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FOR CLINICIANS

Selank (TP-7) is a synthetic heptapeptide with the primary sequence Thr-Lys-Pro-Arg-Pro-Gly-Pro, the immunoreactive tuftsin tetrapeptide (Thr-Lys-Pro-Arg) extended at the C-terminus by Pro-Gly-Pro to confer protease resistance and CNS-accessible half-life after intranasal administration [vyunova2018, siebert2017]. The compound was developed in the 1990s at the Institute of Molecular Genetics of the Russian Academy of Sciences (Moscow) as a peptide anxiolytic and is registered in the Russian Federation as Selank Nasal Spray for generalized anxiety disorder and anxiety-asthenic conditions [zozulia2008, medvedev2015]. It has no FDA approval and no equivalent registration in the United States, European Union, or other major regulatory jurisdictions [doyno2021].

Proposed mechanisms include inhibition of enkephalin-degrading enzymes (aminopeptidase N, neutral endopeptidase) in plasma and brain, extending the half-life of endogenous opioid peptides and contributing to the anxiolytic phenotype [zozulya2001, kost2001, zolotarev2004]; modulation of GABAergic neurotransmission with altered expression of GABA-A receptor subunit and glutamic acid decarboxylase genes in vitro and in rodent brain [volkova2016, filatova2017]; effects on serotonergic and dopaminergic systems in rodent models [semenova2009, meshavkin2006]; and modulation of pro- and anti-inflammatory cytokine gene expression in spleen and CNS [kolomin2011, kolomin2014, leonidovna2021]. The molecular pharmacology has been characterized in the Vyunova et al. review of selank-receptor interactions [vyunova2018].

Selank has no FDA approval in the United States. This ingredient is part of an evolving FDA review process. Physicians may submit patient-specific prescription requests for pharmacy review. Availability is determined case by case, and availability may change after FDA review, PCAC discussion, final agency action, or state-board guidance.

🔗 Why Personalized Selank

The evidence base for Selank is concentrated in Russian-language clinical and mechanistic literature, including anxiety-related use abroad. That foreign experience has not produced an FDA-approved US product or a US prescribing standard.

Physicians may submit patient-specific prescription requests for Selank for pharmacy review. Certain preparations may be available now when clinically appropriate, lawfully prescribed, supported by patient-specific documentation, and approved by the dispensing pharmacy. Availability is determined case by case. This is not a consumer access promise; it is a clinical, sourcing, formulation, and regulatory review process. This ingredient is part of an evolving FDA review process for peptide-related bulk substances used in compounding.

A physician-submitted request is not the same as importing a foreign-labeled nasal spray or buying research peptide. Pharmacy review must decide whether the patient-specific request fits US compounding requirements and the evidence record.



⚡ Quick Facts About Selank

Category: Synthetic heptapeptide; modified tuftsin analog (Thr-Lys-Pro-Arg-Pro-Gly-Pro)

Active ingredient: Selank (TP-7), a seven-residue peptide consisting of the tuftsin sequence Thr-Lys-Pro-Arg extended at the C-terminus with Pro-Gly-Pro for protease stability

FDA-approved branded forms: None. Selank is not an FDA-approved drug substance and has no approved branded product in the United States.

Russian regulatory status: Category 2, evolving FDA review process. Valid patient-specific prescription required; supporting clinical rationale may be requested.

Evidence posture: Emerging in Russian-language clinical literature; preclinical in the broader peer-reviewed PubMed-indexed corpus. Small Russian clinical reports describe anxiolytic activity in generalized anxiety disorder and anxiety-asthenic states; no FDA-recognized phase III program and minimal independent Western validation.

FDA-approval status: Category 2, evolving FDA review process. Valid patient-specific prescription required; supporting clinical rationale may be requested.

Compounded under: Physicians may submit patient-specific prescription requests for pharmacy review. Availability is determined case by case.

WADA status: Category 2, evolving FDA review process. Valid patient-specific prescription required; supporting clinical rationale may be requested.

SPECIALS: PATIENT-SPECIFIC PRESCRIPTION ONLY

Physicians may submit patient-specific prescription requests for Selank for pharmacy review. Certain preparations may be available now when clinically appropriate, lawfully prescribed, and approved by the dispensing pharmacy. Availability is determined case by case.

- **Made to order, not off a shelf.** No batch sits in a warehouse waiting for buyers. Your prescription triggers the prep.
- **Named-patient label.** The bottle carries one patient's name. The batch records carry one prescription.
- **Dose, strength, and route chosen for the patient.** A prescriber decides what gets compounded, not a manufacturer who set the strength for a trial population.
- **Licensed pharmacist on the hook.** A real person, with a license that can be pulled, signs off on every prep. State inspectors check the facility.
- **Compounded drugs are not FDA-approved.** They should not be evaluated using branded-drug trial data alone. Availability varies by state and prescribed medication.



✓ How This Differs from a Research-Use-Only Website

A research-use-only website ships a vial from a warehouse. There is no prescription, no pharmacist, no facility inspection, and no way to recall the product if something is wrong with it. If the vial is mislabeled, contaminated, or under-potent, there is nobody whose license is at stake.

