Selank — Research Summary

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1. What It Is

Selank is a synthetic heptapeptide developed at the Institute of Molecular Genetics of the Russian Academy of Sciences, designed as an analog of the endogenous immunomodulatory peptide tuftsin (Thr-Lys-Pro-Arg), extended with the sequence Gly-Glu-Glu for improved stability. It is characterized in the research literature as anxiolytic (anti-anxiety), antiasthenic, nootropic, and immunomodulatory.

- **Regulatory status:** Selank completed Phase III clinical trials in Russia for anxiety-related indications and has been used clinically there. It has never been approved by the FDA or EMA and remains available in the US only as a research compound. The FDA has specifically noted concerns for compounded Semax and Selank around limited human safety information, immunogenicity risk, aggregation, and peptide-related impurities.

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2. Reported Effects in Research Literature

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- **Anxiolytic activity:** A comparison study (published in *Zh Nevrol Psikhiatr*) found Selank produced comparable anxiolytic efficacy to phenazepam (a potent Russian benzodiazepine) with a superior tolerability profile. Selank completed Phase III trials in Russia for anxiety and neurasthenia (a diagnosis roughly overlapping with chronic fatigue/nervous exhaustion), with findings suggesting anxiolytic, antiasthenic, and mild psychostimulant effects.
- **Mechanism:** Proposed to allosterically modulate GABA-A receptor signaling (distinct from benzodiazepine pharmacology, which may explain its reported lack of tolerance/dependence/sedation), influence serotonergic pathways, inhibit enkephalin-degrading enzymes, and increase BDNF expression (though typically less potently than Semax).
- **Immunomodulation:** As a tuftsin analog, Selank retains effects on immune function, including cytokine regulation.
- **Human evidence:** The strongest human data comes from Russian Phase III trials for anxiety-related indications — a higher evidentiary tier than most nootropic peptides, but not equivalent to Western regulatory-grade trials, and largely published in Russian-language literature not widely translated or independently replicated in Western clinical settings.

Research limitation to note: English-language scientific literature on Selank remains limited, and most mechanistic research is conducted in animal models rather than humans.

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3. Clinical & Preclinical Study References

- GABA-A allosteric modulation mechanism research. PMID: 26924987
- Enkephalin degradation inhibition mechanism research. PMID: 12432865
- BDNF expression research. PMID: 18841804
- Selank vs. phenazepam comparison study. *Zh Nevrol Psikhiatr.* PMID: 25176261
- Overview: Semax and Selank: The Cognitive Peptides Now Legal for Compounding — What the Evidence Says (Meto)

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4. Reconstitution Process

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1. **Materials needed:** lyophilized (freeze-dried) Selank powder, bacteriostatic water, alcohol swabs, syringe with needle.
2. **Bring the vial to room temperature** before reconstitution.
3. **Sanitize** the rubber stopper of both vials with an alcohol swab.
4. **Add the water slowly** down the *inside wall* of the vial, to reduce shear/foaming.
5. **Do not shake.** Gently swirl or roll between palms until fully dissolved.
6. **Inspect the solution** — should be clear and free of particulates.
7. **Label the vial** with reconstitution date and concentration.
8. **Storage:** refrigerate (2–8°C); avoid freeze-thaw cycles. Note: Selank and Semax are also commonly formulated as intranasal solutions in the research literature; if reconstituting for that context, follow supplier-specific concentration guidance since nasal-spray formulations differ from injectable reconstitution.

Reference: Bacteriostatic Water Volume by Vial Size

Vial Size	BAC Water Added	Resulting Concentration
5 mg	1 mL	5 mg/mL
5 mg	2 mL	2.5 mg/mL
5 mg	5 mL	1 mg/mL
10 mg	1 mL	10 mg/mL
10 mg	2 mL	5 mg/mL
10 mg	4 mL	2.5 mg/mL
10 mg	5 mL	2 mg/mL
10 mg	10 mL	1 mg/mL

Notes: Higher water volume = more dilute solution; lower volume = more concentrated. Always use bacteriostatic water (0.9% benzyl alcohol) for multi-draw vials; sterile water without preservative should be discarded within 24 hours.

Document created: July 16, 2026. **Revision 1:** July 29, 2026. Regulatory status (FDA compounding lists, WADA lists) is actively shifting; re-verify against current sources before any customer-facing use.
