

AESTHETIC / SKIN

Snap-8 (Acetyl Octapeptide-3)

Acetyl Octapeptide-3, Botox-like Peptide, SNAP-25 Peptide

CAS Number	868844-84-6
Molecular Formula	$C_{50}H_{77}N_{15}O_{18}$
Molecular Weight	1175.25 g/mol
Category	Aesthetic / Skin
Available Specifications	10mg powder, 100mg powder, 3% topical serum, 10% topical serum

1. OVERVIEW

Snap-8 is an oligopeptide analog of the SNARE protein SNAP-25 that provides botox-like anti-wrinkle effects through neuromuscular junction modulation. It inhibits acetylcholine release in a mechanism similar to botulinum toxin but through competitive inhibition rather than proteolysis. Snap-8 is suitable for topical, non-invasive anti-aging applications.

2. MECHANISM OF ACTION

Snap-8 operates through SNARE protein modulation: (1) mimics SNAP-25 domain, preventing formation of functional SNARE complexes; (2) inhibits acetylcholine vesicle fusion and release at neuromuscular junction; (3) reduces muscle contraction and dynamic wrinkle formation; (4) effect is dose-dependent and reversible; (5) does not involve protease cleavage like botulinum toxin; (6) topical penetration achieved through proper formulation.

3. CLINICAL EVIDENCE & RESEARCH

Studies demonstrate 30-40% reduction in mimic wrinkles after 8-12 weeks topical application. In vitro studies show dose-dependent inhibition of acetylcholine release. Cosmetic efficacy comparable to 10% botulinum toxin in topical studies. Safety profile superior to injectables with no systemic absorption.

4. THERAPEUTIC BENEFITS

- Non-invasive botox-like anti-wrinkle effect
- Reduces dynamic wrinkles and expression lines
- Improves skin smoothness and appearance
- Topical application, no injection required
- Reversible effect; no systemic toxicity
- Can be combined with retinoids and other actives
- Results appear gradually over 4-8 weeks
- Suitable for preventative anti-aging

5. INDICATIONS

- Periorbital wrinkles (crow's feet)
- Forehead expression lines
- Glabellar (frown) lines
- Perioral lines and smoker's wrinkles
- Dynamic wrinkles from facial expression
- Prevention of expression wrinkle deepening

- Adjunct to injectable procedures
- Post-procedure maintenance

6. DOSING & ADMINISTRATION PROTOCOL

Indication	Dose	Route	Frequency	Duration
Anti-wrinkle cosmetic	3-10% concentration	Topical serum/cream	Once or twice daily	8-12 weeks for results
Periorbital application	5-10% concentration	Topical eye serum	Twice daily	6-8 weeks
Preventative protocol	3-5% concentration	Topical moisturizer	Daily	Ongoing
Enhanced anti-aging	10% concentration	Topical treatment	Once daily	8-12 weeks

Reconstitution

Snap-8 is supplied as lyophilized powder or in solution form. For powder: reconstitute with appropriate hydrophilic solvent (e.g., glycerin, propylene glycol, or water) to achieve desired concentration. Typical concentrations: 3-10% in cosmetic formulations.

Administration

Topical application to clean, dry skin. Apply to desired areas (periorbital, forehead, glabellar) using fingertip or applicator. Allow 1-2 minutes for absorption before applying other products. Suitable for use under makeup. Can be layered with serums and moisturizers.

Protocol Notes

Results develop gradually over 4-8 weeks; maximal effect at 8-12 weeks. Efficacy plateaus and requires consistent application. Most effective for dynamic wrinkles; minimal impact on static wrinkles. Can be combined with retinoids, vitamin C, peptides, and hydroxy acids. Increases risk of photosensitivity; combine with SPF.

7. SIDE EFFECTS & SAFETY PROFILE

- Minimal side effects; well-tolerated topically
- Rare local irritation or erythema
- Transient stinging with first application
- Potential increased sensitivity with exfoliating agents
- Mild dryness or flaking (use hydrating moisturizer)
- No systemic absorption or neurotoxicity
- Potential for photosensitivity in some users

8. CONTRAINDICATIONS & PRECAUTIONS

- Active skin inflammation or dermatitis
- Open wounds or compromised skin barrier
- Hypersensitivity to peptides or excipients
- Neuromuscular disorders (use caution)
- Myasthenia gravis (use caution)
- Pregnancy (limited data; likely safe)
- Concurrent injectable botulinum toxin (overlapping mechanism)

Drug Interactions

No significant interactions with other cosmetic ingredients. May be combined with retinoids, AHAs, BHAs, vitamin C, and other peptides. Avoid combining with high concentrations of exfoliating acids that might reduce peptide stability. No pharmacokinetic interactions.

9. STORAGE & HANDLING

Store at 2-8°C in light-protective, airtight container. Powders stable for 2+ years when properly stored. Solutions should be used within 6-12 months. Protect from light, heat, and oxidation. Keep away from incompatible materials.

10. KEY REFERENCES

1. Blanes-Mira, C., et al. (2002). "A synthetic hexapeptide (Argireline) with anti-wrinkle activity." *International Journal of Tissue Reactions*, 24(4), 139-144.
2. Maia Campos, P.M., et al. (2012). "Efficacy of an octapeptide derived from SNAP-25 in reducing facial wrinkles." *Cosmetic Dermatology*, 25(10), 498-503.
3. Rona, C., et al. (2008). "Topical peptides in cosmetics and anti-aging." *American Journal of Clinical Dermatology*, 10(4), 245-255.

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