A 503A compounding pharmacy is the other thing. The doctor writes the prescription. A licensed pharmacist, whose name is on the label, prepares the medicine in a facility the state inspects. If something goes wrong, there is a person and a license on the hook, and a documented chain of custody on every lot. That accountability is what makes it safe.

📖 What is Selank?

Selank is a synthetic heptapeptide with the primary sequence Thr-Lys-Pro-Arg-Pro-Gly-Pro. The N-terminal four residues correspond to tuftsin, a tetrapeptide naturally produced by enzymatic cleavage of the immunoglobulin G heavy chain in the spleen, with documented immunomodulatory activity. The C-terminal tripeptide Pro-Gly-Pro is appended to tuftsin to slow proteolytic degradation in plasma and extend the in vivo half-life sufficient for pharmacologic activity after intranasal administration [vyunova2018, siebert2017].

Selank was developed in the 1990s at the Institute of Molecular Genetics of the Russian Academy of Sciences (Moscow), the same laboratory that developed the ACTH-derived neuropeptide Semax. The compound was registered in the Russian Federation as Selank Nasal Spray (also known by the research code TP-7) for use in generalized anxiety disorder, adjustment disorders, and related anxiety-asthenic conditions. It has no FDA approval and no equivalent regulatory registration in the United States, European Union, United Kingdom, Canada, Australia, or Japan [zozulia2008, medvedev2015, doyno2021].

Selank is not available as an FDA-approved manufactured pharmaceutical product in the United States. Material sold under the Selank name in the US peptide marketplace is not subject to FDA bulk-drug-substance review, USP General Chapter <797> sterility standards, or pharmacist verification of identity, potency, or purity. The substance is currently on FDA's Category 2 list in the bulk-drug-substance review for use in 503A compounding [fda_cat2_peptides].

⚙️ How Selank Works

Selank's proposed anxiolytic mechanism is multimodal and incompletely characterized [zozulya2001]. The most consistently reported molecular interaction is inhibition of enkephalin-degrading enzymes, including aminopeptidase N, dipeptidyl peptidase III, neutral endopeptidase, and angiotensin-converting enzyme, in human plasma and rodent brain [kost2001; zolotarev2004]. By slowing the degradation of endogenous



Met- and Leu-enkephalin, selank is hypothesized to indirectly amplify endogenous opioid tone and to produce anxiolytic effects partially reversed by naloxone in rodent studies.

GABAergic modulation has been characterized at the level of gene expression. Volkova et al. (2016) reported that selank administration affected the expression of genes involved in GABAergic neurotransmission, including GABA-A receptor subunits and glutamic acid decarboxylase, in mouse brain. Filatova et al. (2017) extended this finding in vitro in IMR-32 neuroblastoma cells, where GABA, selank, and olanzapine each altered the expression of GABAergic neurotransmission genes [volkova2016, filatova2017]. Povarov et al. (2017) reported electrophysiologic effects on spontaneous synaptic activity in rat hippocampal CA1 neurons [povarov2017].

Additional reported effects include modulation of serotonergic and dopaminergic systems [semenova2009, meshavkin2006]; potentiation of diazepam-mediated anxiolysis in rodent unpredictable chronic mild stress [kasian2017]; modulation of pro- and anti-inflammatory cytokine gene expression in spleen and brain [kolomin2011, kolomin2014, leonidovna2021]; and altered functional brain connectivity in a small EEG-based functional connectomic study [panikratova2020]. The Vyunova et al. (2018) review of selank-receptor molecular interactions integrates these strands but notes that no single canonical receptor target has been definitively established [vyunova2018].

🕒 Selank Research History

Selank originated in the 1990s at the Institute of Molecular Genetics of the Russian Academy of Sciences (Moscow) as a tuftsin-analog peptide designed for anxiolytic activity with extended in vivo stability via the C-terminal Pro-Gly-Pro extension. Initial mechanistic work in the early 2000s characterized inhibition of enkephalin-degrading enzymes in human plasma as a candidate mechanism: Zozulya et al. (2001) reported the inhibitory effect of selank on enkephalin-degrading enzymes as a possible mechanism of its anxiolytic activity; Kost et al. (2001) reported that semax and selank inhibit enkephalin-degrading enzymes from human serum; and Sokolov et al. (2002) extended the finding in mice with different emotional and stress phenotypes [zozulya2001, kost2001, sokolov2002]. Zolotarev et al. (2004) used tritium-labeled Leu-enkephalin to characterize the inhibitory effect on plasma enkephalin-degrading enzymes [zolotarev2004].

Behavioral and physiologic characterization in rodents followed. Kozlovskii et al. (2002) reported optimizing effects on active avoidance conditioning; Semenova et al. (2005) characterized seasonal effects in hibernating animals; Meshavkin et al. (2006) demonstrated naloxone-blocked attenuation of apomorphine-induced hyperdopaminergic behaviors, supporting the endogenous-opioid mechanism [kozlovskii2002, semenova2005, meshavkin2006]. Pavlov et al. (2007) reported gastric mucosal homeostasis effects, Semenova et al. (2008) characterized correction of integrative brain activity and biogenic amine levels after antenatal hypoxia, and Sarkisova et al. (2008) reported effects on depression-like behavior in WAG/Rij and Wistar rats [pavlov2007, semenova2008, sarkisova2008].



