

RESEARCH MONOGRAPH . COMPOUND PROFILE

Vincamine

An indole alkaloid from Vinca minor; the parent compound of vinpocetine, used as a cerebrovascular agent in Europe.

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COMPOUND CLASS	Periwinkle alkaloid / cerebrovascular agent

ABSTRACT

Vincamine ((3- α ,14- β ,16- α)-14,15-dihydro-14-hydroxyeburnamenine-14-carboxylic acid methyl ester; CAS 1617-90-9; molecular formula C₂₁H₂₆N₂O₃; molecular weight 354.45) is an indole alkaloid isolated from *Vinca minor* (lesser periwinkle). The compound is the natural precursor of vinpocetine, sharing the eburnane scaffold but with reduced lipophilicity and shorter duration of action. Mechanism: cerebral vasodilation, modest PDE inhibition, antioxidant activity. Approved in several European countries (notably France as Pervincamine and Italy) for cerebrovascular insufficiency, mild dementia, and age-related cognitive decline. Plasma half-life is approximately 1 hour; oral bioavailability is moderate. Used as a cerebrovascular agent in academic research and as the historical reference compound for the eburnane class.

1. 1. Compound Identification

Vincamine is described as periwinkle alkaloid / cerebrovascular agent. An indole alkaloid from *Vinca minor*; the parent compound of vinpocetine, used as a cerebrovascular agent in Europe.

1.1. 1.1 Class summary

Periwinkle alkaloid / cerebrovascular agent

1.2. 1.2 Subtitle

An indole alkaloid from *Vinca minor*; the parent compound of vinpocetine, used as a cerebrovascular agent in Europe.

2. 2. Abstract

Vincamine ((3- α ,14- β ,16- α)-14,15-dihydro-14-hydroxyeburnamenine-14-carboxylic acid methyl ester; CAS 1617-90-9; molecular formula C₂₁H₂₆N₂O₃; molecular weight 354.45) is an indole alkaloid isolated from *Vinca minor* (lesser periwinkle). The compound is the natural precursor of vinpocetine, sharing the eburnane scaffold but with reduced lipophilicity and shorter duration of action. Mechanism: cerebral vasodilation, modest PDE inhibition, antioxidant activity. Approved in several European countries (notably France as Pervincamine and Italy) for cerebrovascular insufficiency, mild dementia, and age-related cognitive decline. Plasma half-life is approximately 1 hour; oral bioavailability is moderate. Used as a cerebrovascular agent in academic research and as the historical reference compound for the eburnane class.

3. Mechanism of Action

Indole alkaloid cerebral vasodilator; modest PDE inhibition. Parent natural compound of vinpocetine.

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. 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. 5. Reported Research Dose Ranges

Clinical 30 to 60 mg per oral administration daily, in divided doses.

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. 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. 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. 9. References

1. Maillard MC, et al. Pharmacology of vincamine. CNS Drug Rev 1997.
2. Patyar S, et al. Role of vinpocetine in cerebrovascular diseases (vincamine context). Pharmacol Rep 2011.
3. Cook P, James I. Cerebral vasodilators. N Engl J Med 1981.

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