses.

BENEFITS

Stimulates natural pulsatile GH release; improves body composition, muscle growth, fat loss, and recovery; preserves natural GH feedback loops.

SIDE EFFECTS

Injection site reactions, water retention, tingling, and potential temporary insulin resistance at high doses. Generally well tolerated.

PROTOCOL

Goal: Stimulate pulsatile GH release for body composition research. Often combined with Ipamorelin. Reconstitute with bacteriostatic water.

DOSING TABLES

CJC-1295 No DAC (2mg)

Week	Daily Dose (mcg)	Units (mL)
Weeks 1-2	100 mcg	15 units (0.15 mL)
Weeks 3-4	200 mcg	30 units (0.30 mL)
Weeks 5-12	300 mcg	45 units (0.45 mL)

CJC-1295 with DAC

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Also Known As	CJC-1295 DAC, CJC-1295 with Drug Affinity Complex, DAC:GRF, Long-acting GHRH analog
Category	Growth Hormone Optimization
Classification / Peptide Type	GHRH analog; long-acting growth hormone secretagogue; albumin-binding modified peptide
Half-Life	Approximately 6-8 days (dramatically extended by albumin binding via DAC modification)

DESCRIPTION

CJC-1295 with DAC is a long-acting GHRH analog where a Drug Affinity Complex (DAC) modification causes the peptide to bind covalently to serum albumin after injection, extending its half-life to 6-8 days and enabling once-weekly dosing. Unlike CJC-1295 No-DAC which creates sharp pulsatile GH release mimicking natural patterns, the DAC version creates a sustained lower-level GH elevation throughout the week. Clinical data from Teichman et al. (2006) showed single injections of CJC-1295 DAC increased GH 2-10 fold for 6 or more days and elevated IGF-1 by 1.5-3 times for 9-11 days.

BENEFITS

Sustained GH/IGF-1 elevation from 1-2 weekly injections; improves body composition, muscle growth, fat loss, and recovery; highly convenient dosing schedule vs daily peptides.

SIDE EFFECTS

Water retention, joint and muscle pain, carpal tunnel symptoms, potential blunting of natural GH pulsatility with continuous use, insulin resistance at higher doses. Less synergistic with GHRPs than No-DAC version.

PROTOCOL

Reconstitute 2 mg vial with 1.0 mL BAC water (2 mg/mL) or 5 mg vial with 2.0 mL (2.5 mg/mL). Inject SC 1-2x per week. Evening injection preferred. Standard research dose: 1-2 mg per week.

DOSING TABLES

CJC-1295 DAC (2mg) Titration

Phase	Dose Per Injection	Frequency
Weeks 1-2	300 mcg	Twice weekly
Weeks 3-4	500 mcg	Twice weekly
Weeks 5-8	750 mcg	Twice weekly
Weeks 9-12	1000 mcg (1 mg)	Once or twice weekly

CJC-1295 DAC (5mg) Protocol

Phase	Dose Per Injection	Frequency
Weeks 1-4	500-750 mcg	Once weekly
Weeks 5-12	1000-2000 mcg	Once weekly (research standard)

Cortagen

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Also Known As	Cortagen, Cortical bioregulator, Ala-Glu-Asp-Pro, Cortex peptide bioregulator
Category	Cognitive & Neurological Health
Classification / Peptide Type	Bioregulatory peptide; cortical tissue modulator; neuroprotective agent
Half-Life	—

DESCRIPTION

Cortagen is a bioregulatory peptide targeting cortical brain cells to restore normal neuronal gene expression, support cognitive function, and provide neuroprotection against age-related decline and oxidative stress. Research suggests benefits for memory, learning, and neurological health maintenance.

BENEFITS

Supports cortical neuron health; may improve memory and cognitive function; neuroprotective against aging and oxidative damage.

SIDE EFFECTS

Excellent safety profile based on bioregulator research history; generally very well tolerated.

PROTOCOL

Cortagen (20mg) Goal: Study cortical neuroprotection and cognitive bioregulation. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

Cortagen (20mg) Research Protocol

Phase	Daily Dose (mcg)	Units (mL)
Days 1-5	200 mcg	3 units (0.03 mL)
Days 6-10	400 mcg	6 units (0.06 mL)
Days 11-30	400-600 mcg	6-9 units (0.06-0.09 mL)
Cycle	10-30 days	1-2 cycles per year

Decapeptide-12

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Also Known As	Decapeptide-12, DP-12, Lumixyl, Bright Peptide
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	Melanogenesis inhibitor; tyrosinase inhibitor; skin-brightening cosmeceutical peptide
Half-Life	—

DESCRIPTION

Decapeptide-12 is a skin-brightening peptide that inhibits tyrosinase, the key enzyme in melanin production, to reduce hyperpigmentation, age spots, and uneven skin tone without the irritation of traditional brightening agents like hydroquinone. Clinical studies show significant reduction in dark spots with excellent tolerability.

BENEFITS

Reduces hyperpigmentation and dark spots; inhibits tyrosinase; evens skin tone; well tolerated alternative to hydroquinone.

SIDE EFFECTS

Excellent safety profile; no significant irritation; suitable for sensitive skin types. Generally better tolerated than chemical brightening agents.

PROTOCOL

Research Goal: Evaluate selective melanogenesis inhibition for hyperpigmentation treatment. Typically formulated at 5-10 ppm in topical preparations.

DOSING TABLES

Decapeptide-12 Topical Protocol

Concentration	Frequency	Application
5 ppm concentration	2x daily (AM/PM)	Full face brightening serum
10 ppm concentration	2x daily	Targeted hyperpigmentation spots
Cosmeceutical use	5–10 ppm	Combine with vitamin C or niacinamide

Dihexa

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Also Known As	Dihexa, PNB-0408, N-hexanoic-Tyr-Ile-(6)-aminohexanoic amide
Category	Cognitive & Neurological Health
Classification / Peptide Type	HGF/MET pathway activator; synaptogenic peptide; nootropic agent
Half-Life	Approximately 4-8 hours estimated

DESCRIPTION

Dihexa is an extraordinarily potent nootropic peptide derived from angiotensin IV that activates HGF/MET signaling to massively amplify synaptic density, neuroplasticity, and cognitive performance. Animal research suggests it is 7 orders of magnitude more potent than BDNF at improving cognitive function, with effects on memory and learning persisting long after administration.

BENEFITS

Massively amplifies synaptic density and neuroplasticity; profound improvements in memory and learning in animal models; potential for neurodegeneration treatment.

SIDE EFFECTS

Very limited human safety data; no established clinical trials. High potency warrants careful dosing. Potential for overactivation of HGF/MET pathway.

PROTOCOL

Goal: Study HGF/MET pathway activation and synaptogenesis. Reconstitute with bacteriostatic water. Very low doses required due to extreme potency.

DOSING TABLES

Dihexa Research Protocol

Phase	Daily Dose (mg)	Route
Week 1	5 mg	SC injection
Week 2	10 mg	SC injection
Weeks 3-6	10-20 mg	SC injection (once daily)
Cycle	4-6 weeks on	2-4 weeks off

DSIP

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Also Known As	DSIP, Delta Sleep-Inducing Peptide, Deltaran
Category	Sleep & Stress Recovery
Classification / Peptide Type	Endogenous sleep-regulating peptide; neuromodulator; stress-regulatory peptide
Half-Life	Approximately 30-40 minutes

DESCRIPTION

DSIP (Delta Sleep-Inducing Peptide) is a naturally occurring nonapeptide that promotes deep, restorative delta-wave sleep while reducing the physiological effects of stress. It modulates the sleep-wake cycle through multiple neurotransmitter systems and has analgesic properties that may help with chronic pain.

BENEFITS

Promotes deep delta-wave sleep; reduces stress response; analgesic properties; may help normalize sleep patterns in chronic insomnia.

SIDE EFFECTS

Generally well tolerated; mild headaches or drowsiness reported. Low toxicity profile in animal studies.

PROTOCOL

DSIP (5mg) Goal: Study delta sleep induction and stress axis modulation. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

DSIP (5mg)

Phase	Daily Dose (mcg)	Units (mL)
Week 1	100 mcg	4 units (0.04 mL)
Week 2	200 mcg	8 units (0.08 mL)
Weeks 3-6	300 mcg	12 units (0.12 mL)

Epithalon (Epitalon)

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Also Known As	Epithalon, Epitalon, Epithalone, Ala-Glu-Asp-Gly, AEDG tetrapeptide
Category	Anti-Aging & Longevity
Classification / Peptide Type	Telomerase activator; geroprotective peptide; neuroendocrine modulator
Half-Life	—

DESCRIPTION

Epithalon is a tetrapeptide from the pineal gland that activates telomerase to lengthen telomeres and reverse cellular aging. Human studies show it reduces mortality by 1.6 to 4.1 times in older adults, improves eye health in retinal diseases, and protects against chromosome damage. Benefits include stronger immunity, better sleep regulation, improved skin elasticity, and enhanced melatonin production.

BENEFITS

Activates telomerase to lengthen telomeres; reduces mortality in elderly; improves immune function, sleep quality, skin elasticity, and eye health.

SIDE EFFECTS

Very high safety profile; side effects are rare and limited to minor injection site irritation. Decades of research show excellent tolerability.

PROTOCOL

Epithalon (10mg) Goal: Study telomerase activation and anti-aging gene expression. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

Epithalon (10mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	500 mcg	2.5 units (0.025 mL)
Weeks 3-4	1000 mcg	5 units (0.05 mL)
Weeks 5-12	1000 mcg	5 units (0.05 mL)

FGL-S

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Also Known As	FGL-S, FGL peptide, NCAM-derived peptide, Neural Cell Adhesion Molecule peptide
Category	Cognitive & Neurological Health
Classification / Peptide Type	NCAM-derived neuroprotective peptide; synaptic plasticity enhancer; cognitive enhancer
Half-Life	—

DESCRIPTION

FGL-S is a peptide derived from the neural cell adhesion molecule (NCAM) that mimics NCAM's role in promoting synaptic plasticity, neurogenesis, and cognitive enhancement. Research shows it improves learning and memory in animal models and may have neuroprotective effects relevant to cognitive decline.

BENEFITS

Promotes synaptic plasticity and neurogenesis; improves learning and memory in preclinical models; potential neuroprotective effects.

SIDE EFFECTS

Limited human safety data; generally well tolerated in preclinical studies.

PROTOCOL

Research Goal: Study NCAM-mediated synaptic plasticity and cognitive enhancement pathways.

DOSING TABLES

FGL-S Research Protocol

Phase	Dose	Route	Notes
Preclinical	50–100 mcg	SC or IP	Animal model dose
Investigational	100 mcg	Subcutaneous	Limited human data available
Note	—	—	No established clinical protocol; research use only

Follistatin 315

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Also Known As	Follistatin 315, FST-315, Follistatin isoform 315
Category	Muscle & Physical Performance
Classification / Peptide Type	Myostatin inhibitor; activin antagonist; muscle growth regulator
Half-Life	Approximately 10-45 minutes (shorter than FST-344 due to lack of heparin-binding domain)

DESCRIPTION

Follistatin 315 is the circulating isoform of follistatin that inhibits myostatin and activin to promote muscle growth, strength, and recovery. Unlike FST-344, it does not bind to heparan sulfate proteoglycans and circulates freely in the bloodstream, making it the primary systemic form with profound muscle-building and fat-loss effects.

BENEFITS

Inhibits myostatin to promote significant muscle growth and strength; reduces body fat; improves recovery; shorter-acting than FST-344 for more controllable dosing.

SIDE EFFECTS

Potential for over-suppression of muscle growth regulators; long-term safety not established. Injection site reactions possible.

PROTOCOL

Goal: Study systemic myostatin inhibition for muscle growth research. Reconstitute with bacteriostatic water.

DOSING TABLES

Follistatin 315 (1mg)

Week	Dose (mcg)	Units (mL)
Weeks 1-2	30 mcg	9 units (0.09 mL)
Weeks 3-4	60 mcg	18 units (0.18 mL)
Weeks 5-8	100 mcg	30 units (0.30 mL)

Follistatin 344

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Also Known As	Follistatin 344, FST-344, Follistatin isoform 344
Category	Muscle & Physical Performance
Classification / Peptide Type	Myostatin inhibitor; tissue-bound activin antagonist; local muscle growth regulator
Half-Life	Approximately 1-2 hours (longer than FST-315 due to heparin binding)

DESCRIPTION

Follistatin 344 is the tissue-bound isoform of follistatin that inhibits myostatin and activin locally in muscle and reproductive tissues. It binds to heparan sulfate proteoglycans, concentrating its effects in specific tissues. Research shows it dramatically increases muscle fiber size and number when administered locally.

BENEFITS

Potent local myostatin inhibition; dramatically increases muscle fiber size and number; longer half-life for sustained effects; supports reproductive health.

SIDE EFFECTS

Potential for excessive muscle growth or organ enlargement with systemic use; reproductive effects require monitoring. Injection site reactions.

PROTOCOL

Goal: Study local myostatin inhibition and muscle hypertrophy mechanisms. Reconstitute with bacteriostatic water.

DOSING TABLES

Follistatin 344 (1mg)

Week	Dose (mcg)	Units (mL)
Weeks 1-2	30 mcg	9 units (0.09 mL)
Weeks 3-4	60 mcg	18 units (0.18 mL)
Weeks 5-8	100 mcg	30 units (0.30 mL)

FOX04-DRI (Proxofim)

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Also Known As	FOX04-DRI, Proxofim, FOXO4-DRI, Senolytic peptide FOXO4
Category	Specialized Research
Classification / Peptide Type	Senolytic peptide; FOXO4-p53 interaction disruptor; apoptosis inducer in senescent cells
Half-Life	—

DESCRIPTION

FOX04-DRI (Proxofim) is a senolytic peptide that selectively eliminates senescent zombie cells by disrupting the FOXO4-p53 interaction that keeps them alive, forcing them into apoptosis while sparing healthy cells. Animal research shows restored organ function, reduced frailty, reversed aging markers, and extended healthy lifespan through senescent cell clearance.

BENEFITS

Selectively kills senescent cells while sparing healthy ones; restores organ function; reduces frailty; reverses aging markers including fur graying and kidney damage in animals.

SIDE EFFECTS

No human clinical trials completed. Animal studies suggest good tolerability with only minor injection-site reactions. High research compound status.

PROTOCOL

Goal: Study senolytic activity and senescent cell clearance. Reconstitute with bacteriostatic water. Research use only.

DOSING TABLES

FOX04-DRI (5mg)

Phase	Dose (mcg)	Frequency
Phase 1	1000 mcg	3x/week (1 week)
Phase 2	1500 mcg	3x/week (weeks 2-4)
Phase 3	2000 mcg	2x/week (weeks 5-8)

GHK Basic

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Also Known As	GHK, Glycyl-L-histidyl-L-lysine, GHK tripeptide, Copper Peptide (uncomplexed form)
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	Cosmeceutical peptide; fibroblast-activating agent; wound healing peptide
Half-Life	—

DESCRIPTION

GHK Basic is a naturally occurring tripeptide (glycine-histidine-lysine) that declines with age and is responsible for skin firmness and wound healing capacity. It boosts collagen production, modulates gene expression to reduce inflammation, and serves as the uncomplexed precursor to GHK-Cu. It works across hundreds of biological pathways related to tissue repair and renewal.

BENEFITS

Boosts collagen and elastin production; modulates gene expression for tissue repair; reduces inflammation; supports hair follicle health and wound healing.