Russian-language clinical reports emerged in the late 2000s. Zozulia et al. (2008) described efficacy and mechanisms in generalized anxiety disorder and neurasthenia; Uchakina et al. (2008) reported immunomodulatory effects in patients with anxiety-asthenic disorders; Medvedev et al. (2015) reported optimization of selank treatment in anxiety disorders [zozulia2008, uchakina2008, medvedev2015]. Subsequent mechanistic and preclinical work in the 2010s and 2020s characterized GABAergic gene expression effects [volkova2016, filatova2017], cytokine and inflammatory gene expression [kolomin2011, kolomin2014, leonidovna2021], hippocampal synaptic activity [povarov2017], ethanol-induced memory protection [kolik2019], morphine withdrawal attenuation [konstantinopolsky2022], and a small functional connectomic study [panikratova2020]. The Vyunova et al. (2018) review of selank biological activity at the molecular level [vyunova2018] and the Siebert et al. (2017) review of tuftsin and its analogs [siebert2017] are the most-cited English-language summaries; the Doyno (2021) Journal of Clinical Pharmacology review surveys selank among GABA-acting agents available outside the United States [doyno2021].

📅 Selank Timeline

- 1990s** • Selank (TP-7) developed at the Institute of Molecular Genetics of the Russian Academy of Sciences (Moscow) as a tuftsin-analog peptide anxiolytic with C-terminal Pro-Gly-Pro extension for protease resistance [vyunova2018; siebert2017]
- 2001** • Zozulya et al [zozulya2001]. (Bull Exp Biol Med) report the inhibitory effect of selank on enkephalin-degrading enzymes as a candidate anxiolytic mechanism
- 2001** • Kost et al [kost2001]. (Bioorg Khim) report that semax and selank inhibit enkephalin-degrading enzymes from human serum
- 2002** • Sokolov et al [sokolov2002]. (Bull Exp Biol Med) characterize selank effects on behavior and plasma enkephalin-degrading enzyme activities in mice with different emotional and stress phenotypes
- 2002** • Kozlovskii et al [kozlovskii2002]. report optimizing action of synthetic peptide selank on active avoidance conditioning in rats
- 2004** • Zolotarev et al [zolotarev2004]. (Bioorg Khim) use tritium-labeled Leu-enkephalin to characterize selank inhibition of plasma enkephalin-degrading enzymes
- 2005** • Semenova et al [semenova2005]. (Bull Exp Biol Med) report seasonal effects of selank on behavior in hibernating animals
- 2006** • Meshavkin et al [meshavkin2006]. (Bull Exp Biol Med) report naloxone-blocked attenuation of apomorphine-induced hyperdopaminergic behavior, endogenous-opioid mechanism evidence
- 2007** • Pavlov et al [pavlov2007]. (Bull Exp Biol Med) report that selank and its metabolites maintain homeostasis in the gastric mucosa



- 2008 • Semenova et al [semenova2008]. (Neurosci Behav Physiol) report use of selank to correct integrative brain activity and biogenic amine levels after antenatal hypoxia in adult rats

- 2008 • Sarkisova et al [sarkisova2008]. report effects of selank on genetically-based and situation-provoked depression-like behavior in WAG/Rij and Wistar rats

- 2008 • Zozulia et al [zozulia2008]. (Zh Nevrol Psikhiatr Im S S Korsakova) report efficacy and proposed mechanisms of selank in the therapy of generalized anxiety disorder and neurasthenia (Russian-language clinical report)

- 2008 • Uchakina et al [uchakina2008]. report immunomodulatory effects of selank in patients with anxiety-asthenic disorders (Russian-language clinical report)

- 2009 • Semenova et al [semenova2009]. (Eksp Klin Farmakol) compare effects of selank and tuftsin on serotonin metabolism in rats pretreated with PCPA

- 2011 • Kolomin et al [kolomin2011]. (Regul Pept) report expression of inflammation-related genes in mouse spleen under tuftsin analog selank

- 2014 • Kolomin et al [kolomin2014]. (Mol Immunol) characterize temporary dynamics of inflammation-related gene expression under selank

- 2015 • Medvedev et al [medvedev2015]. (Zh Nevrol Psikhiatr Im S S Korsakova) report optimization of the treatment of anxiety disorders with selank (Russian-language clinical report)

- 2016 • Volkova et al [volkova2016]. (Front Pharmacol) report that selank administration affects expression of genes involved in GABAergic neurotransmission

- 2016 • Vasil'eva et al [vasileva2016]. (Eksp Klin Farmakol) compare pharmacological effects of selank after intranasal vs intraperitoneal administration to BALB/c and C57BL/6 mice

- 2017 • Filatova et al [filatova2017]. (Front Pharmacol) characterize effects of GABA, selank, and olanzapine on expression of GABAergic neurotransmission genes in IMR-32 neuroblastoma cells

- 2017 • Kasian et al [kasian2017]. (Behav Neurol) report that selank enhances the effect of diazepam in reducing anxiety in unpredictable chronic mild stress conditions in rats

- 2017 • Povarov et al [povarov2017]. (Bull Exp Biol Med) report effects of selank on spontaneous synaptic activity in rat hippocampal CA1 neurons

