

RESEARCH MONOGRAPH . COMPOUND PROFILE

Reboxetine

A selective NRI marketed in Europe as Edronax for depression but rejected by the FDA for inadequate efficacy.

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COMPOUND CLASS	Selective norepinephrine reuptake inhibitor

ABSTRACT

Reboxetine (Edronax; CAS 71620-89-8; molecular formula $C_{19}H_{23}NO_3$; molecular weight 313.39) is a selective norepinephrine reuptake inhibitor approved in Europe (1997) for major depressive disorder. The FDA rejected the compound's NDA for inadequate efficacy demonstration. The compound is marketed as the racemate; the (S,S)-enantiomer carries the majority of NET inhibition activity. Pharmacokinetics: plasma half-life 13 hours. Doses are 8 to 12 mg per day in two divided administrations. The compound is sold as a research chemical in jurisdictions where it is not specifically scheduled.

1. Compound Identification

Reboxetine is described as selective norepinephrine reuptake inhibitor. A selective NRI marketed in Europe as Edronax for depression but rejected by the FDA for inadequate efficacy.

1.1 Class summary

Selective norepinephrine reuptake inhibitor

1.2 Subtitle

A selective NRI marketed in Europe as Edronax for depression but rejected by the FDA for inadequate efficacy.

2. Abstract

Reboxetine (Edronax; CAS 71620-89-8; molecular formula C₁₉H₂₃NO₃; molecular weight 313.39) is a selective norepinephrine reuptake inhibitor approved in Europe (1997) for major depressive disorder. The FDA rejected the compound's NDA for inadequate efficacy demonstration. The compound is marketed as the racemate; the (S,S)-enantiomer carries the majority of NET inhibition activity. Pharmacokinetics: plasma half-life 13 hours. Doses are 8 to 12 mg per day in two divided administrations. The compound is sold as a research chemical in jurisdictions where it is not specifically scheduled.

3. Mechanism of Action

Selective norepinephrine reuptake inhibitor; NET-selective.

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

8 to 12 mg per day.

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. Eyding D, et al. Reboxetine for acute treatment of major depression: systematic review and meta-analysis. BMJ 2010.

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