SIDE EFFECTS

Excellent safety profile; very rare reports of mild localized skin irritation.

PROTOCOL

Research Goal: Evaluate copper-independent fibroblast activation and gene expression modulation. Used topically or in reconstituted research form.

DOSING TABLES

GHK Topical Protocol

Concentration	Frequency	Application	
0.1% concentration	2x daily (AM/PM)	Full face serum	
1% concentration	2x daily	Targeted repair areas	
Injectable (research)	0.1–1 mg/day SC	Once daily	Systemic wound research

GHK-Cu (Copper Peptide)

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Also Known As	GHK-Cu, Copper Peptide, Copper(II) glycyl-L-histidyl-L-lysine, GHK-Copper complex
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	Copper chelating peptide; wound healing agent; tissue remodeling peptide; cosmeceutical
Half-Life	—

DESCRIPTION

GHK-Cu is a copper-complexed tripeptide with enhanced biological activity compared to uncomplexed GHK. The copper coordination dramatically amplifies its ability to stimulate collagen synthesis, promote wound healing, reduce inflammation, and regulate gene expression across hundreds of pathways. It is widely used in anti-aging skincare and wound healing research.

BENEFITS

Highly effective for skin rejuvenation and wound healing; increases collagen density; reduces wrinkles; supports hair growth; anti-inflammatory protection.

SIDE EFFECTS

Excellent safety profile with decades of use; very rare reports of mild localized reactions. Copper overload not a concern at cosmetic concentrations.

PROTOCOL

Research Goal: Evaluate copper-mediated enhancement of wound healing and skin regeneration. Typically used topically or in reconstituted injectable form.

DOSING TABLES

GHK-Cu Topical Protocol

Concentration	Frequency	Application	
1% concentration	2x daily (AM/PM)	Anti-aging serum (face)	
3-5% concentration	2x daily	Wound healing and hair growth	
Injectable (research)	0.1–1 mg/day SC	Once daily	Systemic skin/repair research

GHRH

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Also Known As	GHRH, Growth Hormone-Releasing Hormone, Somatocrinin, GRF, Somatorelin
Category	Growth Hormone Optimization
Classification / Peptide Type	Endogenous hypothalamic hormone; GH secretagogue; GHRH receptor agonist
Half-Life	Approximately 7 minutes (native form)

DESCRIPTION

GHRH (Growth Hormone-Releasing Hormone) is the hypothalamic peptide that naturally stimulates the pituitary gland to release growth hormone in pulses. Research analogs like Sermorelin and Tesamorelin are based on GHRH structure. Native GHRH has a very short half-life but provides insights into natural GH regulation.

BENEFITS

Stimulates natural pulsatile GH release from pituitary; preserves natural GH feedback; supports body composition, recovery, and metabolic function.

SIDE EFFECTS

Generally well tolerated; possible injection site reactions, flushing, and headaches. Long-term GH excess risks apply at supraphysiological doses.

PROTOCOL

Research Goal: Study hypothalamic-pituitary axis signaling and GH regulation. Use analogs like Sermorelin or CJC-1295 for improved stability.

DOSING TABLES

GHRH Research Protocol

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	100 mcg	Varies by vial size
Weeks 3-4	200 mcg	Varies by vial size
Weeks 5-12	200-300 mcg	Once daily SC (bedtime)
Note	—	Usually substituted with Sermorelin or CJC-1295 (longer half-life analogs)

GHRP-2

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Also Known As	GHRP-2, Pralmorelin, Growth Hormone Releasing Peptide-2, KP-102
Category	Growth Hormone Optimization
Classification / Peptide Type	Growth hormone secretagogue; ghrelin receptor agonist; GH releasing peptide
Half-Life	Approximately 15-60 minutes

DESCRIPTION

GHRP-2 is a synthetic hexapeptide that stimulates GH release through ghrelin receptors with the highest GH release potency among GHRPs. It stimulates both pituitary and hypothalamic pathways, producing strong GH pulses. Often stacked with GHRH analogs for synergistic GH release amplification.

BENEFITS

Potent stimulation of GH release; improves muscle growth, fat loss, and recovery; modest appetite stimulation; synergistic with GHRH analogs.

SIDE EFFECTS

Increased appetite and water retention; potential cortisol and prolactin elevation at higher doses; injection site reactions.

PROTOCOL

Goal: Study GH pulse amplification via ghrelin receptor activation. Reconstitute with bacteriostatic water. Stack with CJC-1295 for synergy.

DOSING TABLES

GHRP-2 (5mg)

Week	Daily Dose (mcg)	Units (mL)
Weeks 1-2	100 mcg	6 units (0.06 mL)
Weeks 3-4	200 mcg	12 units (0.12 mL)
Weeks 5-12	300 mcg	18 units (0.18 mL)

GHRP-6

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Also Known As	GHRP-6, Growth Hormone Releasing Peptide-6, His-D-Trp-Ala-Trp-D-Phe-Lys-NH2
Category	Growth Hormone Optimization
Classification / Peptide Type	Growth hormone secretagogue; ghrelin receptor agonist; appetite stimulating GH releasing peptide
Half-Life	Approximately 15-60 minutes

DESCRIPTION

GHRP-6 is a hexapeptide GH secretagogue that stimulates GH release through ghrelin receptors while producing stronger appetite stimulation than GHRP-2. It is often used for both GH optimization and appetite stimulation in research settings, particularly for subjects needing caloric intake support alongside GH-related benefits.

BENEFITS

Potent GH release stimulation; strong appetite stimulation useful for research subjects needing caloric surplus; muscle growth and recovery benefits.

SIDE EFFECTS

Strong appetite stimulation (a side effect or benefit depending on goals); water retention; potential cortisol/prolactin elevation; injection site reactions.

PROTOCOL

Goal: Study GH secretion with appetite stimulation component. Reconstitute with bacteriostatic water. Stack with GHRH analogs for synergy.

DOSING TABLES

GHRP-6 (5mg)

Week	Daily Dose (mcg)	Units (mL)
Weeks 1-2	100 mcg	6 units (0.06 mL)
Weeks 3-4	200 mcg	12 units (0.12 mL)
Weeks 5-12	300 mcg	18 units (0.18 mL)

Glutathione

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Also Known As	Glutathione, L-Glutathione, GSH, Reduced glutathione, gamma-Glutamyl-cysteinyl-glycine
Category	Anti-Aging & Longevity
Classification / Peptide Type	Endogenous antioxidant; tripeptide; thiol-containing compound; detoxification agent
Half-Life	—

DESCRIPTION

Glutathione is the body's master antioxidant and detoxification molecule that binds to toxins, heavy metals, and free radicals to render them harmless. Naturally produced in cells, it declines with age and stress, explaining why older bodies struggle with recovery. IV or injection supplementation restores youthful cellular defense and promotes detoxification.

BENEFITS

Powerful antioxidant protection; supports liver detoxification; reduces oxidative stress; skin brightening effects; immune support; enhances recovery.

SIDE EFFECTS

Generally very safe at therapeutic doses; excessive doses may cause bloating or GI discomfort orally. IV/injection: rare allergic reactions possible.

PROTOCOL

Goal: Study systemic antioxidant and detoxification pathways. Reconstitute with sterile water. IV push or slow infusion protocols vary by research context.

DOSING TABLES

Glutathione Dosing Protocols

Route	Dose	Frequency	Duration
IV Push	600-1200 mg	1-3x weekly	4-8 weeks
IM Injection	200-400 mg	1-2x weekly	4-8 weeks
SC Injection	100-200 mg	Daily or every 3 days	4-8 weeks
Note	—	Prepare fresh — oxidizes within hours of reconstitution	

Gonadorelin

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Also Known As	Gonadorelin, GnRH, Gonadotropin-Releasing Hormone, Factrel, Lutrepulse, LHRH
Category	Sexual Health & Fertility
Classification / Peptide Type	Hypothalamic hormone; GnRH receptor agonist; LH and FSH secretagogue
Half-Life	Approximately 2-4 minutes (extremely short native half-life)

DESCRIPTION

Gonadorelin is the synthetic form of gonadotropin-releasing hormone (GnRH) that stimulates the pituitary to release LH and FSH, supporting natural testosterone and sperm production. Used in TRT protocols to maintain testicular function and fertility during exogenous testosterone use.

BENEFITS

Maintains testicular function and fertility during TRT; stimulates natural LH and FSH; prevents testicular atrophy; supports natural testosterone production.

SIDE EFFECTS

Injection site reactions; potential for headaches and nausea at higher doses; very short half-life requires frequent dosing.

PROTOCOL

Goal: Maintain natural HPG axis function during TRT research. Reconstitute with bacteriostatic water. Frequent dosing required due to short half-life.

DOSING TABLES

Gonadorelin (2mg)

Schedule	Dose (mcg)	Frequency
Standard TRT Support	100 mcg	2-3x weekly
Fertility Support	100-250 mcg	Daily

Hexarelin

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Also Known As	Hexarelin, Examorelin, EP-23905, MF-6003, Growth hormone-releasing hexapeptide, Hexareline
Category	Growth Hormone Optimization
Classification / Peptide Type	Growth hormone secretagogue; ghrelin receptor agonist; synthetic peptide
Half-Life	—

DESCRIPTION

Hexarelin is one of the most potent GHRP compounds, producing among the highest GH pulses of any GH secretagogue. Unlike other GHRPs, it also directly stimulates cardiac ghrelin receptors (CD36), providing cardioprotective benefits independent of GH release. However, it develops receptor desensitization faster than other GHRPs.

BENEFITS

Most potent GHRP for GH release; unique cardioprotective effects via CD36 receptors; supports muscle growth and recovery; useful for cardiac research.

SIDE EFFECTS

Rapid receptor desensitization requiring cycling; increased cortisol and prolactin; stronger appetite stimulation. Requires careful cycling protocols.

PROTOCOL

Goal: Analyze peak GH pulse amplitude and cardiac protective effects via CD36 receptors. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

Hexarelin

Phase	Daily Dose (mcg)	Frequency
Standard	100 mcg	1x Daily
Advanced	200 mcg	2x Daily (Fasted)

HGH (Somatropin)

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Also Known As	HGH, Somatropin, Human Growth Hormone, rhGH, Growth Hormone, Genotropin, Norditropin, Humatrope, Saizen, Omnitrope
Category	Growth Hormone Optimization
Classification / Peptide Type	Polypeptide hormone; 191 amino acid pituitary hormone; somatotropin; recombinant growth hormone
Half-Life	Approximately 2-3 hours (plasma half-life); biological effects last much longer via IGF-1 elevation

DESCRIPTION

Human Growth Hormone (HGH / Somatropin) is a 191-amino acid polypeptide naturally produced by the anterior pituitary gland that drives growth, cell repair, metabolism, and body composition throughout life. GH levels peak during puberty and decline progressively with age, driving many hallmarks of aging including muscle loss, fat gain, reduced recovery, and reduced skin quality. FDA-approved uses include adult GH deficiency, HIV wasting, and pediatric growth disorders. Off-label use for anti-aging, body composition, and athletic recovery is extremely widespread, making it one of the most searched hormones globally alongside peptides.

BENEFITS

Increases lean muscle mass and reduces body fat; improves bone density; enhances skin quality and wound healing; supports organ health; improves energy, exercise capacity, and recovery from injury.

SIDE EFFECTS

Carpal tunnel syndrome, joint and muscle pain, fluid retention (edema), insulin resistance, potential increased cancer risk at supraphysiological doses, acromegaly with chronic overdose. Contraindicated in active cancer.

PROTOCOL

Anti-aging low dose: 1-2 IU daily SC at bedtime. Body composition: 2-4 IU daily. Performance advanced: 4-6 IU daily split AM/PM. Cycle 3-6 months on, then 1-3 months off. Monitor IGF-1 every 4-8 weeks. Reconstitution: 10 IU vial plus 1 mL bacteriostatic water yields 1 IU per 0.1 mL.

DOSING TABLES

HGH Dosing by Goal

Goal	Daily Dose (IU)	Timing	Notes
Anti-Aging / Wellness	1-2 IU	Bedtime SC	Safest long-term protocol
Body Composition	2-4 IU	AM fasted SC	Balance benefits vs side effects
Advanced Performance	4-6 IU	Split AM and PM	Monitor IGF-1 closely
GH Deficiency (Medical)	0.3-1.5 IU	Bedtime SC	Per endocrinologist protocol

Reconstitution Guide

Vial Size	Water Volume	Concentration
10 IU	1.0 mL BAC water	1 IU per 0.1 mL (10 units)

Vial Size	Water Volume	Concentration
10 IU	2.0 mL BAC water	1 IU per 0.2 mL (20 units)

HGH Fragment 176-191

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Also Known As	HGH Fragment 176-191, HGH Frag 176-191, hGH(176-191), Fragment 176-191, CL233
Category	Metabolic & Weight Management
Classification / Peptide Type	Peptide fragment; lipolytic agent; metabolic regulator; growth hormone fragment
Half-Life	—

DESCRIPTION

HGH Fragment 176-191 is the fat-burning portion of human growth hormone, specifically engineered to stimulate lipolysis and inhibit lipogenesis without affecting blood sugar, IGF-1 levels, or cell growth. It is 12.5 times more effective than full HGH for fat reduction while having no anabolic or diabetogenic effects.

BENEFITS

12.5x more effective than HGH for fat reduction; no effect on blood sugar or IGF-1; inhibits lipogenesis; well tolerated without systemic HGH effects.

SIDE EFFECTS

Injection site reactions; mild tiredness possible. Much safer profile than full HGH. No effects on glucose metabolism or cell proliferation.

PROTOCOL

HGH Fragment 176-191 Goal: Study selective lipolytic activity without systemic HGH effects. Reconstitute with bacteriostatic water.

DOSING TABLES

HGH Frag 176-191 (2mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-4	250 mcg	37.5 units (0.375 mL)
Weeks 5-12	500 mcg	75 units (0.75 mL)

HMG (Human Menopausal Gonadotropin)

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Also Known As	HMG, Menotropin, Menopur, Repronex, Pergonal
Category	Sexual Health & Fertility
Classification / Peptide Type	Glycoprotein hormone combination; FSH and LH mixture; gonadotropin
Half-Life	Approximately 3.5-5 days in circulation

DESCRIPTION

HMG is a purified combination of FSH and LH derived from postmenopausal urine. FDA-approved for fertility stimulation in women and for stimulating sperm production in men with hypogonadotropic hypogonadism. Used in peptide protocols alongside hCG and testosterone to maintain gonadotropin signaling and preserve fertility during hormone therapy.

BENEFITS

FDA-approved for fertility; stimulates follicular development in women; supports sperm production in men; useful in fertility restoration protocols alongside TRT.

SIDE EFFECTS

Ovarian hyperstimulation syndrome in women; multiple pregnancy risk; injection site reactions; in men: possible gynecomastia.

PROTOCOL

Male fertility: 75-150 IU SC 2-3x weekly. Female IVF: per fertility specialist. Requires medical supervision.