- 2017 • Siebert et al [siebert2017]. (Curr Med Chem) publish a review of tuftsin and its analogs including selank

- 2018 • Vyunova et al [vyunova2018]. (Protein Pept Lett) review the molecular aspects of heptapeptide selank biological activity



- 2019 • Kolik et al [kolik2019]. (Bull Exp Biol Med) report that selank protects against ethanol-induced memory impairment by regulating hippocampal BDNF in rats

- 2020 • Panikratova et al [panikratova2020]. (Dokl Biol Sci) report a functional connectomic study of selank and semax effects in humans

- 2021 • Leonidovna et al [leonidovna2021]. (Curr Rev Clin Exp Pharmacol) characterize the influence of selank on cytokine levels under 'social' stress conditions

- 2021 • Doyno et al [doyno2021]. (J Clin Pharmacol) publish an English-language review of sedative-hypnotic agents that impact GABA receptors, including selank among GABA-acting agents available outside the United States

- 2022 • Konstantinopolsky et al [konstantinopolsky2022]. (Bull Exp Biol Med) report that selank attenuates aversive signs of morphine withdrawal in rats

⚠ Compounded Selank (503A)

Physicians may submit patient-specific prescription requests for pharmacy review. For Selank, certain preparations may be available now when clinically appropriate, lawfully prescribed, and approved by the dispensing pharmacy. Availability is determined case by case and may depend on patient-specific documentation, ingredient status, source qualification, formulation feasibility, state requirements, and pharmacist judgment. The review starts with the evidence constraint: The evidence base for Selank is concentrated in Russian-language clinical and mechanistic literature, including anxiety-related use abroad. That foreign experience has not produced an FDA-approved US product or a US prescribing standard.

This ingredient is part of an evolving FDA review process. RonanRx is monitoring FDA's PCAC process and any subsequent agency action. This ingredient is part of an evolving FDA review process for peptide-related bulk substances used in compounding. Availability may change after FDA review, PCAC discussion, final agency action, or state-board guidance. For Selank, RonanRx ties that monitoring to the evidence limits described above and to any patient-specific documentation submitted by the prescriber.

Valid patient-specific prescription required. Supporting clinical rationale may be requested. Compounded medications are not FDA-approved. No consumer self-ordering, no office stock, no bulk dispensing. Requests for Selank are reviewed before any preparation is made or released. A physician-submitted request is not the same as importing a foreign-labeled nasal spray or buying research peptide. Pharmacy review must decide whether the patient-specific request fits US compounding requirements and the evidence record.



🔗 Selank Formulations and Routes

Form	Concentration	Description
Intranasal solution (Russian manufactured product)	0.15% Selank in aqueous solution, delivered as nasal drops or spray	Selank Nasal Spray (and nasal drops) is the form registered in the Russian Federation. The intranasal route is the studied delivery method in the Russian clinical literature and in the rodent pharmacology characterized by Vasil'eva et al. (2016) comparing intranasal and intraperitoneal administration.
Research-grade synthetic heptapeptide	—	Selank is available from peptide chemistry suppliers as a synthetic heptapeptide for research use only. It is not an FDA-approved drug substance, has no US-manufactured pharmaceutical product, and is on FDA's Category 2 list for 503A compounding.

🛡️ Selank Safety

No FDA-reviewed human safety data are indexed for Selank. The Russian-language clinical literature describes Selank Nasal Spray as generally well tolerated in small open-label and single-center studies of generalized anxiety disorder, anxiety-asthenic states, and neurasthenia, with most reports characterizing adverse effects as mild and transient¹¹¹²¹⁶. Independent multicenter randomized placebo-controlled safety data are not available in PubMed-indexed Western literature. Absence of acute toxicity in small Russian cohorts does not establish a safety profile equivalent to that supported by an FDA-recognized phase III program.

Because Selank is on FDA's Category 2 bulk-substance list for 503A compounding³⁰, FDA has identified either safety concerns or an information gap that must be evaluated¹⁵. Clinicians considering Selank-containing preparations from non-503A sources should be aware that such products are not subject to FDA bulk-substance review, USP <797> sterility standards, or pharmacist verification of identity and potency. Availability through RonanRx is determined case by case after pharmacy review.

Preclinical rodent studies report short-term tolerability across a range of model systems, anxiolytic-like behavior, ethanol- and morphine-related models, hippocampal electrophysiology, hepatic morphology under chronic foot-shock stress, gastric mucosal homeostasis, and immune gene expression²⁵⁸¹⁴. Longer-term toxicology, reproductive toxicity, carcinogenicity, and detailed human pharmacokinetic data are not available in the indexed literature. Selank is prohibited at all times by the World Anti-Doping Agency under So (non-approved substances)^{28 2429}.



Contraindications

Honest gap. No FDA-recognized human contraindications for Selank are indexed in the English-language literature. Selank is not an FDA-approved drug substance and has no US prescribing-information label. FDA Category 2 bulk-substance status precludes 503A compounding pending reclassification. Russian product labeling for Selank Nasal Spray exists but is not FDA-reviewed.

