

RESEARCH MONOGRAPH . COMPOUND PROFILE

Boldenone

A 1-dehydro testosterone analog; an injectable AAS originally developed for veterinary use, widely diverted to human non-medical use.

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COMPOUND CLASS	Testosterone analog (1-dehydro testosterone)

ABSTRACT

Boldenone (17-beta-hydroxyandrost-1,4-dien-3-one; CAS 846-48-0; molecular formula C₁₉H₂₆O₂; molecular weight 286.41) is a 1-dehydro testosterone analog originally developed at Ciba and approved by the FDA in 1949 (Parenabol, withdrawn) and subsequently developed for veterinary use as Equipoise (the brand most associated with the compound). The 1,2 double bond reduces aromatase substrate quality, producing approximately 50 percent the estrogen conversion of testosterone at equivalent doses; this is the principal pharmacological feature distinguishing boldenone from testosterone. The undecylenate ester (Equipoise) provides a long half-life (approximately 14 days) for veterinary or non-medical injectable use. Schedule III in the US (covered by the AAS Control Act despite no human medical approval). Plasma half-life of native boldenone is short; ester formulations release over weeks. Used as a reference low-aromatizing testosterone analog in research.

1. Compound Identification

Boldenone is described as testosterone analog (1-dehydro testosterone). A 1-dehydro testosterone analog; an injectable AAS originally developed for veterinary use, widely diverted to human non-medical use.

1.1 Class summary

Testosterone analog (1-dehydro testosterone)

1.2 Subtitle

A 1-dehydro testosterone analog; an injectable AAS originally developed for veterinary use, widely diverted to human non-medical use.

2. Abstract

Boldenone (17-beta-hydroxyandrosta-1,4-dien-3-one; CAS 846-48-0; molecular formula $C_{19}H_{26}O_2$; molecular weight 286.41) is a 1-dehydro testosterone analog originally developed at Ciba and approved by the FDA in 1949 (Parenabol, withdrawn) and subsequently developed for veterinary use as Equipoise (the brand most associated with the compound). The 1,2 double bond reduces aromatase substrate quality, producing approximately 50 percent the estrogen conversion of testosterone at equivalent doses; this is the principal pharmacological feature distinguishing boldenone from testosterone. The undecylenate ester (Equipoise) provides a long half-life (approximately 14 days) for veterinary or non-medical injectable use. Schedule III in the US (covered by the AAS Control Act despite no human medical approval). Plasma half-life of native boldenone is short; ester formulations release over weeks. Used as a reference low-aromatizing testosterone analog in research.

3. Mechanism of Action

1-dehydro testosterone analog; AR agonism with reduced aromatase substrate quality (~50 percent estrogen conversion vs testosterone).

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

Veterinary 1.1 mg/kg every 3 weeks; non-medical AAS use is supratherapeutic.

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. Kicman AT. Pharmacology of anabolic steroids. Br J Pharmacol 2008.
2. Ferenchick GS. Anabolic-androgenic steroid abuse in horses: epidemiology and pharmacology. J Vet Pharmacol Ther 1996.
3. Llewellyn W. Anabolics. Body of Science 2011.

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