DOSING TABLES

HMG Male Fertility Protocol

Phase	Dose (IU)	Frequency
Standard	75 IU	2-3x weekly SC
Combined with hCG	75-150 IU	2-3x weekly
Duration	3-6 months	Until fertility markers improve

HMG Female Protocol

Phase	Dose (IU)	Frequency
Ovulation Induction	75-150 IU	Daily SC (cycle day 2-3)
IVF Stimulation	150-300 IU	Daily per specialist

Humanin

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Also Known As	Humanin, HN, MTRNR2, Mitochondrial-derived peptide humanin, Humanin S14G (HNG)
Category	Anti-Aging & Longevity
Classification / Peptide Type	Mitochondrial-derived peptide (MDP); cytoprotective peptide; neuroprotective agent; anti-apoptotic peptide
Half-Life	—

DESCRIPTION

Humanin is a mitochondria-derived peptide that protects cells from apoptosis, reduces oxidative stress, improves insulin sensitivity, and supports neuronal survival. Levels decline with age and are reduced in Alzheimer's patients. Research shows it extends lifespan in C. elegans models and protects against multiple age-related diseases.

BENEFITS

Neuroprotective; anti-apoptotic; improves insulin sensitivity; reduces oxidative stress; potential Alzheimer's protection; extends lifespan in model organisms.

SIDE EFFECTS

Limited human safety data; generally well tolerated in preclinical studies at research doses.

PROTOCOL

Goal: Study cytoprotective and metabolic mechanisms of mitochondrial-derived peptide signaling. Reconstitute with bacteriostatic water.

DOSING TABLES

Humanin Research Protocol

Phase	Dose	Frequency	Route
Low	1-2 mg	2-3x weekly	SC injection
Standard	2-4 mg	2-3x weekly	SC injection
Cycle	4-8 weeks on	2-4 weeks off	Subcutaneous

IGF-1 DES

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Also Known As	IGF-1 DES, Des(1-3)IGF-1, Truncated IGF-1, rHuDES(1-3)IGF-1
Category	Muscle & Physical Performance
Classification / Peptide Type	Growth factor; anabolic peptide; IGF-1 receptor agonist; tissue regeneration agent
Half-Life	Approximately 20-30 minutes (very short) due to enhanced enzymatic susceptibility

DESCRIPTION

IGF-1 DES is a truncated form of IGF-1 that is 10 times more potent than standard IGF-1 at stimulating muscle cell proliferation and differentiation due to its inability to bind IGF-binding proteins. Its very short half-life makes it ideal for localized tissue effects when injected intramuscularly at the target site.

BENEFITS

10x more potent than IGF-1 for local muscle growth; cannot be sequestered by IGFBPs; excellent for localized hypertrophy; rapid onset of action.

SIDE EFFECTS

Hypoglycemia risk if injected systemically; localized edema; potential for rapid growth of existing tumors. Must be used with careful glucose monitoring.

PROTOCOL

Goal: Study localized IGF-1 receptor activation and muscle cell proliferation. Reconstitute with acetic acid solution. Inject intramuscularly into target muscle.

DOSING TABLES

IGF-1 DES (1mg)

Week	Dose (mcg)	Timing
Weeks 1-2	20 mcg	Post-workout IM
Weeks 3-4	40 mcg	Post-workout IM
Weeks 5-8	50 mcg	Post-workout IM

IGF-1 LR3

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Also Known As	IGF-1 LR3, Long R3 IGF-1, Insulin-like growth factor 1 long R3, Mecasermin rinfabate
Category	Muscle & Physical Performance
Classification / Peptide Type	IGF-1 analog; long-acting IGF-1 receptor agonist; anabolic growth factor; muscle growth agent
Half-Life	Approximately 20-30 hours (extended vs. 15 min for native IGF-1)

DESCRIPTION

IGF-1 LR3 is a modified IGF-1 analog with a 20-30 hour half-life achieved through an N-terminal extension that prevents binding to IGF-binding proteins. It produces systemic anabolic effects including muscle growth, fat loss, and enhanced recovery throughout the day from a single injection.

BENEFITS

Systemic anabolic effects lasting 20-30 hours; promotes muscle growth and fat loss; enhanced recovery; more convenient dosing than IGF-1 DES.

SIDE EFFECTS

Hypoglycemia risk; potential for organ growth with extended use; jaw growth possible; cancer risk considerations. Requires glucose monitoring.

PROTOCOL

Goal: Study systemic IGF-1 receptor activation and anabolic pathways. Reconstitute with acetic acid solution. Once-daily injection protocol.

DOSING TABLES

IGF-1 LR3 (1mg)

Week	Daily Dose (mcg)	Units (mL)
Weeks 1-2	20 mcg	6 units (0.06 mL)
Weeks 3-4	40 mcg	12 units (0.12 mL)
Weeks 5-8	50 mcg	15 units (0.15 mL)

Ipamorelin

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Also Known As	Ipamorelin, NNC 26-0161, Growth Hormone Releasing Peptide Ipamorelin
Category	Growth Hormone Optimization
Classification / Peptide Type	Selective growth hormone secretagogue; ghrelin receptor agonist; GH releasing peptide
Half-Life	Approximately 2 hours

DESCRIPTION

Ipamorelin is the most selective GHRP compound, stimulating GH release without elevating cortisol, prolactin, or ACTH. It produces clean GH pulses ideal for body composition improvement, recovery enhancement, and anti-aging research. Often paired with CJC-1295 No DAC for synergistic GH release amplification.

BENEFITS

Clean GH release without cortisol or prolactin elevation; improves body composition, muscle recovery, and sleep quality; excellent safety profile.

SIDE EFFECTS

Minimal side effects; occasional mild water retention or tingling sensations; injection site reactions. One of the safest GH secretagogues.

PROTOCOL

Goal: Study selective GH pulse stimulation without cortisol or prolactin elevation. Reconstitute with bacteriostatic water. Often paired with CJC-1295.

DOSING TABLES

Ipamorelin (5mg)

Week	Daily Dose (mcg)	Units (mL)
Weeks 1-2	100 mcg	6 units (0.06 mL)
Weeks 3-4	150 mcg	9 units (0.09 mL)
Weeks 5-8	200 mcg	12 units (0.12 mL)
Weeks 9-12	250 mcg	15 units (0.15 mL)

Kisspeptin-10

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Also Known As	Kisspeptin-10, Metastin (45-54), KP-10, KISS1 (112-121)
Category	Sexual Health & Fertility
Classification / Peptide Type	Neuropeptide; GPR54 receptor agonist; GnRH secretagogue; reproductive hormone regulator
Half-Life	Approximately 24-28 minutes

DESCRIPTION

Kisspeptin-10 is a powerful activator of the reproductive hormone cascade, stimulating GnRH release which triggers LH and FSH and ultimately testosterone and estrogen production. Research shows it can restore libido, improve fertility, and regulate the HPG axis in both males and females.

BENEFITS

Stimulates GnRH and subsequent LH/FSH release; improves libido and sexual function; potential fertility applications; restores HPG axis function.

SIDE EFFECTS

Potential for desensitization with continuous use; headache, nausea reported in some studies; short half-life requires frequent dosing.

PROTOCOL

Goal: Study HPG axis stimulation and reproductive hormone cascade activation. Reconstitute with bacteriostatic water.

DOSING TABLES

Kisspeptin-10 (5mg)

Schedule	Dose (mcg)	Frequency
Standard	100 mcg	2x daily
Pulsatile	10-100 mcg	Timed pulses

KPV (Ac-KPV-NH2)

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Also Known As	KPV, Ac-KPV-NH2, Alpha-MSH tripeptide, C-terminal alpha-MSH fragment
Category	Immune Support & Inflammation
Classification / Peptide Type	Anti-inflammatory tripeptide; alpha-MSH-derived peptide; melanocortin receptor modulator
Half-Life	—

DESCRIPTION

KPV is the C-terminal tripeptide of alpha-melanocyte stimulating hormone (alpha-MSH) that retains the anti-inflammatory and antimicrobial properties of full alpha-MSH. It works through melanocortin receptors to suppress NF-kB signaling, reduce pro-inflammatory cytokines, and promote gut barrier integrity. Research shows particular effectiveness for inflammatory bowel conditions.

BENEFITS

Potent anti-inflammatory via melanocortin receptors; reduces pro-inflammatory cytokines; promotes gut barrier integrity; antimicrobial properties.

SIDE EFFECTS

Very good safety profile; well tolerated in research models; limited human data available.

PROTOCOL

KPV (10mg) Goal: Study melanocortin receptor-mediated anti-inflammatory pathways. Reconstitute with bacteriostatic water.

DOSING TABLES

KPV (10mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	500 mcg	1.5 units (0.015 mL)
Weeks 3-4	750 mcg	2.25 units (0.0225 mL)
Weeks 5-12	1000 mcg	3 units (0.03 mL)

Liraglutide

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Also Known As	Liraglutide, Saxenda (obesity indication), Victoza (diabetes indication), Xultophy (combo with insulin), NN2211
Category	Metabolic & Weight Management
Classification / Peptide Type	GLP-1 receptor agonist; fatty acid-conjugated incretin mimetic; FDA-approved antidiabetic and anti-obesity peptide
Half-Life	Approximately 13 hours (enables once-daily subcutaneous dosing)

DESCRIPTION

Liraglutide is an FDA-approved GLP-1 receptor agonist with a 13-hour half-life requiring once-daily subcutaneous injection. It was the first GLP-1 agonist approved specifically for obesity management (as Saxenda at 3 mg/day) and remains widely used for type 2 diabetes (Victoza at up to 1.8 mg/day). Clinical trials show 5-10% average body weight loss, improved glycemic control, and significant cardiovascular risk reduction. Liraglutide is the predecessor molecule to semaglutide and tirzepatide, establishing the clinical foundation for the modern GLP-1 drug class.

BENEFITS

FDA-approved for obesity (Saxenda) and type 2 diabetes (Victoza); 5-10% average weight loss in clinical trials; reduces major cardiovascular events; once-daily dosing convenience.

SIDE EFFECTS

Nausea, vomiting, diarrhea, and constipation most common during dose titration; rare pancreatitis; thyroid C-cell tumor risk (black box warning); contraindicated with MEN2 or medullary thyroid carcinoma history.

PROTOCOL

Saxenda obesity protocol: Start 0.6 mg/day SC, increase by 0.6 mg each week to target 3.0 mg/day. Inject at any consistent time of day. Evaluate response at 4 months; discontinue if insufficient weight loss. Victoza diabetes: Start 0.6 mg x 1 week, increase to 1.2 mg maintenance.

DOSING TABLES

Saxenda (Liraglutide 3mg) Titration

Week	Daily Dose (mg)	Route
Week 1	0.6 mg	Once daily SC
Week 2	1.2 mg	Once daily SC
Week 3	1.8 mg	Once daily SC
Week 4	2.4 mg	Once daily SC
Week 5+	3.0 mg	Once daily SC (target dose)

Victoza (Liraglutide) Diabetes Dosing

Phase	Daily Dose (mg)	Notes
Week 1	0.6 mg	Once daily (dose initiation)

Phase	Daily Dose (mg)	Notes
Maintenance	1.2 mg	Once daily (add 1.8 mg if needed)

Livagen

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Also Known As	Livagen, Livagen peptide, Lys-Glu-Asp-Ala, KEDA
Category	Anti-Aging & Longevity
Classification / Peptide Type	Bioregulatory peptide; chromatin modulator; gene expression regulator; immune system modulator
Half-Life	—

DESCRIPTION

Livagen is an immune-rejuvenating peptide that awakens dormant genes in immune cells by inducing chromatin decondensation, restoring youthful immune function. Research in elderly people showed it reactivates immune cells to express genes like younger counterparts, reversing immune aging that makes seniors vulnerable to infection.

BENEFITS

Reactivates silenced immune genes; restores youthful immune function in elderly; supports gastrointestinal and liver health; anti-aging immune modulation.

SIDE EFFECTS

Excellent safety profile based on bioregulator research; generally very well tolerated.

PROTOCOL

Livagen (20mg) Goal: Study epigenetic immune rejuvenation and chromatin remodeling. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

Livagen (20mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	200 mcg	2 units (0.02 mL)
Weeks 3-4	400 mcg	4 units (0.04 mL)
Weeks 5-12	600 mcg	6 units (0.06 mL)

LL-37

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Also Known As	LL-37, Cathelicidin, hCAP-18, CAMP peptide, Human cathelicidin antimicrobial peptide
Category	Immune Support & Inflammation
Classification / Peptide Type	Antimicrobial peptide; cathelicidin; immune modulator; wound healing peptide
Half-Life	—

DESCRIPTION

LL-37 is the only known human cathelicidin, a multifunctional antimicrobial peptide that directly kills bacteria, fungi, and viruses while also modulating the immune response, promoting wound healing, and supporting tissue regeneration. It plays a critical role in the innate immune defense of skin, lungs, and gut.

BENEFITS

Broad-spectrum antimicrobial activity; immune modulation; promotes wound healing and tissue regeneration; antiviral and antifungal properties.

SIDE EFFECTS

Pro-inflammatory effects at high doses; potential cytotoxicity to host cells at very high concentrations. Research use requires careful dose management.

PROTOCOL

LL-37 Research Goal: Study innate immune defense mechanisms and antimicrobial peptide activity. Reconstitute with bacteriostatic water.

DOSING TABLES

LL-37 (5mg) Research Protocol

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	100 mcg	6 units (0.06 mL)
Weeks 3-4	150 mcg	9 units (0.09 mL)
Weeks 5-12	200-250 mcg	12-15 units (0.12-0.15 mL)
Cycle	8-12 weeks	Once daily SC

Matrixyl

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Also Known As	Matrixyl, Palmitoyl Pentapeptide-4, Palmitoyl Pentapeptide-3, Pal-KTTKS
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	Matrikine peptide; collagen synthesis stimulator; cosmeceutical anti-aging peptide
Half-Life	—

DESCRIPTION

Matrixyl (Pal-KTTKS) is a palmitoylated peptide that mimics collagen breakdown fragments to signal increased collagen synthesis. Clinical studies show significant wrinkle reduction and skin firmness improvement with twice-daily topical application, making it one of the best-studied cosmeceutical anti-aging peptides.

BENEFITS

Stimulates collagen synthesis via matrikine signaling; reduces wrinkle depth; improves skin firmness and hydration; well validated in clinical studies.

SIDE EFFECTS

Excellent safety profile; suitable for sensitive skin; rare mild irritation. Well tolerated across all skin types.

PROTOCOL

Research Goal: Evaluate matrikine-mediated collagen synthesis stimulation. Typically formulated at 4-8 ppm in topical preparations.

DOSING TABLES

Matrixyl Topical Protocol

Concentration	Frequency	Application
4 ppm concentration	2x daily (AM/PM)	Anti-aging face serum
8 ppm concentration	2x daily	Targeted wrinkle treatment
Cosmeceutical use	4–8 ppm	Often combined with Matrixyl 3000 (Pal-GHK-KTTKS + Pal-GHK)

Mazdutide

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Also Known As	Mazdutide, IBI362, GCGR/GLP-1R dual agonist
Category	Metabolic & Weight Management
Classification / Peptide Type	GLP-1/glucagon dual receptor agonist; metabolic peptide; anti-obesity agent
Half-Life	Approximately 5-7 days (once-weekly dosing)

DESCRIPTION

Mazdutide is a dual GLP-1/glucagon receptor agonist that combines appetite suppression with enhanced fat burning and energy expenditure for superior weight loss compared to GLP-1 monotherapy. Phase III trials show significant body weight reductions with additional improvements in metabolic markers.

BENEFITS

Dual mechanism for weight loss; combines GLP-1 appetite suppression with glucagon-driven fat burning; superior metabolic benefits; once-weekly dosing.

SIDE EFFECTS

Nausea, vomiting, diarrhea during titration (typical GLP-1 class effects); injection site reactions; rare gallbladder events.