Searched: PubMed, FDA bulk-substance review documents on 2026-05-11 · terms *selank AND (contraindication OR contraindicated OR hypersensitivity)*.

Drug interactions

Honest gap. No FDA-recognized human drug-interaction studies for Selank are indexed at the time of review. Preclinical rodent work has described pharmacodynamic interactions consistent with the proposed mechanism, including potentiation of diazepam-mediated anxiolysis in unpredictable chronic mild stress [kasian2017] and naloxone-reversible attenuation of apomorphine-induced hyperdopaminergic behaviors [meshavkin2006]. These are mechanistic findings in rodents and do not constitute validated human drug-interaction characterization.

Searched: PubMed, DailyMed on 2026-05-11 · terms *selank AND (drug interaction OR pharmacokinetic interaction)*.

Adverse events

Honest gap. No FDA-recognized human adverse-event series for Selank are indexed in English-language PubMed. Russian-language clinical reports describe Selank Nasal Spray as generally well tolerated in small cohorts. Preclinical rodent studies report short-term tolerability without consistent organ-toxicity signals at experimental doses. Detailed human adverse-event characterization equivalent to an FDA-recognized phase III safety database is not available.

Searched: PubMed, FDA Adverse Event Reporting System (FAERS) on 2026-05-11 · terms *selank AND (adverse event OR adverse effect OR side effect)*.

↗ Monitoring Selank Therapy

No RonanRx-specific monitoring protocol has been established for Selank. If a patient-specific prescription is submitted, supporting clinical rationale may be requested, and monitoring expectations would be reviewed case by case against the published evidence, route, sterile or nonsterile status, concomitant therapies, and patient risk factors.



🧑 Selank in Special Populations

📄 Selank Evidence Quality

The Selank evidence base is dominated by Russian-language primary literature with minimal independent Western validation [povarov2017; kolik2019; konstantinopolsky2022]. PubMed-indexed studies include: foundational mechanistic work on enkephalin-degrading enzymes; behavioral and electrophysiologic characterization in rodents; GABAergic gene expression studies in vitro and in mouse brain [volkova2016, filatova2017]; cytokine and inflammation gene expression studies [kolomin2011, kolomin2014, leonidovna2021]; route comparison (intranasal vs intraperitoneal) in mice [vasileva2016]; hepatic morphology under chronic stress [fomenko2019]; gastric mucosal homeostasis [pavlov2007]; serotonergic and dopaminergic mechanism work [semenova2009, meshavkin2006]; a small functional connectomic study in humans [pankratova2020]; and small Russian-language clinical reports of efficacy in generalized anxiety disorder, neurasthenia, and anxiety-asthenic conditions [zozulya2008, uchakina2008, medvedev2015]. Class reviews summarize the molecular pharmacology [vyunova2018, siebert2017] and place Selank among GABA-acting agents available outside the United States [doyno2021].

No FDA-recognized randomized multicenter placebo-controlled phase III efficacy program for Selank exists [zozulya2001; kost2001; sokolov2002]. No FDA-approved branded product exists. Independent Western replication of the Russian clinical findings is minimal. Selank is currently on FDA's Category 2 bulk-substance list for 503A compounding [fda_cat2_peptides] [sarkisova2008; kasian2017]. The mechanistic and preclinical evidence is internally consistent and biologically plausible, and the Russian clinical reports describe a generally favorable safety and tolerability profile in small cohorts, but the corpus does not meet the standard of evidence that supports FDA-recognized clinical claims [zolotarev2004]. Any clinical claim about Selank in US patients extrapolates from foreign-language and preclinical-grade evidence and should be framed accordingly [kozlovskii2002; semenova2005; semenova2008].

📄 Major Selank Clinical Studies

Study	Design	Participants	Duration	Finding
Zozulya et al. (2001, Bull Exp Biol Med), Enkephalin-degrading enzyme inhibition	In vitro biochemical characterization of selank inhibition of enkephalin-degrading enzymes in human plasma	—	—	Selank inhibits human plasma enkephalin-degrading enzymes; proposed as a candidate mechanism for the anxiolytic phenotype via prolongation of



Study	Design	Participants	Duration	Finding
				endogenous enkephalin half-life [zozulya2001]
Kost et al. (2001, Bioorg Khim), Semax and selank inhibit enkephalin-degrading enzymes	In vitro biochemical characterization in human serum	—	—	Both semax and selank inhibit enkephalin-degrading enzymes in human serum, consistent with a shared mechanistic feature of Russian-developed peptide neuromodulators [kost2001]
Sokolov et al. (2002, Bull Exp Biol Med), Behavior and plasma enkephalin-degrading enzymes	Behavioral and biochemical study in mice with different emotional and stress reactivity phenotypes	—	—	Selank alters behavior and plasma enkephalin-degrading enzyme activity differently across mouse strains, supporting strain-dependent expression of the proposed mechanism [sokolov2002]
Zozulia et al. (2008, Zh Nevrol Psikhiatr Im S S Korsakova), GAD and neurasthenia clinical report	Russian-language clinical report describing efficacy and proposed mechanisms of action of selank in the therapy of generalized anxiety disorder and neurasthenia	—	—	Open-label and single-center observations of anxiolytic activity in GAD and neurasthenia with a generally favorable tolerability profile; not an FDA-recognized phase III program [zozulia2008]
Uchakina et al. (2008), Immunomodulatory effects in anxiety-asthenic disorders	Russian-language clinical report in patients with anxiety-asthenic disorders	—	—	Selank exhibited immunomodulatory effects (cytokine profile changes) alongside reported anxiolytic activity in the studied cohort [uchakina2008]
Medvedev et al. (2015, Zh Nevrol Psikhiatr Im S S Korsakova), Optimization of selank in anxiety disorders	Russian-language clinical report on optimization of selank treatment in anxiety disorders	—	—	Open-label clinical observations of dosing strategy and response in anxiety disorders; the study describes treatment optimization in a Russian clinical context [medvedev2015]
Volkova et al. (2016, Front Pharmacol),	Gene-expression study of selank effects on	—	—	Selank administration altered expression of GABA-A receptor



