LIVEWELL™

PATH TO PEPTIDES

PEPTIDES FOR SLEEP & STRESS:

WHAT THE RESEARCH SHOWS

An Educational Overview of Neurological Peptide Research

FOR RESEARCH AND EDUCATIONAL PURPOSES ONLY

INTRODUCTION

Sleep disorders affect approximately 50-70 million Americans, and chronic stress is reported by 77% of adults as affecting their physical health. While pharmaceutical treatments exist, researchers are investigating whether certain peptides — including DSIP, Selank, and Semax — might offer new approaches. These compounds are generating significant search interest as people look for alternatives to traditional sleep and anxiety medications.1,2

This guide examines what the research shows about each of these peptides, what we know, what we do not know, and their current regulatory status.

DSIP (DELTA SLEEP-INDUCING PEPTIDE)

Delta Sleep-Inducing Peptide is a 9-amino-acid neuropeptide first discovered in 1977 by Swiss researchers who isolated it from the blood of sleeping rabbits. It was named for its ability to promote delta-wave sleep — the deepest, most restorative stage of the sleep cycle.3

Research published in the European Journal of Pharmacology shows that DSIP modulates several pathways related to sleep, including GABA signaling, serotonin metabolism, and cortisol regulation. In animal studies, DSIP increased slow-wave sleep duration without the sedation or dependency seen with benzodiazepines. Small human studies from the 1980s and 1990s showed improvements in sleep onset and sleep quality in insomnia patients, though these studies had significant methodological limitations.4,5

Important Context: DSIP has an extremely short half-life — just 7-8 minutes in the bloodstream. This makes it challenging to develop as a therapeutic. Most modern research focuses on DSIP analogs (modified versions) with improved stability rather than the native peptide itself.

SELANK

Selank is a synthetic peptide developed at the Institute of Molecular Genetics in Russia. It is a modified version of the naturally occurring immunopeptide tuftsin, with an added Pro-Gly-Pro sequence for stability. Selank was approved as a prescription anxiolytic (anti-anxiety medication) in Russia in 2009, though it has not received approval in the United States or Europe.6

Research suggests Selank modulates the balance of brain-derived neurotrophic factor (BDNF), serotonin metabolism, and the enkephalin system. A study in the Bulletin of Experimental Biology and Medicine found that Selank produced anxiolytic effects comparable to benzodiazepines in animal models but without sedation, memory impairment, or withdrawal symptoms. It was removed from FDA Category 2 in September 2024 and is now under PCAC review.7,8

SEMAX

Semax is a synthetic 7-amino-acid peptide based on the fragment ACTH(4-7) — a piece of adrenocorticotropic hormone. Like Selank, it was developed in Russia and approved there as a nootropic (cognitive enhancer) and for the treatment of stroke and cognitive disorders. It is administered as a nasal spray.9

Studies published in Neuroscience and Behavioral Physiology indicate that Semax increases BDNF expression in the brain, which supports neuroplasticity — the brain's ability to form new connections. Research also shows effects on dopamine and serotonin systems. In stress models, Semax reduced cortisol levels and improved performance under cognitive load. However, most published research comes from Russian-language journals with limited peer review by Western standards.10,11

REGULATORY STATUS

Peptide	FDA Status	Approved Elsewhere?
DSIP	Not approved; not on FDA bulks list	No
Selank	Removed from Cat. 2 (Sept 2024); under PCAC review	Russia (Rx, 2009)
Semax	Not approved; not on FDA bulks list	Russia/Ukraine (Rx)

CONCLUSION

Neurological peptides like DSIP, Selank, and Semax represent intriguing research directions for sleep and stress management. Each has preclinical and limited clinical data suggesting effects on relevant brain pathways. However, the evidence base in Western clinical research remains thin, regulatory approval outside of Russia does not exist, and quality control concerns apply to any peptide obtained outside of regulated pharmaceutical channels. These compounds highlight both the promise and the challenge of translating peptide neuroscience into clinical practice.

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This document is intended solely for educational purposes to increase awareness of neurological peptide research related to sleep and stress. It does not constitute medical advice and should not be used to make healthcare decisions.
All healthcare decisions should be made in consultation with qualified medical professionals. This publication is part of an ongoing educational series designed to promote scientific literacy and awareness of developments in peptide research.

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