PROTOCOL

Goal: Study dual GLP-1/glucagon receptor agonism for metabolic and weight loss research. Once-weekly subcutaneous injection protocol.

DOSING TABLES

Mazdutide Research Protocol

Phase	Weekly Dose (mg)	Escalation
Weeks 1-4	1.5 mg	Starting dose
Weeks 5-8	3.0 mg	Escalation
Weeks 9-12	4.5 mg	Escalation
Weeks 13-16	6.0 mg	Maintenance
Clinical max	9-10 mg	Per Phase 1b study

Melanostatin DM

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Also Known As	Melanostatin DM, Melanostatin, MIF-1 analog, Pro-Leu-Gly-NH2 analog
Category	Pigmentation & Skin Tone
Classification / Peptide Type	Melanocyte-stimulating hormone inhibitor; skin brightening peptide; tyrosinase modulator
Half-Life	—

DESCRIPTION

Melanostatin DM is a peptide that inhibits melanocyte-stimulating hormone (MSH) activity to reduce melanin production and brighten skin tone. It provides an alternative mechanism to tyrosinase inhibitors for managing hyperpigmentation and uneven skin tone.

BENEFITS

Inhibits MSH-driven melanin production; reduces hyperpigmentation; brightens skin tone; complements tyrosinase-inhibiting ingredients.

SIDE EFFECTS

Generally well tolerated topically; limited systemic data. Well suited for combination brightening formulations.

PROTOCOL

Research Goal: Evaluate MSH inhibition for pigmentation modulation. Used topically in brightening formulations.

DOSING TABLES

Melanostatin DM Topical Protocol

Concentration	Frequency	Application
2-5% concentration	2x daily (AM/PM)	Face brightening serum
5% concentration	2x daily	Targeted hyperpigmentation
Cosmeceutical use	2-5%	Can be combined with Nonapeptide-1 or Decapeptide-12

Melanotan 1 (MT1)

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Also Known As	Melanotan 1, MT-1, Afamelanotide, Scenesse, CUV1647
Category	Pigmentation & Skin Tone
Classification / Peptide Type	Alpha-MSH analog; melanocortin receptor agonist; photoprotective pigmentation peptide
Half-Life	Approximately 40 minutes (longer than native alpha-MSH due to cyclic modification)

DESCRIPTION

Melanotan 1 (Afamelanotide) is a cyclic alpha-MSH analog FDA-approved for erythropoietic protoporphyria that provides sustained photoprotection through melanin stimulation. Unlike MT-2, it lacks significant sexual side effects and is used primarily for UV protection and skin tanning research.

BENEFITS

Stimulates photoprotective melanin production; FDA-approved for erythropoietic protoporphyria; provides UV protection; minimal sexual side effects compared to MT-2.

SIDE EFFECTS

Nausea, flushing, injection site reactions; melanocytic nevi darkening requiring monitoring; rare spontaneous erections (less than MT-2).

PROTOCOL

Melanotan 1 Goal: Study melanocortin receptor-mediated photoprotection and pigmentation. Reconstitute with bacteriostatic water.

DOSING TABLES

Melanotan 1 (10mg)

Phase	Dose (mcg)	Frequency
Loading	500 mcg	Daily x 10 days
Maintenance	500 mcg	Every 7-14 days

Melanotan 2 (MT2)

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Also Known As	Melanotan 2, MT-2, Melanotan II
Category	Sexual Health & Fertility
Classification / Peptide Type	Alpha-MSH analog; non-selective melanocortin receptor agonist; tanning and sexual function peptide
Half-Life	Approximately 33 minutes

DESCRIPTION

Melanotan 2 is a cyclic alpha-MSH analog that stimulates tanning, increases libido, and reduces appetite through non-selective melanocortin receptor activation (MC1R, MC3R, MC4R). It is significantly more potent than MT-1 for sexual function effects due to MC4R activation in the CNS. Used in research for tanning, sexual dysfunction, and appetite control.

BENEFITS

Strong tanning response; potent pro-erectile and libido-enhancing effects; appetite suppression; fat loss properties via MC3R/MC4R activation.

SIDE EFFECTS

Nausea, flushing, spontaneous erections; facial flushing; potential melanocytic nevi darkening; yawning. Requires careful dose management.

PROTOCOL

Melanotan 2 Goal: Study MC4R-mediated sexual function and MC1R tanning mechanisms. Reconstitute with bacteriostatic water. Start with very low doses.

DOSING TABLES

Melanotan 2 (10mg)

Phase	Dose (mcg)	Frequency
Loading	250 mcg	Daily (increase slowly)
Maintenance	500-1000 mcg	Every 2-3 days

MGF (Mechano Growth Factor)

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Also Known As	MGF, Mechano Growth Factor, IGF-1Ec, Mechano-growth factor splice variant
Category	Muscle & Physical Performance
Classification / Peptide Type	IGF-1 splice variant; local muscle growth factor; satellite cell activator
Half-Life	Approximately 5-7 minutes (native MGF very short; PEG-MGF extended)

DESCRIPTION

MGF (Mechano Growth Factor) is an IGF-1 splice variant produced in muscle tissue in response to mechanical loading that activates satellite cells for muscle repair and hypertrophy. It is unique in that it works locally at the site of injection or mechanical stress, making it ideal for targeted muscle development research.

BENEFITS

Activates satellite cells for localized muscle repair and hypertrophy; stimulates muscle stem cell proliferation; synergistic with IGF-1 LR3.

SIDE EFFECTS

Localized edema at injection site; potential systemic IGF-1 effects with frequent dosing; hypoglycemia risk at high doses.

PROTOCOL

MGF Goal: Study satellite cell activation and local muscle hypertrophy mechanisms. Inject intramuscularly into target muscle post-workout.

DOSING TABLES

MGF (2mg)

Schedule	Dose (mcg)	Timing
Post-training	100-200 mcg	Within 30 min post-workout
Advanced	200-400 mcg	IM into target muscle

MK-677 (Ibutamoren)

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Also Known As	MK-677, Ibutamoren, MK-0677, L-163191, LUM-201, Ibutamoren mesylate, Nutrobal
Category	Muscle & Physical Performance
Classification / Peptide Type	Non-peptide oral ghrelin receptor agonist; growth hormone secretagogue; GHS-R1a agonist
Half-Life	Approximately 24 hours; enables once-daily oral dosing

DESCRIPTION

MK-677 (Ibutamoren) is an oral growth hormone secretagogue that activates ghrelin receptors (GHS-R1a) to stimulate GH and IGF-1 release. Unlike injectable GH secretagogues it is orally bioavailable with a 24-hour half-life. A 2-year clinical trial showed sustained GH/IGF-1 increases, significant lean mass gains, and improved bone mineral density in elderly subjects. It strongly stimulates appetite and improves sleep quality through GH-mediated deep sleep enhancement.

BENEFITS

Oral GH secretagogue with 24-hour half-life; increases GH and IGF-1; builds lean mass, improves bone density, enhances deep sleep and recovery; convenient once-daily oral dosing.

SIDE EFFECTS

Significant appetite stimulation (may cause weight gain), water retention, transient insulin resistance, elevated fasting glucose. Generally well tolerated in clinical trials.

PROTOCOL

MK-677 Goal: Study oral GHS-R1a activation and sustained GH/IGF-1 elevation. Take once daily at bedtime. Cycle 8-16 weeks on, 4-8 weeks off.

DOSING TABLES

MK-677 Oral Protocol

Phase	Daily Dose (mg)	Timing
Starting	10 mg	Once daily at bedtime
Standard	20-25 mg	Once daily at bedtime
Advanced	25-30 mg	Once daily at bedtime
Cycle	8-16 weeks	Then 4-8 weeks off

MOTS-c

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Also Known As	MOTS-c, Mitochondrial ORF of the 12S rRNA Type-C, MOTS-c peptide
Category	Metabolic & Weight Management
Classification / Peptide Type	Mitochondrial-derived peptide (MDP); metabolic regulator; exercise mimetic
Half-Life	—

DESCRIPTION

MOTS-c is a mitochondria-derived 16-amino acid peptide that mimics the metabolic benefits of exercise by activating AMPK, improving glucose uptake into muscles, reducing inflammation, and protecting against metabolic disease. Research shows 25-40% improvements in physical performance and significant protection against obesity and insulin resistance.

BENEFITS

Exercise mimetic: improves insulin sensitivity, glucose uptake, and metabolic efficiency; anti-obesity; anti-inflammatory; extends healthy lifespan in models.

SIDE EFFECTS

No adverse effects reported in preclinical research; human tolerability still being established.

PROTOCOL

MOTS-c Goal: Study mitochondrial signaling and metabolic pathway activation. Two validated protocols: (1) Daily low-dose — 1 mg/day SC; (2) Pulsed — 5 mg injected 2-3x per week SC. Cycle 8-12 weeks on, 4 weeks off.

DOSING TABLES

MOTS-c Daily Protocol

Phase	Daily Dose	Frequency	Notes
Weeks 1-2	1 mg	Once daily SC	Low-dose loading phase
Weeks 3-12	1 mg	Once daily SC	Maintenance (most common protocol)

MOTS-c Pulsed Protocol

Phase	Dose Per Injection	Frequency	Notes
Weeks 1-2	2 mg	2-3x weekly SC	Starting pulsed dose
Weeks 3-12	5 mg	2-3x weekly SC	Standard pulsed maintenance

N-Acetyl Epithalon Amidate

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Also Known As	N-Acetyl Epithalon Amidate, Acetylated Epitalon
Category	Anti-Aging & Longevity
Classification / Peptide Type	Modified telomerase activator; enhanced bioavailability anti-aging peptide
Half-Life	—

DESCRIPTION

N-Acetyl Epithalon Amidate is an optimized version of Epithalon with N-terminal acetylation and C-terminal amidation that enhance stability, bioavailability, and CNS penetration for broader anti-aging benefits including telomere maintenance, pineal regulation, and immune enhancement.

BENEFITS

Enhanced bioavailability Epithalon variant; telomere maintenance; pineal gland health; immune enhancement; improved CNS access vs standard Epithalon.

SIDE EFFECTS

Very high safety profile; side effects rare and limited to minor injection site irritation.

PROTOCOL

N-Acetyl Epithalon Amidate Goal: Study enhanced telomerase activation with improved CNS penetration. Reconstitute with bacteriostatic water.

DOSING TABLES

N-Acetyl Epithalon (10mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	500 mcg	2.5 units (0.025 mL)
Weeks 3-12	1000 mcg	5 units (0.05 mL)

N-Acetyl Selank Amidate

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Also Known As	N-Acetyl Selank Amidate
Category	Cognitive & Neurological Health
Classification / Peptide Type	Modified anxiolytic nootropic peptide; GABAergic/serotonergic modulator
Half-Life	Compared to unmodified Selank (extended via acetyl/amidate modifications)

DESCRIPTION

N-Acetyl Selank Amidate is a modified Selank with enhanced blood-brain barrier penetration that reduces anxiety while simultaneously improving focus and memory through GABAergic, serotonergic, and enkephalinergic pathways. Clinical trials show anxiolytic efficacy equal to benzodiazepines without addiction, tolerance, or cognitive impairment.

BENEFITS

Anxiolytic equal to benzodiazepines without addiction; simultaneous cognitive enhancement; reduces anxiety while improving focus and memory; mood support.

SIDE EFFECTS

Generally well-tolerated; mild headaches or slight fatigue reported; no dependence or withdrawal; intranasal use may cause minor nasal irritation.

PROTOCOL

N-Acetyl Selank Goal: Study enhanced anxiolytic and cognitive mechanisms with improved bioavailability. Intranasal or subcutaneous protocols.

DOSING TABLES

N-Acetyl Selank (5mg)

Week	Daily Dose (mcg)	Method
Weeks 1-2	250 mcg	Intranasal or SC
Weeks 3-8	500 mcg	Intranasal or SC

N-Acetyl Semax Amidate

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Also Known As	N-Acetyl Semax Amidate, Acetylated Semax
Category	Cognitive & Neurological Health
Classification / Peptide Type	Modified nootropic; ACTH analog; BDNF upregulator; acetylated neuropeptide
Half-Life	Extended vs standard Semax due to acetylation and amidation modifications

DESCRIPTION

N-Acetyl Semax Amidate is an enhanced Semax with N-terminal acetylation and C-terminal amidation that dramatically improve potency, blood-brain barrier crossing, and duration of action. It upregulates BDNF more powerfully than standard Semax for superior cognitive enhancement, neuroprotection, and neuroplasticity.

BENEFITS

Superior BDNF upregulation; enhanced memory, focus, and neuroplasticity; stronger neuroprotection; improved bioavailability vs standard Semax.

SIDE EFFECTS

Generally well tolerated; potential for mild anxiety at high doses; intranasal irritation possible; headache reported in some users.

PROTOCOL

N-Acetyl Semax Goal: Study enhanced BDNF upregulation and neuroprotective mechanisms. Intranasal or subcutaneous protocols.

DOSING TABLES

N-Acetyl Semax (30mg)

Week	Daily Dose (mcg)	Method
Weeks 1-2	300 mcg	Intranasal
Weeks 3-8	600 mcg	Intranasal

NAD+

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Also Known As	NAD+, Nicotinamide Adenine Dinucleotide, Beta-NAD+, Coenzyme 1, DPN
Category	Anti-Aging & Longevity
Classification / Peptide Type	Dinucleotide coenzyme; cellular energy currency; DNA repair cofactor; sirtuin activator
Half-Life	Very short plasma half-life (minutes); intracellular levels sustained by precursor supplementation

DESCRIPTION

NAD+ is a fundamental coenzyme found in every cell that powers cellular energy production, activates longevity-associated sirtuins (SIRT1-7), and serves as substrate for DNA repair enzymes (PARPs). NAD+ levels decline dramatically with age and this decline is a central driver of aging. Supplementation is typically through precursors (NMN, NR) orally or direct IV/injection of NAD+ which rapidly elevates intracellular levels. IV NAD+ therapy has gained significant clinical attention for addiction, aging, and neurological recovery.

BENEFITS

Restores cellular energy production; activates sirtuins for longevity signaling; supports DNA repair; improves mitochondrial function; reduces neuroinflammation; potential for reversing aspects of aging.

SIDE EFFECTS

IV NAD+ causes nausea, flushing, chest tightness, and headaches if infused too rapidly. Oral precursors are very well tolerated. Injectable NAD+ requires slow administration.

PROTOCOL

IV NAD+ infusion: 500-1000 mg over 2-4 hours, 1-3x weekly for 4-8 weeks. SC injectable: 25-100 mg daily. Oral precursors NMN/NR: 250-1000 mg daily ongoing.

DOSING TABLES

NAD+ Administration Protocols

Route	Dose	Frequency	Notes
IV Infusion	500-1000 mg	1-3x weekly	Infuse over 2-4 hours minimum
SC Injection	25-100 mg	Daily	Smaller maintenance doses
Oral NMN	250-500 mg	Once daily	Most practical ongoing protocol
Oral NR	300-600 mg	Once daily	Alternative oral precursor

Nonapeptide-1

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Also Known As	Nonapeptide-1, Melanocyte Inhibiting Factor, MIF, Melitane, Melarase
Category	Pigmentation & Skin Tone
Classification / Peptide Type	Melanocyte inhibitor; tyrosinase expression suppressor; skin brightening peptide
Half-Life	—

DESCRIPTION

Nonapeptide-1 is a skin-brightening peptide that inhibits melanocyte stimulation by blocking the activation of adenylyl cyclase in melanocytes, effectively reducing melanin synthesis at the regulatory level upstream of tyrosinase. It provides a complementary brightening mechanism to direct tyrosinase inhibitors.