Study	Design	Participants	Duration	Finding
GABAergic gene expression	transcripts involved in GABAergic neurotransmission			subunit and glutamic acid decarboxylase genes; mechanistic link to GABAergic anxiolysis [volkova2016]
Filatova et al. (2017, Front Pharmacol), GABA, selank, olanzapine in IMR-32 cells	In vitro gene-expression study in IMR-32 neuroblastoma cells	—	—	GABA, selank, and olanzapine each altered the expression of genes involved in GABAergic neurotransmission, supporting a transcriptional component of selank's GABAergic effect [filatova2017]
Kasian et al. (2017, Behav Neurol), Selank potentiates diazepam in UCMS	Rodent unpredictable chronic mild stress (UCMS) model with co-administration of selank and diazepam	—	—	Selank enhanced the anxiolytic effect of diazepam in rats subjected to unpredictable chronic mild stress, supporting a GABAergic pharmacodynamic interaction [kasian2017]
Vyunova et al. (2018, Protein Pept Lett), Molecular biology of selank activity	Narrative review of the molecular aspects of heptapeptide selank biological activity	—	—	Integrates the molecular pharmacology evidence, enkephalin-degrading enzyme inhibition, GABAergic transcriptional effects, serotonergic/dopaminergic modulation, cytokine modulation, into a coherent class summary; no single canonical receptor target is established [vyunova2018]
Doyno et al. (2021, J Clin Pharmacol), GABA-acting agents review	Narrative review of sedative-hypnotic agents that impact GABA receptors, including selank among GABA-acting agents available outside the United States	—	—	Surveys the English-language pharmacology of selank, characterizes the Russian regulatory context, and notes WADA prohibition under So (non-approved substances); identifies selank as not FDA-approved and not subject to FDA evidence review [doyno2021]
Siebert et al. (2017, Curr Med Chem),	Narrative review of tuftsin and its analog	—	—	Places selank in the tuftsin-analog class with the C-terminal



Study	Design	Participants	Duration	Finding
Tufts and analogs review	peptides including selank			Pro-Gly-Pro extension as the structural rationale for in vivo stability; summarizes immunomodulatory and CNS activity [siebert2017]
Kolik et al. (2019, Bull Exp Biol Med), Ethanol memory protection	Rodent ethanol-induced memory impairment model with selank intervention	—	—	Selank protected against ethanol-induced memory impairment with concurrent regulation of hippocampal BDNF content, supporting a neuroprotective component of the mechanism [kolik2019]
Konstantinopolsky et al. (2022, Bull Exp Biol Med), Morphine withdrawal	Rodent model of morphine withdrawal with selank intervention	—	—	Selank attenuated aversive signs of morphine withdrawal in rats, consistent with the endogenous-opioid component of the proposed mechanism [konstantinopolsky2022]
Panikratova et al. (2020, Dokl Biol Sci), Functional connectomic study	Small functional connectomic approach to studying selank and semax effects in humans	—	—	Reported alterations in functional brain connectivity patterns associated with selank administration; small exploratory study, not an efficacy trial [panikratova2020]
Vasil'eva et al. (2016, Eksp Klin Farmakol), Intranasal vs intraperitoneal route	Pharmacological comparison of selank effects after intranasal vs intraperitoneal administration in BALB/c and C57BL/6 mice	—	—	Both routes produced biological activity with route- and strain-dependent differences; supports intranasal delivery as a viable administration route for CNS effects [vasileva2016]

⚠ Selank Pharmacokinetics & Pharmacodynamics

Pharmacokinetics

No FDA-recognized human pharmacokinetic studies of Selank are indexed. The C-terminal Pro-Gly-Pro extension was incorporated specifically to slow proteolytic degradation in plasma relative to the parent



tuftsin tetrapeptide, and rodent route-comparison work has characterized intranasal vs intraperitoneal administration with respect to biological activity rather than detailed PK parameters [vasileva2016, vyunova2018]. Selank is reported to cross into the central nervous system after intranasal administration, with rodent studies and a small human functional connectomic study consistent with CNS pharmacodynamic effects [panikratova2020].

Validated human PK parameters, including Cmax, Tmax, bioavailability, terminal half-life, and volume of distribution, are not available in PubMed-indexed Western literature at the time of review.

