

RESEARCH MONOGRAPH . COMPOUND PROFILE

DSIP (Delta Sleep Inducing Peptide)

An endogenous nonapeptide isolated from rabbit cerebral venous blood with sleep-promoting and stress-modulating activity.

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AUTHOR	Kodiac bioLabs Research
COMPOUND CLASS	Nonapeptide neuropeptide

ABSTRACT

DSIP (Trp-Ala-Gly-Gly-Asp-Ala-Ser-Gly-Glu; CAS 62568-57-4; molecular weight 848.81) is a nonapeptide isolated in 1977 by the Schoenenberger-Monnier group from rabbit cerebral venous blood collected during electrically induced slow-wave sleep. The compound is endogenously present in mammalian brain and plasma, with proposed roles in sleep regulation, stress response, and circadian rhythm modulation. Despite the name, the sleep-promoting effect is modest and variable across studies.

Mechanism is incompletely characterized; binding sites and downstream signaling have not been definitively established. The compound has been studied in alcohol withdrawal, opioid withdrawal, and chronic pain. Administered subcutaneously or intranasally; oral bioavailability is poor. Research-grade doses are typically 100 to 500 micrograms per administration.

1. Compound Identification

DSIP (Delta Sleep Inducing Peptide) is described as nonapeptide neuropeptide. An endogenous nonapeptide isolated from rabbit cerebral venous blood with sleep-promoting and stress-modulating activity.

1.1 Class summary

Nonapeptide neuropeptide

1.2 Subtitle

An endogenous nonapeptide isolated from rabbit cerebral venous blood with sleep-promoting and stress-modulating activity.

2. Abstract

DSIP (Trp-Ala-Gly-Gly-Asp-Ala-Ser-Gly-Glu; CAS 62568-57-4; molecular weight 848.81) is a nonapeptide isolated in 1977 by the Schoenenberger-Monnier group from rabbit cerebral venous blood collected during electrically induced slow-wave sleep. The compound is endogenously present in mammalian brain and plasma, with proposed roles in sleep regulation, stress response, and circadian rhythm modulation. Despite the name, the sleep-promoting effect is modest and variable across studies. Mechanism is incompletely characterized; binding sites and downstream signaling have not been definitively established. The compound has been studied in alcohol withdrawal, opioid withdrawal, and chronic pain. Administered subcutaneously or intranasally; oral bioavailability is poor. Research-grade doses are typically 100 to 500 micrograms per administration.

3. Mechanism of Action

Incompletely characterized; modulates sleep-wake cycles and stress response. No identified high-affinity receptor.

The mechanistic profile described above represents the consensus position from peer-reviewed literature where available; for compounds with sparse formal characterization, this section reflects vendor-grade reports and structurally-related class pharmacology and should be interpreted with appropriate caution.

4. Pharmacokinetics and Routes of Administration

Pharmacokinetic data are summarized within the abstract for compounds with formal Phase 1 records. Compounds without published human pharmacokinetic studies are noted as such; investigators should treat the absence of data as a research limitation.

5. Reported Research Dose Ranges

100 to 500 micrograms SC or intranasal per administration.

Doses are scaled from clinical use where the compound is approved as a medicine, from Phase 2/3 trials where development advanced, or from rodent dose-response data scaled by allometric assumptions where the compound has no human clinical record. Investigators should treat dose ranges from research-chemical-grade vendors as starting points for their own pharmacokinetic and tolerability characterization rather than validated dosing recommendations.

6. Sourcing and Quality Verification

Investigators should obtain analytical confirmation of identity (mass spectrometry; for peptides, additionally amino acid analysis or N-terminal sequencing) and purity (HPLC area-percent, ideally greater than 95 percent) on every lot. Vendor certificates of analysis vary in quality; third-party analytical confirmation through independent laboratories (e.g., Janoshik Analytical, Anabolic Lab) is the gold standard for research-grade peptides and small molecules.

For compounds with established pharmaceutical-grade marketing in any jurisdiction, sourcing from the marketed product (where legal and accessible) provides the highest quality assurance.

7. Reconstitution and Handling

Peptides should be reconstituted in bacteriostatic water or sterile water for injection in the volume appropriate to the desired concentration; lyophilized peptides should be allowed to come to room temperature before reconstitution to minimize precipitation. Reconstituted peptides should be stored refrigerated and used within the timeframe specified by the manufacturer (typically 14 to 30 days for bacteriostatic water reconstitutions, shorter for sterile water).

Small molecules: storage conditions vary by compound; consult the certificate of analysis for the specific product. Most are stable at room temperature in dry, dark conditions; oxidation-sensitive compounds (e.g., catecholamine precursors) require cool storage and protection from light.

8. Stack Interaction Considerations

Investigators combining this compound with other research substances should consider receptor-level interactions (additive effects at shared targets), enzyme-level interactions (CYP-mediated drug-drug interactions where applicable), and pharmacodynamic interactions (additive sedation, additive serotonergic activity, additive hemodynamic effects).

The stack interaction section in published monographs of well-characterized compounds is necessarily incomplete for any specific combination; investigators should treat novel combinations with elevated caution and titrate gradually.

9. References

1. Schoenenberger GA, Monnier M. Characterization of a delta-EEG-sleep-inducing peptide. PNAS 1977.

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