BENEFITS

Upstream inhibition of melanin synthesis; reduces hyperpigmentation and uneven skin tone; complementary to tyrosinase inhibitors; well tolerated.

SIDE EFFECTS

Excellent topical safety profile; rare mild skin irritation. Well suited for sensitive skin brightening formulations.

PROTOCOL

Research Goal: Study upstream melanocyte activation inhibition for pigmentation management. Used topically in brightening preparations.

DOSING TABLES

Nonapeptide-1 Topical Protocol

Concentration	Frequency	Application
5 ppm concentration	2x daily (AM/PM)	Face brightening preparation
10 ppm concentration	2x daily	Targeted dark spot treatment
Cosmeceutical use	5–10 ppm	Pair with tyrosinase inhibitors for synergy

Orforglipron

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Also Known As	Orforglipron, LY-3502970, LY3502970
Category	Metabolic & Weight Management
Classification / Peptide Type	Non-peptide oral GLP-1 receptor agonist; small molecule GLP-1R agonist; oral incretin mimetic
Half-Life	Approximately 13-16 hours; once-daily oral dosing

DESCRIPTION

Orforglipron is a non-peptide once-daily oral GLP-1 receptor agonist developed by Eli Lilly that overcomes the poor oral bioavailability of peptide GLP-1 agonists. Phase 2 trials showed 9.4-14.7% weight loss over 26 weeks, rivaling injectable semaglutide in efficacy with the major advantage of oral administration. No injection, no refrigeration, and no meal restrictions required. Currently in Phase 3 clinical trials for obesity and type 2 diabetes.

BENEFITS

Oral GLP-1 agonist - no injection required; 9-15% weight loss in Phase 2 trials; no refrigeration; no meal restrictions; simple once-daily oral dosing.

SIDE EFFECTS

Nausea, vomiting, diarrhea, constipation during dose titration (typical GLP-1 class side effects).

PROTOCOL

Not yet approved. Phase 2 research doses: 12-36 mg daily oral with titration from lower starting doses to manage GI side effects.

DOSING TABLES

Orforglipron Phase 2 Dosing (Research)

Phase	Daily Dose (mg)	Route
Starting	3 mg	Once daily oral
Escalation	12 mg	Once daily oral
Higher	24 mg	Once daily oral
Maximum studied	36 mg	Once daily oral
Status	Phase 3 ongoing	Not yet FDA approved

OS-01

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Also Known As	OS-01, OneSkin peptide 01, Skin longevity peptide OS-01
Category	Anti-Aging & Longevity
Classification / Peptide Type	Senomorphic peptide; skin aging modulator; extracellular matrix regulator
Half-Life	—

DESCRIPTION

OS-01 is a proprietary skin peptide developed by OneSkin that targets the molecular hallmarks of skin aging by reducing cellular senescence markers, improving extracellular matrix synthesis, and enhancing skin barrier function. Clinical studies show measurable improvements in multiple skin age biomarkers.

BENEFITS

Reduces skin cellular senescence markers; improves collagen and ECM synthesis; enhances skin barrier function; evidence-based skin longevity benefits.

SIDE EFFECTS

Excellent topical safety profile; well tolerated in clinical studies. Designed for daily topical use.

PROTOCOL

Research Goal: Study senomorphic mechanisms and skin longevity pathways. Used as topical formulation per OneSkin clinical protocols.

DOSING TABLES

OS-01 Topical Protocol

Form	Application	Frequency
OS-01 FACE serum	2-3 drops to face	Once daily (PM)
OS-01 BODY lotion	Apply to body skin	Once daily
Cosmeceutical use	Per OneSkin protocols	Clinical studies show 4-6 week response timeline

Ovagen

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Also Known As	Ovagen, Ovarian bioregulator, Ala-Glu-Asp-Pro, Liver and eye bioregulator
Category	Gastrointestinal & Gut Repair
Classification / Peptide Type	Bioregulatory peptide; liver tissue modulator; hepatoprotective agent
Half-Life	—

DESCRIPTION

Ovagen is a tetrapeptide bioregulator targeting liver and retinal cells to restore normal gene expression, support hepatic function, and protect against liver damage from oxidative stress and aging. Research shows hepatoprotective and potentially hepatoregenrative effects.

BENEFITS

Hepatoprotective; supports liver cell regeneration; restores normal hepatic gene expression; may improve retinal health; anti-aging for liver tissue.

SIDE EFFECTS

Excellent safety profile based on bioregulator research history; very well tolerated.

PROTOCOL

Ovagen (20mg) Goal: Study hepatic bioregulation and liver tissue normalization. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

Ovagen (20mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	200 mcg	2 units (0.02 mL)
Weeks 3-4	400 mcg	4 units (0.04 mL)
Weeks 5-12	600 mcg	6 units (0.06 mL)

Oxytocin

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Also Known As	Oxytocin, OXT, Pitocin (pharmaceutical brand), Love hormone, Bonding hormone
Category	Sexual Health & Fertility
Classification / Peptide Type	Endogenous hypothalamic neuropeptide; oxytocin receptor agonist; social bonding hormone
Half-Life	Approximately 1-6 minutes (extremely short plasma half-life)

DESCRIPTION

Oxytocin is the endogenous bonding hormone that promotes social connection, trust, and pair bonding while also supporting uterine contractions, lactation, and cardiovascular health. Research shows intranasal oxytocin improves social cognition, reduces anxiety, and enhances empathy in clinical and research settings.

BENEFITS

Promotes social bonding and trust; reduces anxiety and stress; improves social cognition; potential for autism and social anxiety research; cardiovascular benefits.

SIDE EFFECTS

Potential for hyponatremia with repeated high doses; nausea; excessive trust/bonding effects; uterine contractions (contraindicated in pregnancy); very short half-life.

PROTOCOL

Goal: Study oxytocin receptor activation for social behavior and anxiety research. Intranasal administration is most common for CNS effects.

DOSING TABLES

Oxytocin (10mg)

Schedule	Dose (IU)	Method
Standard	24-40 IU	Intranasal
Research Variable	10-80 IU	As per protocol

P21 (P021)

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Also Known As	P21, P021, CNTF-derived peptide, Ciliary neurotrophic factor peptide P021
Category	Cognitive & Neurological Health
Classification / Peptide Type	CNTF-derived neuroprotective peptide; synaptic plasticity enhancer; tau pathology modulator
Half-Life	—

DESCRIPTION

P21 (P021) is a CNTF-derived peptide that enhances synaptic plasticity, promotes neurogenesis in the dentate gyrus, and reduces tau hyperphosphorylation relevant to Alzheimer's disease. Research in transgenic Alzheimer's models shows cognitive improvement and neuroprotection with systemic administration.

BENEFITS

Enhances neurogenesis and synaptic plasticity; reduces tau hyperphosphorylation; cognitive improvement in Alzheimer's models; neuroprotective.

SIDE EFFECTS

Limited human safety data; well tolerated in preclinical studies. High research compound status.

PROTOCOL

P21 Goal: Study CNTF pathway activation and tau pathology modulation. Reconstitute with bacteriostatic water.

DOSING TABLES

P21 (5mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	100 mcg	1 unit (0.01 mL)
Weeks 3-4	200 mcg	2 units (0.02 mL)
Weeks 5-12	300 mcg	3 units (0.03 mL)

Pal-AHK

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Also Known As	Pal-AHK, Palmitoyl AHK, Palmitoyl-Ala-His-Lys, PAL-AHK, Palmitoyl Tripeptide-3
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	Palmitoylated copper-binding peptide; enhanced skin penetration wound healing peptide
Half-Life	—

DESCRIPTION

Pal-AHK is a palmitoyl-conjugated form of AHK that provides dramatically enhanced skin penetration through lipophilic membrane interaction while retaining full fibroblast activation and collagen stimulation activity. The palmitoyl group anchors it in skin membranes for prolonged local activity.

BENEFITS

Enhanced skin penetration vs basic AHK; stimulates collagen synthesis; improves wound healing; anti-aging benefits with superior bioavailability in topical use.

SIDE EFFECTS

Excellent safety profile; rare mild skin irritation; suitable for all skin types including sensitive skin.

PROTOCOL

Research Goal: Evaluate palmitoyl-enhanced fibroblast activation and skin penetration mechanics. Used in topical formulations at 0.01-0.1% concentration.

DOSING TABLES

Pal-AHK Topical Protocol

Concentration	Frequency	Application
0.01% concentration	2x daily (AM/PM)	Anti-aging face serum
0.1% concentration	2x daily	Targeted skin repair
Cosmeceutical use	0.01–0.1%	Enhanced penetration vs basic AHK

Pal-GHK (Palmitoyl Tripeptide-1)

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Also Known As	Pal-GHK, Palmitoyl Tripeptide-1, Palmitoyl GHK, PAL-GHK
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	Palmitoylated cosmeceutical peptide; matrikine mimetic; collagen synthesis stimulator
Half-Life	—

DESCRIPTION

Pal-GHK (Palmitoyl Tripeptide-1) is a palmitoylated GHK derivative that provides enhanced skin penetration and prolonged activity for collagen synthesis stimulation, wound healing promotion, and anti-aging effects. It is a key component in many advanced anti-aging serums and creams.

BENEFITS

Enhanced collagen synthesis via palmitoyl-enhanced penetration; wound healing; anti-aging skin remodeling; matrikine activity improves firmness and reduces wrinkles.

SIDE EFFECTS

Excellent safety profile; rare mild skin irritation; well tolerated across skin types.

PROTOCOL

Research Goal: Study palmitoyl-mediated enhancement of GHK-driven collagen synthesis. Used topically in anti-aging formulations.

DOSING TABLES

Pal-GHK Topical Protocol

Concentration	Frequency	Application
0.01% concentration	2x daily (AM/PM)	Anti-aging face serum
0.5% concentration	2x daily	Targeted repair/wrinkle treatment
Cosmeceutical use	0.01–0.5%	Key component of Matrixyl 3000 blend

Palmitoyl Dipeptide-6

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Also Known As	Palmitoyl Dipeptide-6, Pal-Lys-Val, Dermican, Palmitoyl Dipeptide 6
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	ECM-stimulating cosmeceutical dipeptide; dermatan sulfate proteoglycan inducer
Half-Life	—

DESCRIPTION

Palmitoyl Dipeptide-6 is a palmitoylated dipeptide that stimulates the synthesis of dermatan sulfate proteoglycans and type I collagen in dermal fibroblasts, improving skin thickness, moisture retention, and firmness. It targets the deep dermis through its lipophilic palmitoyl group.

BENEFITS

Stimulates dermatan sulfate proteoglycans and collagen; improves deep dermal firmness and moisture retention; anti-aging for skin thickness and elasticity.

SIDE EFFECTS

Excellent safety profile; well tolerated topically; rare mild irritation.

PROTOCOL

Research Goal: Evaluate deep dermal matrix stimulation via proteoglycan and collagen synthesis. Used topically in firming formulations.

DOSING TABLES

Palmitoyl Dipeptide-6 Topical Protocol

Concentration	Frequency	Application
2% concentration	2x daily (AM/PM)	Firming face serum
5% concentration	2x daily	Intensive firming and ECM support
Cosmeceutical use	2–5%	Targets deep dermal matrix

Pancragen

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Also Known As	Pancragen, Pancreatic bioregulator, KEDW tetrapeptide
Category	Metabolic & Weight Management
Classification / Peptide Type	Tissue-specific bioregulator; pancreatic regulatory peptide; epigenetic modulator
Half-Life	—

DESCRIPTION

Pancragen is a tetrapeptide bioregulator targeting pancreatic cells that reprograms DNA transcription to upregulate genes critical for pancreatic maturation while suppressing apoptotic signals. Research shows it reduces fasting glucose by up to 40% and normalizes insulin secretion, with effects persisting weeks after treatment concludes.

BENEFITS

Reduces fasting glucose up to 40%; normalizes insulin secretion; supports pancreatic regeneration; potential for diabetes management and post-pancreatitis recovery.

SIDE EFFECTS

Excellent safety profile based on bioregulator research; generally very well tolerated.

PROTOCOL

Pancragen (20mg) Goal: Study pancreatic bioregulation and insulin secretion normalization. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

Pancragen (20mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	200 mcg	2 units (0.02 mL)
Weeks 3-4	400 mcg	4 units (0.04 mL)
Weeks 5-12	600 mcg	6 units (0.06 mL)

PE-22-28

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Also Known As	PE-22-28, Spadin analog, TREK-1 channel blocker peptide
Category	Cognitive & Neurological Health
Classification / Peptide Type	TREK-1 potassium channel blocker; antidepressant peptide; neuroactive spadin analog
Half-Life	—

DESCRIPTION

PE-22-28 is an optimized fragment of spadin that blocks TREK-1 two-pore-domain potassium channels in the hippocampus, producing rapid antidepressant effects in animal models comparable to SSRIs but with faster onset (within days) and potential synaptogenic properties. Research suggests promise for treatment-resistant depression.

BENEFITS

Rapid antidepressant effects via TREK-1 blockade; promotes hippocampal neurogenesis; potential for treatment-resistant depression; faster onset than SSRIs.

SIDE EFFECTS

Limited human data; generally well tolerated in preclinical studies. High research compound status requiring further clinical validation.

PROTOCOL

PE-22-28 Goal: Study TREK-1 channel blockade and antidepressant neuroplasticity mechanisms. Reconstitute with bacteriostatic water.

DOSING TABLES

PE-22-28 (5mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	100 mcg	1 unit (0.01 mL)
Weeks 3-8	200 mcg	2 units (0.02 mL)

PEG MGF

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Also Known As	PEG MGF, PEGylated Mechano Growth Factor, Pegylated MGF
Category	Muscle & Physical Performance
Classification / Peptide Type	PEGylated IGF-1 splice variant; long-acting muscle growth factor; systemic satellite cell activator
Half-Life	Approximately 2-3 days (dramatically extended vs MGF's 5-7 minutes)

DESCRIPTION

PEG MGF is a polyethylene glycol-modified form of Mechano Growth Factor with a dramatically extended half-life that allows systemic muscle repair and hypertrophy benefits from a single injection. Unlike native MGF which works locally, PEG MGF circulates throughout the body, activating satellite cells systemically.

BENEFITS

Systemic satellite cell activation from single injection; supports whole-body muscle recovery and hypertrophy; 2-3 day half-life vs minutes for native MGF.

SIDE EFFECTS

Localized or diffuse edema; potential systemic IGF-1 effects; hypoglycemia risk at high doses; injection site reactions.

PROTOCOL

Goal: Study systemic satellite cell activation and whole-body muscle repair. Reconstitute with bacteriostatic water. Once or twice weekly injection.

DOSING TABLES

PEG MGF (2mg)

Schedule	Dose (mcg)	Frequency
Standard	200 mcg	2x weekly
Advanced	400 mcg	2x weekly

Pentapeptide-18 (Leuphasyl)

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Also Known As	Pentapeptide-18, Leuphasyl, Tyr-D-Ala-Gly-Phe-Leu
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	Opioid receptor-targeting cosmeceutical peptide; expression line reducer
Half-Life	—

DESCRIPTION

Pentapeptide-18 (Leuphasyl) is a cosmeceutical peptide that reduces facial expression lines by modulating enkephalin receptor activity to calm muscle signaling from within the skin, complementing the SNARE-inhibiting mechanism of Argireline for synergistic wrinkle reduction.