Pharmacodynamics

Reported pharmacodynamic endpoints in preclinical studies include anxiolytic-like behavior in rodent models (elevated plus maze, open field, social interaction, UCMS-induced anxiety) [kasian2017]; ethanol-induced memory impairment with hippocampal BDNF as a molecular readout [kolik2019]; aversive signs of morphine withdrawal [konstantinopolsky2022]; expression of GABAergic-neurotransmission genes in vitro and in vivo [volkova2016, filatova2017]; expression of pro- and anti-inflammatory cytokines in spleen and brain [kolomin2011, kolomin2014, leonidovna2021]; serotonergic and dopaminergic neurochemistry [semenova2009, meshavkin2006]; and electrophysiology of hippocampal CA1 synaptic activity [povarov2017]. In small Russian clinical reports the principal endpoint is clinician-rated anxiety severity in generalized anxiety disorder and anxiety-asthenic conditions [zozulia2008, medvedev2015]. No validated US clinical pharmacodynamic biomarker for Selank exists.

☒ Selank Compounding & Operations

503A compounding

Physicians may submit patient-specific prescription requests for pharmacy review. For Selank, certain preparations may be available now when clinically appropriate, lawfully prescribed, and approved by the dispensing pharmacy. Availability is determined case by case and may depend on patient-specific documentation, ingredient status, source qualification, formulation feasibility, state requirements, and pharmacist judgment. The review starts with the evidence constraint: The evidence base for Selank is concentrated in Russian-language clinical and mechanistic literature, including anxiety-related use abroad. That foreign experience has not produced an FDA-approved US product or a US prescribing standard.

This ingredient is part of an evolving FDA review process. RonanRx is monitoring FDA's PCAC process and any subsequent agency action. This ingredient is part of an evolving FDA review process for peptide-related bulk substances used in compounding. Availability may change after FDA review, PCAC discussion, final agency action, or state-board guidance. For Selank, RonanRx ties that monitoring to the evidence limits described above and to any patient-specific documentation submitted by the prescriber.

Valid patient-specific prescription required. Supporting clinical rationale may be requested. Compounded medications are not FDA-approved. No consumer self-ordering, no office stock, no bulk dispensing.



Requests for Selank are reviewed before any preparation is made or released. A physician-submitted request is not the same as importing a foreign-labeled nasal spray or buying research peptide. Pharmacy review must decide whether the patient-specific request fits US compounding requirements and the evidence record.

Pharmacist review

For Selank, the pharmacist review starts before any preparation is made. Valid patient-specific prescription required. Supporting clinical rationale may be requested. The pharmacist reviews ingredient status, sourcing, formulation feasibility, state requirements, patient-specific documentation, and whether dispensing is appropriate case by case.

Quality and traceability

If a Selank preparation is approved after pharmacy review, RonanRx applies source documentation, formulation records, lot traceability, release checks, and storage controls appropriate to the actual dosage form. Research-use vial storage practices do not substitute for pharmacy-assigned storage, beyond-use dating, sterility controls when applicable, or recallable batch records. The patient-specific framework and quality controls are documented in the cited compounding references [fda503a; usp_795; usp_797].

Cold chain

If a Selank preparation is approved after pharmacy review, RonanRx applies source documentation, formulation records, lot traceability, release checks, and storage controls appropriate to the actual dosage form. Research-use vial storage practices do not substitute for pharmacy-assigned storage, beyond-use dating, sterility controls when applicable, or recallable batch records.

🗨 Frequently Asked Questions About Selank

Can physicians request Selank through RonanRx?

Physicians may submit patient-specific prescription requests for pharmacy review. Certain preparations may be available now when clinically appropriate, lawfully prescribed, and approved by the dispensing pharmacy. Availability is determined case by case. Compounded medications are not FDA-approved, and no consumer self-ordering, office stock, or bulk dispensing is offered.

What is Selank?

Selank (TP-7) is a synthetic heptapeptide with the sequence Thr-Lys-Pro-Arg-Pro-Gly-Pro [vyunova2018]. The N-terminal four residues correspond to tuftsin, a natural immunomodulatory tetrapeptide, and the C-terminal Pro-Gly-Pro extension confers protease resistance [siebert2017]. It was developed in the 1990s at the Institute of Molecular Genetics of the Russian Academy of Sciences (Moscow) as an anxiolytic peptide.



Is Selank approved anywhere?

Selank is registered in the Russian Federation as Selank Nasal Spray for generalized anxiety disorder and adjustment-related anxiety [zozulia2008; medvedev2015; doyno2021]. It is not approved by the FDA in the United States and has no equivalent registration in the European Union, United Kingdom, Canada, Australia, or Japan.

What does the published evidence look like?

The primary clinical literature is almost entirely Russian-language: small open-label or single-center reports in generalized anxiety disorder, neurasthenia, and anxiety-asthenic conditions [zozulia2008; uchakina2008; medvedev2015]. The preclinical literature is more substantial and includes mechanistic work on enkephalin-degrading enzymes, GABAergic gene expression, serotonergic and dopaminergic modulation, and cytokine and inflammation gene expression. The English-language review by Doyno (2021) is the most-cited Western summary [doyno2021]. There is no FDA-recognized phase III program [vyunova2018].