BENEFITS

Reduces expression lines via enkephalin receptor modulation; synergistic with Argireline; improves skin smoothness; well validated in cosmetic research.

SIDE EFFECTS

Excellent safety profile; well tolerated topically; rare mild irritation.

PROTOCOL

Research Goal: Evaluate enkephalin receptor-mediated muscle signaling modulation for expression line reduction. Used topically, often combined with Argireline.

DOSING TABLES

Pentapeptide-18 (Leuphasyl) Topical Protocol

Concentration	Frequency	Application
5% concentration	2x daily (AM/PM)	Expression line serum
10% concentration	2x daily	Synergistic use with Argireline
Cosmeceutical use	5–10%	Strongest effect when combined with SNAP-8 or Argireline

Pinealon

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Also Known As	Pinealon, EDR peptide, Glu-Asp-Arg, Glutamylaspartylarginine
Category	Cognitive & Neurological Health
Classification / Peptide Type	Bioregulator peptide; neuroprotective agent; geroprotector; pineal gland modulator
Half-Life	—

DESCRIPTION

Pinealon is a tripeptide bioregulator targeting pineal gland and neuronal cells to restore circadian rhythm regulation, support cognitive function, and provide neuroprotection against age-related decline. Research shows benefits for sleep quality, memory, and neurological health in aging populations.

BENEFITS

Supports circadian rhythm and sleep quality; neuroprotective; improves memory and cognitive function; supports pineal gland health; geroprotective effects.

SIDE EFFECTS

Excellent safety profile; very well tolerated based on bioregulator research history.

PROTOCOL

Pinealon (20mg) Goal: Study neuroprotective and stress-response pathways influenced by EDR/Pinealon. Reconstitute with 3.0 mL bacteriostatic water.

DOSING TABLES

Pinealon (20mg)

Week	Daily Dose (mcg)	Units (mL)
Weeks 1-2	200 mcg	3 units (0.03 mL)
Weeks 3-4	300 mcg	4.5 units (0.045 mL)
Weeks 5-6	400 mcg	6 units (0.06 mL)
Weeks 7-12	500 mcg	7.5 units (0.075 mL)

PNC-27

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Also Known As	PNC-27, Anticancer peptide PNC-27, HDM-2-binding peptide
Category	Specialized Research
Classification / Peptide Type	Anticancer peptide; membrane-active peptide; HDM-2-targeting agent; tumor cell necrosis inducer
Half-Life	—

DESCRIPTION

PNC-27 is a p53-derived peptide that selectively disrupts the membranes of cancer cells expressing MDM-2 on their surface, causing necrosis without harming normal cells. Preclinical studies show selective killing of pancreatic, breast, and other cancer cell lines with no toxicity to normal cells.

BENEFITS

Selective cancer cell membrane disruption; kills MDM-2-expressing tumor cells without harming normal cells; potential broad-spectrum anticancer activity.

SIDE EFFECTS

No human clinical trials completed; preclinical studies show high selectivity and low normal cell toxicity. High research compound status.

PROTOCOL

PNC-27 (30mg) Goal: Educational exploration of p53-derived peptide studied for selective cancer-cell membrane disruption. Reconstitute with 3.0 mL bacteriostatic water.

DOSING TABLES

PNC-27 (30mg)

Week	Daily Dose (mcg)	Units (mL)
Weeks 1-2	100 mcg	1 unit (0.01 mL)
Weeks 3-4	200 mcg	2 units (0.02 mL)
Weeks 5-8	300 mcg	3 units (0.03 mL)

Prostamax

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Also Known As	Prostamax, Prostate peptide bioregulator, KEDP peptide
Category	Sexual Health & Fertility
Classification / Peptide Type	Bioregulator peptide; prostate-specific tissue modulator; epigenetic regulator
Half-Life	—

DESCRIPTION

Prostamax is a tetrapeptide bioregulator targeting prostate glandular cells to restore normal gene expression, reduce inflammation, and support healthy prostate function. Research shows improvements in prostate health parameters and urinary function in aging males.

BENEFITS

Supports prostate tissue health and function; reduces prostate inflammation; may improve urinary function; anti-aging for prostate glandular tissue.

SIDE EFFECTS

Excellent safety profile based on bioregulator research history; generally very well tolerated.

PROTOCOL

Prostamax (20mg) Goal: Support prostate tissue health through bioregulatory peptide signaling. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

Prostamax (20mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	500 mcg	5 units (0.05 mL)
Weeks 3-4	750 mcg	7.5 units (0.075 mL)
Weeks 5+	1000 mcg	10 units (0.10 mL)

PT-141 (Bremelanotide)

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Also Known As	PT-141, Bremelanotide, Vyleesi (brand name)
Category	Sexual Health & Fertility
Classification / Peptide Type	Melanocortin receptor agonist; sexual dysfunction therapeutic; centrally-acting arousal agent
Half-Life	Approximately 2-3 hours

DESCRIPTION

PT-141 (Bremelanotide) is an FDA-approved melanocortin receptor agonist that increases sexual desire and arousal through CNS mechanisms rather than vascular effects, making it effective for both male erectile dysfunction and female hypoactive sexual desire disorder (HSDD). It activates MC3R and MC4R receptors in the hypothalamus.

BENEFITS

FDA-approved for female HSDD; increases sexual desire in both males and females; centrally acting (CNS mechanism); effective for cases where PDE5 inhibitors fail.

SIDE EFFECTS

Nausea, flushing, headache, and transient blood pressure increase are the most common effects. Hyperpigmentation with repeated use possible.

PROTOCOL

PT-141 Goal: Study melanocortin receptor-mediated sexual arousal pathways. Reconstitute with bacteriostatic water. Administer 45-60 min before activity.

DOSING TABLES

PT-141 (10mg)

Use Case	Dose (mcg)	Units (mL)
Standard Female	1750 mcg	5.25 units (0.0525 mL)
Standard Male	2000 mcg	6 units (0.06 mL)
Advanced	4000 mcg	12 units (0.12 mL)

Retatrutide

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Also Known As	Retatrutide, LY3437943, LY-3437943, Triple GLP-1/GIP/glucagon receptor agonist
Category	Metabolic & Weight Management
Classification / Peptide Type	Triple GLP-1/GIP/glucagon receptor agonist; anti-obesity peptide; metabolic regulator
Half-Life	Approximately 6 days (once-weekly dosing)

DESCRIPTION

Retatrutide is the most potent weight loss peptide in development, targeting all three incretin and glucagon receptors simultaneously for unprecedented fat loss. Phase II trials showed average weight reduction of 24.2% at 48 weeks, exceeding all currently approved weight loss medications. The triple agonist mechanism combines appetite suppression, enhanced fat burning, and improved metabolic efficiency.

BENEFITS

24.2% average weight loss in Phase II trials; most potent weight loss agent in development; triple receptor mechanism; also improves cardiometabolic risk factors.

SIDE EFFECTS

Nausea, vomiting, constipation during titration (typical incretin class effects); injection site reactions; gallbladder events possible.

PROTOCOL

Goal: Triple incretin/glucagon receptor agonism for obesity and metabolic research. Once-weekly subcutaneous injection with dose titration protocol.

DOSING TABLES

Retatrutide

Phase	Weekly Dose (mg)	Titration
Month 1	2 mg	Starting dose
Month 2	4 mg	Escalation
Month 3+	8-12 mg	Maintenance

Rigin (Palmitoyl Tetrapeptide-7)

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Also Known As	Rigin, Palmitoyl Tetrapeptide-7, Pal-GQPR, Palmitoyl Tetrapeptide-3
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	Immunomodulatory cosmeceutical tetrapeptide; anti-inflammatory skin peptide; immunoglobulin G fragment
Half-Life	—

DESCRIPTION

Rigin (Palmitoyl Tetrapeptide-7) is a palmitoylated tetrapeptide fragment of IgG that reduces IL-6 production to suppress chronic low-grade skin inflammation and reduce cortisol-mediated skin aging. It is a key ingredient in many advanced anti-aging formulations targeting inflammaging.

BENEFITS

Reduces IL-6 and skin inflammation; suppresses cortisol-driven skin aging; anti-inflammaging benefits; improves skin texture and reduces age-related changes.

SIDE EFFECTS

Excellent safety profile; very well tolerated topically; rare mild irritation.

PROTOCOL

Research Goal: Evaluate IgG-derived anti-inflammatory peptide modulation of skin inflammaging. Used topically in anti-aging formulations.

DOSING TABLES

Rigin (Palmitoyl Tetrapeptide-7) Topical Protocol

Concentration	Frequency	Application
4 ppm concentration	2x daily (AM/PM)	Anti-inflammaging face serum
8 ppm concentration	2x daily	Advanced anti-aging formulation
Cosmeceutical use	4–8 ppm	Often paired with Matrixyl or Argireline

Selank

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Also Known As	Selank, SLANK, Selanc, PL14736, Tuftsin analogue
Category	Cognitive & Neurological Health
Classification / Peptide Type	Nootropic peptide; anxiolytic agent; immunomodulatory peptide; neuroprotective agent
Half-Life	—

DESCRIPTION

Selank is a heptapeptide anxiolytic derived from tuftsin with clinical efficacy equal to benzodiazepine anxiolytics but without sedation, dependence, or cognitive impairment. It works through GABAergic enhancement and serotonergic/dopaminergic modulation to create calm without dulling mental clarity, while also supporting immune resilience and HPA axis normalization.

BENEFITS

Anxiolytic equal to benzodiazepines without addiction; maintains cognitive clarity while reducing anxiety; immune modulation; adaptogenic stress protection.

SIDE EFFECTS

Minimal side effects; mild headaches or slight fatigue reported; no dependence or withdrawal; intranasal use may cause minor nasal irritation.

PROTOCOL

Selank Goal: Study anxiolytic and immunomodulatory mechanisms. Available as intranasal or subcutaneous formulation.

DOSING TABLES

Selank (5mg)

Week	Daily Dose (mcg)	Method
Weeks 1-2	250 mcg	Intranasal or SC
Weeks 3-8	500 mcg	Intranasal or SC

Semaglutide

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Also Known As	Semaglutide, Ozempic, Wegovy, Rybelsus, Semaglutide acetate
Category	Metabolic & Weight Management
Classification / Peptide Type	GLP-1 receptor agonist; incretin mimetic; anti-obesity and antidiabetic peptide
Half-Life	Approximately 7 days (once-weekly dosing)

DESCRIPTION

Semaglutide is an FDA-approved GLP-1 receptor agonist that reduces appetite through hypothalamic GLP-1 receptor activation, slows gastric emptying, and improves insulin secretion. Clinical trials show 15-20% body weight reduction in obesity treatment and significant cardiovascular risk reduction, making it a breakthrough weight management therapy.

BENEFITS

15-20% average weight loss in clinical trials; reduces cardiovascular risk; FDA-approved for diabetes (Ozempic) and obesity (Wegovy); once-weekly dosing.

SIDE EFFECTS

Nausea, vomiting, diarrhea, constipation during dose titration; injection site reactions; rare pancreatitis; thyroid C-cell concern (black box warning).

PROTOCOL

Semaglutide Goal: GLP-1 receptor agonism for weight loss and metabolic improvement. Weekly subcutaneous injection with standard titration protocol.

DOSING TABLES

Semaglutide

Week	Weekly Dose (mg)	Escalation
Weeks 1-4	0.25 mg	Starting
Weeks 5-8	0.5 mg	Escalation
Weeks 9-12	1.0 mg	Maintenance
Weeks 13-16	1.7 mg	Advanced
Week 17+	2.4 mg	Maximum

Semax

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Also Known As	Semax, ACTH 4-10 Pro8Gly9Pro10 analogue, MEHFPGP, PA5
Category	Cognitive & Neurological Health
Classification / Peptide Type	Nootropic; ACTH analog; BDNF upregulator; neuroprotective peptide
Half-Life	Approximately 2-3 hours (intranasal)

DESCRIPTION

Semax is an ACTH-derived neuropeptide with unparalleled ability to enhance focus, memory, learning, motivation, and neuroprotection by upregulating BDNF, optimizing dopamine/serotonin balance, improving cerebral blood flow, and suppressing neuroinflammation. Research shows 30-50% improvements in attention and cognitive performance with no tolerance development.

BENEFITS

Upregulates BDNF; improves focus, memory, motivation; neuroprotective; anti-inflammatory; improves cerebral blood flow; no tolerance development.

SIDE EFFECTS

Generally well tolerated; potential for mild anxiety or overstimulation at high doses; intranasal administration may cause nasal irritation.

PROTOCOL

Semax Goal: Study ACTH analog-driven BDNF upregulation and cognitive enhancement. Available as intranasal or subcutaneous formulation.

DOSING TABLES

Semax (30mg)

Week	Daily Dose (mcg)	Method
Weeks 1-2	300 mcg	Intranasal
Weeks 3-8	600 mcg	Intranasal

Sermorelin

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Also Known As	Sermorelin, GRF (1-29)-NH2, GHRH (1-29), Geref, Sermorelin acetate
Category	Growth Hormone Optimization
Classification / Peptide Type	GHRH analog; pituitary GH secretagogue; anti-aging peptide
Half-Life	Approximately 10-20 minutes

DESCRIPTION

Sermorelin is a synthetic GHRH analog that stimulates the pituitary gland to naturally produce and release growth hormone, preserving the body's feedback loops rather than bypassing them like synthetic HGH. It supports body composition improvement, sleep quality, recovery, and anti-aging effects with excellent safety and tolerability.

BENEFITS

Naturally stimulates GH production; preserves pituitary GH feedback loops; improves body composition, sleep quality, recovery, and skin; excellent safety profile.

SIDE EFFECTS

Injection site reactions (redness/swelling) are most common; headaches or flushing rarely; potential subclinical hypothyroidism requiring monitoring.

PROTOCOL

Goal: Stimulate natural GH production for body composition and anti-aging research. Reconstitute with bacteriostatic water. Inject before bedtime.

DOSING TABLES

Sermorelin (15mg)

Week	Daily Dose (mcg)	Units (mL)
Weeks 1-4	200 mcg	4 units (0.04 mL)
Weeks 5-8	300 mcg	6 units (0.06 mL)
Weeks 9-12	300-500 mcg	6-10 units

SLU-PP-332

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Also Known As	SLU-PP-332, ERR pan-agonist, Estrogen-Related Receptor agonist
Category	Metabolic & Weight Management
Classification / Peptide Type	Estrogen-related receptor (ERR) pan-agonist; exercise mimetic; mitochondrial biogenesis activator
Half-Life	—

DESCRIPTION

SLU-PP-332 is a synthetic small molecule that activates estrogen-related receptors (ERRalpha, ERRbeta, ERRgamma) to powerfully stimulate mitochondrial biogenesis and mimic the metabolic adaptations of endurance exercise. Research in animals shows it dramatically increases endurance capacity (up to 70% improvement), promotes fat burning, reduces fat mass, and improves cardiac function without physical training. It is at very early preclinical stages with no human data.

BENEFITS

Mimics endurance exercise adaptations; dramatically increases mitochondrial density; improves endurance up to 70% in animal models; promotes fat oxidation; potential cardioprotective effects.

SIDE EFFECTS

Very limited safety data. Early preclinical stage only. No human trials completed. Unknown long-term effects.

PROTOCOL

SLU-PP-332 is a preclinical compound. No human dosing established. Animal studies: 50-100 mg/kg orally daily x 4 weeks. Research use only.

DOSING TABLES

SLU-PP-332 Preclinical Reference

Model	Dose	Route	Duration
Mouse endurance study	50 mg/kg/day	Oral gavage	4 weeks
Mouse fat loss study	100 mg/kg/day	Oral gavage	4 weeks
Human equivalent	Not established	N/A	No clinical data

SNAP-8

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Also Known As	SNAP-8, Acetyl Octapeptide-3, Acetyl Octapeptide-1, Leuphasyl-Argireline
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	SNARE complex inhibitor; octapeptide; cosmeceutical anti-wrinkle agent
Half-Life	—

DESCRIPTION

SNAP-8 is an extended version of Argireline (Acetyl Hexapeptide-3) that inhibits the SNARE complex more effectively, producing a 35% average reduction in expression wrinkle depth in clinical trials. As an octapeptide, it more closely mimics the N-terminal SNAP-25 domain for superior wrinkle reduction.

BENEFITS

35% reduction in expression wrinkle depth in clinical trials; more potent than Argireline; reduces crow's feet and forehead lines; improves skin elasticity.

SIDE EFFECTS

Excellent safety profile; well tolerated topically across skin types; rare mild irritation.

PROTOCOL

Research Goal: Evaluate enhanced SNARE complex inhibition for superior expression wrinkle reduction. Used topically, often combined with Argireline.

DOSING TABLES

SNAP-8 Topical Protocol

Concentration	Frequency	Application
5% concentration	2x daily (AM/PM)	Expression wrinkle serum
10-15% concentration	2x daily	Maximum wrinkle reduction protocol
Clinical data	35% wrinkle reduction	28 days at 10%+ concentration

SS-31

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Also Known As	SS-31, Elamipretide, MTP-131, Bendavia, SS Peptide
Category	Anti-Aging & Longevity
Classification / Peptide Type	Mitochondria-targeted peptide; cardiolipin stabilizer; mitochondrial membrane protector
Half-Life	—

DESCRIPTION

SS-31 (Elamipretide) is a cell-permeable tetrapeptide that selectively concentrates in the inner mitochondrial membrane to stabilize cardiolipin, prevent mitochondrial dysfunction, reduce ROS production, and restore energy production. Clinical trials show benefits for heart failure, mitochondrial myopathy, and age-related mitochondrial decline.

BENEFITS

Restores mitochondrial function; reduces ROS and oxidative stress; benefits heart failure and mitochondrial myopathy in trials; anti-aging energy restoration.

SIDE EFFECTS

Generally well tolerated in clinical trials; injection site reactions; mild GI effects at higher doses.

PROTOCOL

SS-31 Goal: Study mitochondrial cardiolipin stabilization and energy restoration. Reconstitute with bacteriostatic water.

DOSING TABLES

SS-31 (10mg) Dosing Protocol

Phase	Daily Dose	Units (per injection)
Weeks 1-2	5 mg (5000 mcg)	50 units (0.50 mL)
Weeks 3-8	10 mg (10,000 mcg)	100 units (1.0 mL)

Survodutide

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Also Known As	Survodutide, BI 456906, GCGR/GLP-1R dual agonist
Category	Metabolic & Weight Management
Classification / Peptide Type	GLP-1/glucagon dual receptor agonist; anti-obesity peptide
Half-Life	Approximately 5-7 days

DESCRIPTION

Survodutide is a dual GLP-1/glucagon receptor agonist combining GLP-1-mediated appetite suppression with glucagon-driven metabolic rate increase and fat oxidation. Phase II trials showed significant body weight reduction and improvements in metabolic and liver health markers, with potential for NASH treatment.

BENEFITS

Dual GLP-1/glucagon mechanism for superior weight loss; potential benefits for NASH/NAFLD; improves metabolic markers; once-weekly dosing.

SIDE EFFECTS

Nausea, vomiting during titration; injection site reactions; GI effects typical of GLP-1 class. Generally manageable.

PROTOCOL

Goal: Study dual GLP-1/glucagon receptor agonism for obesity and liver disease research. Once-weekly subcutaneous protocol.

DOSING TABLES

Survodutide Research Protocol (Phase 2 Clinical)

Phase	Weekly Dose (mg)	Escalation
Weeks 1-4	0.6 mg	Starting dose (SC weekly)
Weeks 5-8	2.4 mg	Escalation
Weeks 9-12	3.6 mg	Escalation
Weeks 13-20	4.8 mg	Maintenance dose
Phase 3 targets	3.6 or 6.0 mg	SYNCHRONIZE trial

Syn-AKE

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Also Known As	Syn-AKE, Dipeptide Diaminobutyroyl Benzylamide Diacetate, Viper venom-inspired peptide
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	Synthetic snake venom analog peptide; ion channel modulator; cosmeceutical anti-wrinkle agent
Half-Life	—

DESCRIPTION

Syn-AKE is a synthetic tripeptide inspired by the muscle-relaxing component of Temple Viper venom (Waglerin-1) that blocks voltage-gated sodium channels in facial muscles to reduce expression lines, without the dangers of actual venom. Clinical studies show up to 52% reduction in wrinkle depth with topical use.

BENEFITS

Up to 52% reduction in wrinkle depth; relaxes facial expression muscles via sodium channel blockade; Botox-inspired but topical; proven in clinical studies.

SIDE EFFECTS

Excellent safety profile; well tolerated topically; rare mild skin sensitivity. Much safer than injectable neuromodulators.

PROTOCOL

Research Goal: Evaluate synthetic venom peptide-mediated sodium channel modulation for expression wrinkle reduction. Used topically at 4-8% concentration.

DOSING TABLES

Syn-AKE Topical Protocol

Concentration	Frequency	Application
4% concentration	2x daily (AM/PM)	Expression line serum
8% concentration	2x daily	Maximum wrinkle reduction
Clinical data	52% wrinkle reduction	At 4% over 28 days
Cosmeceutical use	4–8%	Can combine with Argireline or SNAP-8

Syn-Coll (Palmitoyl Tripeptide-5)

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Also Known As	Syn-Coll, Palmitoyl Tripeptide-5, Pal-KVK, Palmitoyl-Lys-Val-Lys
Category	Healing & Tissue Repair
Classification / Peptide Type	TGF-beta mimicking cosmeceutical peptide; collagen synthesis stimulator; skin remodeling agent
Half-Life	—

DESCRIPTION

Syn-Coll (Palmitoyl Tripeptide-5) mimics the activity of thrombospondin-1 to activate TGF-beta pathways for collagen synthesis stimulation, improving skin firmness, reducing wrinkle depth, and restoring youthful dermal architecture. Clinical studies show comparable collagen-stimulating activity to TGF-beta itself.

BENEFITS

Mimics TGF-beta to stimulate collagen synthesis; improves skin firmness and reduces wrinkle depth; clinical studies show significant anti-aging benefits.

SIDE EFFECTS

Excellent safety profile; suitable for sensitive skin; very well tolerated topically.

PROTOCOL

Research Goal: Evaluate TGF-beta pathway activation for collagen synthesis and skin remodeling. Used topically in anti-aging formulations.

DOSING TABLES

Syn-Coll Topical Protocol

Concentration	Frequency	Application
3% concentration	2x daily (AM/PM)	Anti-aging collagen serum
5% concentration	2x daily	Intensive firming treatment
Cosmeceutical use	3–5%	Combine with Matrixyl for additive collagen stimulation

TB-500 (Thymosin Beta-4)

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Also Known As	TB-500, Thymosin Beta-4, Thymosin B4, LKKTETQ (active fragment)
Category	Muscle & Physical Performance
Classification / Peptide Type	Actin-sequestering peptide; tissue repair and regeneration peptide; angiogenesis promoter
Half-Life	Approximately 2-8 hours

DESCRIPTION

TB-500 (Thymosin Beta-4) is a naturally occurring 43-amino acid peptide that promotes tissue repair, reduces inflammation, supports angiogenesis, and accelerates recovery from injury through actin sequestration and upregulation of cell-building proteins. Research shows accelerated healing in muscles, tendons, ligaments, and cardiac tissue.

BENEFITS

Accelerates tissue repair and recovery; reduces inflammation; promotes angiogenesis; improves flexibility and reduces scar tissue; cardiac protective effects.

SIDE EFFECTS

Generally well tolerated; mild injection site reactions; potential for fatigue or flu-like symptoms. Long-term safety data limited.

PROTOCOL

TB-500 Goal: Study systemic tissue repair and angiogenesis. Reconstitute with bacteriostatic water. Typically dosed 2-4x per week.

DOSING TABLES

TB-500 (5mg)

Phase	Weekly Dose (mg)	Frequency
Loading	10 mg	2x weekly x 4-6 weeks
Maintenance	5 mg	1-2x weekly

TB-500 Fragment (17-23)

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Also Known As	TB-500 Fragment (17-23), Ac-LKKTETQ
Category	Healing & Tissue Repair
Classification / Peptide Type	Non-glycosylated synthetic polypeptide; actin-binding domain fragment
Half-Life	Enhanced resistance to degradation compared to native TB-500

DESCRIPTION

TB-500 Fragment 17-23 (Ac-LKKTETQ) is the core actin-binding domain of Thymosin Beta-4, offering targeted cytoskeletal modulation with enhanced stability and lower molecular weight for superior tissue penetration. It retains full actin sequestration and cell migration promotion without broader immunomodulatory effects, enabling precise tissue repair research.

BENEFITS

Targeted actin-binding domain activity; superior tissue penetration vs full TB-500; enhanced stability; focused tissue repair without systemic immunomodulation.

SIDE EFFECTS

Generally well tolerated in preclinical studies; similar safety profile to TB-500 but more targeted.

PROTOCOL

TB-500 Fragment 17-23 Goal: Study actin dynamics and targeted tissue repair mechanisms. Reconstitute with bacteriostatic water.

DOSING TABLES

TB-500 Fragment 17-23 (5mg)

Phase	Weekly Dose (mg)	Frequency
Loading	5 mg	2x weekly x 4 weeks
Maintenance	2.5 mg	1-2x weekly

Tesamorelin

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Also Known As	Tesamorelin, Egrifta, TH9507, Tesamorelin acetate
Category	Metabolic & Weight Management
Classification / Peptide Type	GHRH analog; lipodystrophy treatment; FDA-approved GH secretagogue
Half-Life	Approximately 26-38 minutes

DESCRIPTION

Tesamorelin is an FDA-approved GHRH analog specifically approved for HIV-associated lipodystrophy that reduces visceral adipose tissue by stimulating natural GH release. It reduces visceral fat by 15-20% in clinical trials and has potential applications in non-HIV visceral obesity and metabolic syndrome.

BENEFITS

FDA-approved; reduces visceral fat 15-20%; improves body composition and metabolic markers; potential for metabolic syndrome and non-HIV visceral obesity.

SIDE EFFECTS

Injection site reactions, arthralgias, edema, and transient glucose elevations. Contraindicated in cancer, during pregnancy, and with active pituitary pathology.

PROTOCOL

Tesamorelin Goal: Study GHRH analog-mediated visceral fat reduction. Reconstitute with provided diluent. Daily subcutaneous abdominal injection.

DOSING TABLES

Tesamorelin (10mg)

Phase	Daily Dose (mg)	Units (mL)
Standard	2 mg	6 units (0.06 mL)
Clinical Protocol	2 mg	Daily SC injection

Tesofensine

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Also Known As	Tesofensine, NS2330, TE-2330
Category	Metabolic & Weight Management
Classification / Peptide Type	Triple monoamine reuptake inhibitor (serotonin, norepinephrine, dopamine); weight loss agent; non-peptide
Half-Life	Approximately 8 days; enables once-daily oral dosing

DESCRIPTION

Tesofensine is a triple monoamine reuptake inhibitor originally developed for Parkinson and Alzheimer disease, where it incidentally produced dramatic weight loss in trials. Phase 2 trials showed 9-11% weight loss at 0.5 mg/day over 24 weeks, making it one of the most potent weight loss agents studied. It reduces appetite and increases metabolic rate through central monoamine enhancement. It is not a peptide but is commonly grouped in the same metabolic research category.

BENEFITS

Potent appetite suppression via triple monoamine reuptake inhibition; 9-11% weight loss in Phase 2; increases metabolic rate; once-daily oral dosing.

SIDE EFFECTS

Increased heart rate and blood pressure, dry mouth, insomnia, nausea, constipation. Potential psychiatric effects due to dopaminergic activity. Not currently approved.

PROTOCOL

Tesofensine Phase 2 research doses: 0.25 mg starting, titrated to 0.5-1.0 mg/day oral once daily. Not FDA approved; clinical development by Saniona.

DOSING TABLES

Tesofensine Phase 2 Dosing (Research)

Phase	Daily Dose (mg)	Route
Low dose	0.25 mg	Once daily oral
Standard	0.5 mg	Once daily oral
High dose	1.0 mg	Once daily oral

Phase 2 Weight Loss Results

Dose	24-Week Weight Loss
Placebo	-2.2%
0.25 mg	-6.7%
0.5 mg	-11.3%
1.0 mg	-12.8%

Testagen

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Also Known As	Testagen, Testicular bioregulator, Lys-Glu-Asp-Gly, KEDG tetrapeptide
Category	Sexual Health & Fertility
Classification / Peptide Type	Bioregulatory peptide; testicular tissue modulator; reproductive system regulator
Half-Life	—

DESCRIPTION

Testagen is a tetrapeptide bioregulator targeting testicular Sertoli and Leydig cells to restore normal gene expression, support testosterone production, and maintain reproductive health. Research indicates potential benefits for male fertility, testosterone levels, and testicular tissue health in aging males.

BENEFITS

Supports testicular tissue health; may improve testosterone production; potential male fertility support; anti-aging for reproductive tissue.

SIDE EFFECTS

Excellent safety profile based on bioregulator research; generally very well tolerated.

PROTOCOL

Testagen (20mg) Goal: Study testicular tissue bioregulation and reproductive hormone support. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

Testagen (20mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	200 mcg	2 units (0.02 mL)
Weeks 3-4	400 mcg	4 units (0.04 mL)
Weeks 5-12	600 mcg	6 units (0.06 mL)

Thymagen (Thymogen)

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Also Known As	Thymagen, Thymogen, Glu-Trp dipeptide, EW dipeptide, Immunofan analog
Category	Immune Support & Inflammation
Classification / Peptide Type	Thymic dipeptide; immune modulator; T-cell stimulating agent
Half-Life	—

DESCRIPTION

Thymagen (Thymogen) is a thymus-derived dipeptide that stimulates T-lymphocyte maturation and immune function by activating thymic hormone-dependent immune pathways. Research shows it improves immune response in immunocompromised states and may support immune resilience in aging populations.

BENEFITS

Stimulates T-lymphocyte maturation; enhances immune response; supports immune resilience; potential for immunocompromised states and immune aging.

SIDE EFFECTS

Excellent safety profile; very well tolerated; rare injection site reactions.

PROTOCOL

Thymagen Goal: Study thymic immune pathway activation and T-cell stimulation. Reconstitute with bacteriostatic water.

DOSING TABLES

Thymagen (20mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-4	100 mcg	1 unit (0.01 mL)
Weeks 5-8	200 mcg	2 units (0.02 mL)

Thymalin

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Also Known As	Thymalin, Timelin, Thymicline, Thymus extract peptide bioregulator
Category	Immune Support & Inflammation
Classification / Peptide Type	Thymic bioregulator complex; immune system modulator; T-cell maturation promoter
Half-Life	—

DESCRIPTION

Thymalin is a thymic peptide bioregulator complex that restores thymic function, promotes T-cell maturation, and rejuvenates immune system function in aging individuals. Extensive Russian clinical research over decades shows it significantly extends healthy lifespan and reduces all-cause mortality in elderly populations through immune rejuvenation.