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What about athletes and WADA?

Selank is prohibited at all times by the World Anti-Doping Agency under category So (non-approved substances). Athletes subject to the WADA Code must not use Selank in or out of competition [doyno2021].

Could Selank move from FDA Category 2 to Category 1?

Possibly, if the agency receives sufficient evidence to evaluate safety and clinical utility in a US regulatory framework. The Category 2 designation reflects FDA's current assessment of the evidence base and is not a permanent finding. RonanRx will track future bulk-substance review revisions and will reconsider compounding only if and when Selank is moved to Category 1 [fda_cat2_peptides].

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How to Access Selank

Compounded Selank is dispensed under 503A on a patient-specific prescription. Depending on your role, the next step looks different.



FOR PRESCRIBING CLINICIANS

Offer this medication

A pharmacist will follow up within two business days. We'll cover state availability, supported formulations, and what integration looks like for your clinic.



ronanrx.com/request-partnership-call



PATIENT WITH A DOCTOR

Receive your prescription

If your doctor has prescribed Selank, sign up so we can prepare and ship your medication. The signup wizard collects intake and connects you to the prescribing workflow.



ronanrx.com/patients



PATIENT WITHOUT A DOCTOR

Find a partner clinic

RonanRx prescribes through partner clinics — we don't initiate prescriptions on this site. Read how the referral process works and how to find a partner clinic in your state.



ronanrx.com/find-clinic



Other compounds RonanRx makes

This monograph is one of many in the RonanRx formulary. Every compound below is prepared under 503A on a patient-specific prescription. Browse the full catalog at ronanrx.com/medications and ronanrx.com/peptides, or scan the codes at right for each index.



Medications



Peptides

MEDICATIONS (40)

Alpha-Lipoic Acid (ALA) – Antioxidant & mitochondrial
 Coenzyme Q10 (CoQ10) – Antioxidant & mitochondrial
 Glutathione – Antioxidant & mitochondrial
 NAD+ / NMN – Antioxidant & mitochondrial
 Compounded Topical Anesthetics (BLT, LET) – Dermatology
 Topical Minoxidil – Dermatology
 Topical Tretinoin – Dermatology
 Compounded Magnesium – Energy & nutritional
 Cyanocobalamin – Energy & nutritional
 High-Dose Vitamin D – Energy & nutritional
 Hydroxocobalamin – Energy & nutritional
 Iron (Compounded) – Energy & nutritional
 L-Carnitine – Energy & nutritional
 Methylcobalamin (B12) – Energy & nutritional
 Methylfolate – Energy & nutritional
 Anastrozole – Hormone optimization
 Clomiphene & Enclomiphene – Hormone optimization
 DHEA – Hormone optimization
 Estradiol – Hormone optimization
 Estriol – Hormone optimization

Human Chorionic Gonadotropin (HCG) – Hormone optimization
 Pregnenolone – Hormone optimization
 Progesterone – Hormone optimization
 Testosterone – Hormone optimization
 Compounded Metformin – Metabolic & weight
 Compounded Semaglutide – Metabolic & weight
 Compounded Tirzepatide – Metabolic & weight
 Lipotropic Injection (MIC, MICC) – Metabolic & weight
 Low-Dose Naltrexone (LDN) – Metabolic & weight
 Naltrexone-Bupropion Combination – Metabolic & weight
 Topiramate – Metabolic & weight
 Bremelanotide / PT-141 – Sexual health
 Compounded Sildenafil – Sexual health
 Compounded Tadalafil – Sexual health
 Trimix Injection – Sexual health
 Compounded Gabapentin – Sleep & recovery
 Compounded Melatonin – Sleep & recovery
 Compounded T3 (Liothyronine) – Thyroid
 Compounded T3/T4 Combinations – Thyroid
 Compounded T4 (Levothyroxine) – Thyroid



PEPTIDES (21)

Sermorelin — Available now

Tesamorelin — Available now

AOD-9604 — Growth-hormone axis (under FDA review)

CJC-1295 — Growth-hormone axis (under FDA review)

GHRP-2 / GHRP-6 — Growth-hormone axis (under FDA review)

Hexarelin — Growth-hormone axis (under FDA review)

Ipamorelin — Growth-hormone axis (under FDA review)

MK-677 / Ibutamoren — Growth-hormone axis (under FDA review)

5-Amino 1MQ — Metabolic & longevity (under FDA review)

Epitalon / Epithalon — Metabolic & longevity (under FDA review)

MOTS-C — Metabolic & longevity (under FDA review)

Thymosin Alpha-1 / Thymalin — Metabolic & longevity (under FDA review)

DSIP, Delta Sleep-Inducing Peptide — Neuro & cognitive (under FDA review)

Selank — Neuro & cognitive (under FDA review)

Semax — Neuro & cognitive (under FDA review)

Vasoactive Intestinal Peptide (VIP) — Neuro & cognitive (under FDA review)

BPC-157 — Tissue repair (under FDA review)

KPV — Tissue repair (under FDA review)

LL-37 — Tissue repair (under FDA review)

Pentadeca Arginate (PDA) — Tissue repair (under FDA review)

TB-500 / Thymosin Beta-4 — Tissue repair (under FDA review)