BENEFITS

Restores thymic function; promotes T-cell maturation; reduces all-cause mortality in elderly in clinical studies; immune rejuvenation and anti-aging immune support.

SIDE EFFECTS

Excellent long-term safety profile documented in clinical research; generally very well tolerated; rare injection site reactions.

PROTOCOL

Thymalin Goal: Study thymic function restoration and immune system rejuvenation. Reconstitute with bacteriostatic water.

DOSING TABLES

Thymalin (20mg)

Phase	Daily Dose (mg)	Units (mL)
Phase 1	10 mg	10 units (0.10 mL)
Phase 2	20 mg	20 units (0.20 mL)

Thymosin Alpha-1

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Also Known As	Thymosin Alpha-1, Thymalfasin, Zadaxin, Ta1, TA-1
Category	Immune Support & Inflammation
Classification / Peptide Type	Thymic peptide; immune modulator; T-cell activator; antiviral and anticancer immunostimulant
Half-Life	Approximately 2 hours

DESCRIPTION

Thymosin Alpha-1 is an FDA-approved thymic peptide (as Zadaxin) that enhances T-cell maturation, NK cell activity, and dendritic cell function for broad immune enhancement. It is used clinically in hepatitis B/C, as a vaccine adjuvant, and for immune reconstitution in cancer patients, with strong evidence across multiple immune conditions.

BENEFITS

FDA-approved (Zadaxin); enhances T-cells, NK cells, and dendritic cells; treats hepatitis B/C; vaccine adjuvant; immune reconstitution in cancer; antiviral.

SIDE EFFECTS

Generally very well tolerated; injection site reactions; mild flu-like symptoms in some patients. Excellent long-term safety record.

PROTOCOL

Thymosin Alpha-1 Goal: Study broad T-cell and innate immune enhancement. Reconstitute with bacteriostatic water.
Twice-weekly injection protocol.

DOSING TABLES

Thymosin Alpha-1 (5mg)

Schedule	Dose (mg)	Frequency
Standard	1.6 mg	2x weekly
Intensive	3.2 mg	2x weekly

Thymulin

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Also Known As	Thymulin, FTS, Facteur thymique serique, Serum thymic factor
Category	Immune Support & Inflammation
Classification / Peptide Type	Zinc-dependent thymic hormone; T-cell maturation factor; immune-endocrine modulator
Half-Life	—

DESCRIPTION

Thymulin is a zinc-dependent nonapeptide hormone secreted by thymic epithelial cells that is essential for T-cell differentiation and maturation. Thymulin levels decline precipitously with age and zinc deficiency. Research shows thymulin restoration supports immune function, neuroendocrine balance, and may have anti-inflammatory properties.

BENEFITS

Essential for T-cell differentiation; supports immune function and neuroendocrine balance; anti-inflammatory; declines with age making supplementation potentially valuable.

SIDE EFFECTS

Generally well tolerated; zinc-dependent activity means zinc status affects efficacy; limited clinical data for injectable form.

PROTOCOL

Thymulin Goal: Study T-cell differentiation and zinc-dependent thymic hormone activity. Reconstitute with bacteriostatic water.

DOSING TABLES

Thymulin Research Protocol

Phase	Daily Dose (mg)	Duration
Standard Cycle	2 mg SC daily	20 days, then stop
Frequency	3 cycles/year	Every 4 months
Zinc note	15-30 mg/day zinc	Required co-supplementation for biological activity
20mg vial: 2mL BAC water = 10 mg/mL; 2 mg dose = 20 units		

Tirzepatide

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Also Known As	Tirzepatide, Mounjaro, Zepbound, LY3298176
Category	Metabolic & Weight Management
Classification / Peptide Type	GLP-1/GIP dual receptor agonist; incretin mimetic; anti-obesity and antidiabetic peptide
Half-Life	Approximately 5 days (once-weekly dosing)

DESCRIPTION

Tirzepatide is an FDA-approved dual GLP-1/GIP receptor agonist that produces superior weight loss compared to GLP-1 monotherapy through complementary appetite-suppressing and insulin-sensitizing mechanisms. Clinical trials show 20-22% average body weight reduction, making it the most effective approved weight loss medication currently available.

BENEFITS

20-22% average weight loss in trials; FDA-approved for obesity (Zepbound) and diabetes (Mounjaro); superior to GLP-1 monotherapy; once-weekly dosing.

SIDE EFFECTS

Nausea, vomiting, diarrhea, constipation during titration; injection site reactions; rare pancreatitis; thyroid C-cell concern (black box warning).

PROTOCOL

Tirzepatide Goal: Study dual GLP-1/GIP receptor agonism for diabetes and obesity. Weekly subcutaneous injection with standard titration protocol.

DOSING TABLES

Tirzepatide

Week	Dose (mg)	Escalation
Weeks 1-4	2.5 mg	Starting
Weeks 5-8	5 mg	Escalation
Weeks 9-12	7.5 mg	Escalation
Weeks 13-16	10 mg	Escalation
Week 17+	12.5-15 mg	Maximum

TRH Thyrotropin (Protirelin)

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Also Known As	TRH, Thyrotropin-releasing hormone, Protirelin, Lopremone, Thypinone
Category	Metabolic & Weight Management
Classification / Peptide Type	Hypothalamic tripeptide hormone; TSH and prolactin secretagogue; neuropeptide
Half-Life	Approximately 2-6 minutes

DESCRIPTION

TRH (Thyrotropin-Releasing Hormone) is the hypothalamic tripeptide that stimulates TSH and prolactin release from the pituitary, regulating the entire thyroid axis. Research also shows direct CNS effects including alertness, antidepressant activity, and neuroprotection independent of thyroid hormone effects.

BENEFITS

Stimulates thyroid axis; direct CNS effects including alertness and antidepressant activity; neuroprotective; potential for depression and cognitive enhancement.

SIDE EFFECTS

Nausea, facial flushing, urge to urinate shortly after injection; very short half-life requires frequent dosing or specialized delivery.

PROTOCOL

TRH Goal: Study hypothalamic-pituitary-thyroid axis regulation and direct CNS neuropeptide effects. Reconstitute with bacteriostatic water.

DOSING TABLES

TRH

Schedule	Dose	Method
CNS Research	0.5-1.0 mg	IV or SC bolus
Thyroid Stimulation	0.5 mg	IV push for diagnostic

Tripeptide-29

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Also Known As	Tripeptide-29, Gly-Pro-Hyp, Collagen tripeptide
Category	Healing & Tissue Repair
Classification / Peptide Type	Collagen-derived tripeptide; fibroblast stimulating agent; skin remodeling peptide
Half-Life	—

DESCRIPTION

Tripeptide-29 (Gly-Pro-Hyp) is the most abundant collagen-derived tripeptide that directly stimulates fibroblast collagen and elastin synthesis through specific receptor binding. Clinical studies show significant improvements in skin hydration, firmness, and wrinkle reduction, making it valuable for skin aging research.

BENEFITS

Directly stimulates fibroblast collagen and elastin synthesis; improves skin hydration, firmness, and reduces wrinkles; well validated in clinical studies.

SIDE EFFECTS

Excellent safety profile; very well tolerated topically and orally. Bioavailable as oral supplement or topical application.

PROTOCOL

Research Goal: Evaluate collagen-derived tripeptide stimulation of fibroblast collagen synthesis. Used topically or as oral supplement in research.

DOSING TABLES

Tripeptide-29 Application Protocol

Form	Dose	Frequency	Duration
Topical	1-5% concentration	2x daily (AM/PM)	8-12 weeks
Oral supplement	2.5-5 g/day	Once daily with food	12+ weeks
Cosmeceutical use	1–5%	Combined with other collagen peptides	

Triptorelin

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Also Known As	Triptorelin, Triptoreline, [D-Trp6]-GnRH, Decapeptyl, Diphereline
Category	Sexual Health & Fertility
Classification / Peptide Type	GnRH receptor agonist; gonadotropin-releasing hormone analog; pituitary hormone secretagogue
Half-Life	Approximately 2 hours vs 3-5 minutes for native GnRH

DESCRIPTION

Triptorelin is a GnRH agonist that initially stimulates and then suppresses LH and FSH to castration-level testosterone suppression when used continuously, making it first-line therapy for prostate cancer achieving 97% PSA reduction. Short-term use can serve as a post-cycle therapy tool for testosterone axis restart.

BENEFITS

FDA-approved for prostate cancer (97% PSA reduction); pituitary axis restart for PCT; delayed puberty management; endometriosis treatment.

SIDE EFFECTS

Hot flashes, decreased libido, bone density reduction with long-term use; flare effect at initiation; injection site reactions.

PROTOCOL

Triptorelin Goal: Study GnRH receptor agonism for prostate cancer research or PCT protocols. Reconstitute with bacteriostatic water.

DOSING TABLES

Triptorelin (2mg)

Use	Dose	Schedule
PCT Protocol	100 mcg	Single dose
Prostate Cancer	3.75 mg	Monthly depot

Vesilute

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Also Known As	Vesilute, Palmitoyl Dipeptide-5 diaminohydroxybutyrate, PadSH
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	Laminin-mimicking dipeptide; dermal-epidermal junction reinforcement peptide
Half-Life	—

DESCRIPTION

Vesilute is a palmitoylated dipeptide that mimics laminin to reinforce the dermal-epidermal junction, improving skin cohesion, resilience, and resistance to sagging and wrinkle formation. It strengthens the structural anchor between skin layers for long-lasting anti-aging effects.

BENEFITS

Reinforces dermal-epidermal junction; improves skin cohesion and resilience; reduces sagging; long-lasting structural anti-aging benefits.

SIDE EFFECTS

Excellent safety profile; very well tolerated topically; rare mild irritation.

PROTOCOL

Research Goal: Evaluate laminin-mimetic strengthening of dermal-epidermal junction for skin resilience. Used topically in anti-aging formulations.

DOSING TABLES

Vesilute Topical Protocol

Concentration	Frequency	Application
2% concentration	2x daily (AM/PM)	Firming face serum
5% concentration	2x daily	Intensive dermal-epidermal junction support
Cosmeceutical use	2–5%	Targets structural anchor between skin layers

Vesugen

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Also Known As	Vesugen, Vascular bioregulator, Lys-Glu-Asp, KED tripeptide
Category	Cardiovascular & Pulmonary Health
Classification / Peptide Type	Bioregulatory peptide; vascular tissue modulator; endothelial cell regulator
Half-Life	—

DESCRIPTION

Vesugen is a tripeptide bioregulator (Lys-Glu-Asp) targeting vascular endothelial cells to restore normal gene expression, reduce vascular aging, and support healthy blood vessel function. Research suggests cardiovascular protective effects through endothelial cell normalization.

BENEFITS

Supports vascular endothelial health; cardiovascular protective effects; anti-aging for vascular tissue; restores endothelial gene expression.

SIDE EFFECTS

Excellent safety profile based on bioregulator research; generally very well tolerated.

PROTOCOL

Vesugen (20mg) Goal: Study vascular bioregulation and endothelial cell normalization. Reconstitute with 2.0 mL bacteriostatic water.

DOSING TABLES

Vesugen (20mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-2	200 mcg	2 units (0.02 mL)
Weeks 3-4	400 mcg	4 units (0.04 mL)
Weeks 5-12	600 mcg	6 units (0.06 mL)

Vialox

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Also Known As	Vialox, Pentapeptide-3, Pentapeptide-3V, GPRPA
Category	Skincare & Cosmetic Peptides
Classification / Peptide Type	Nicotinic receptor antagonist peptide; cosmeceutical anti-wrinkle agent; curare-inspired peptide
Half-Life	—

DESCRIPTION

Vialox (Pentapeptide-3) is inspired by tubocurarine (curare) and reduces expression wrinkles by blocking nicotinic acetylcholine receptors at the neuromuscular junction to relax facial muscles, reducing the depth of expression lines through a mechanism complementary to SNARE-inhibiting peptides.

BENEFITS

Reduces expression wrinkle depth via nicotinic receptor blockade; complementary mechanism to Argireline; improves facial line reduction in combination formulas.

SIDE EFFECTS

Excellent safety profile; very well tolerated topically; suitable for sensitive skin.

PROTOCOL

Research Goal: Evaluate nicotinic receptor-mediated muscle relaxation for expression wrinkle reduction. Used topically, often in combination formulas.

DOSING TABLES

Vialox (Pentapeptide-3) Topical Protocol

Concentration	Frequency	Application
5% concentration	2x daily (AM/PM)	Expression line serum
10% concentration	2x daily	Maximum wrinkle reduction
Cosmeceutical use	5–10%	Complementary mechanism to Argireline (different receptor target)

Vilon

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Also Known As	Vilon, Lys-Glu dipeptide, KE peptide
Category	Anti-Aging & Longevity
Classification / Peptide Type	Thymic dipeptide; immune bioregulator; anti-aging geroprotector
Half-Life	—

DESCRIPTION

Vilon is a thymus-derived dipeptide (Lys-Glu) that serves as one of the most fundamental bioregulators, supporting immune function, reducing inflammation, and demonstrating significant geroprotective effects in extensive Russian clinical research. It supports thymic function and T-cell activity similar to but more targeted than larger thymic bioregulators.

BENEFITS

Supports thymic immune function; geroprotective; reduces inflammation; improves T-cell activity; foundational bioregulator with extensive safety record.

SIDE EFFECTS

Excellent safety profile documented in clinical research; generally very well tolerated.

PROTOCOL

Vilon Goal: Study thymic dipeptide immune modulation and geroprotective pathways. Reconstitute with bacteriostatic water.

DOSING TABLES

Vilon (20mg)

Phase	Daily Dose (mcg)	Units (mL)
Weeks 1-4	100 mcg	1 unit (0.01 mL)
Weeks 5-12	200 mcg	2 units (0.02 mL)

VIP

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Also Known As	VIP, Vasoactive Intestinal Peptide, Vasoactive Intestinal Polypeptide
Category	Gastrointestinal & Gut Repair
Classification / Peptide Type	Neuropeptide; vasodilator; neuroimmune modulator; VPAC receptor agonist
Half-Life	Approximately 2 minutes (extremely short native half-life)

DESCRIPTION

VIP (Vasoactive Intestinal Peptide) is a 28-amino acid neuropeptide with broad regulatory roles including vasodilation, bronchodilation, immune modulation, anti-inflammation, and neuroprotection. Research applications include autoimmune diseases, respiratory conditions, and neurological protection.

BENEFITS

Vasodilation and bronchodilation; potent anti-inflammatory and immune modulation; neuroprotective; potential for autoimmune disease, COPD, and neurological research.

SIDE EFFECTS

Hypotension at high doses due to vasodilation; very short half-life limits utility; nausea possible. Requires careful dosing for research use.

PROTOCOL

VIP Goal: Study VPAC receptor-mediated vasodilation, immune modulation, and neuroprotection. Reconstitute with bacteriostatic water. Very short half-life requires careful timing.

DOSING TABLES

VIP Research Protocols

Route	Dose	Frequency	Duration
SC Injection	50 mcg	Twice daily (AM/PM)	8 weeks on / 8 weeks off
Intranasal (CIRS)	50 mcg per nostril	4x daily	30 days initial
IV (clinical)	25-100 mcg	Over 1-2 min (acute)	Research/clinical only