

RESEARCH MONOGRAPH . COMPOUND PROFILE

YK-11

*A non-steroidal SARM with reported
follistatin-inducing and myostatin-
modulating activity beyond AR agonism.*

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COMPOUND CLASS	SARM with myostatin-related activity

ABSTRACT

YK-11 (17- α ,20E-((((4-methoxyphenyl)sulfonyl)methylene)-bisoxo))-17- β -(methoxycarbonyl)methyl-androst-1,4-dien-3-one; molecular formula C₂₅H₃₄O₆; molecular weight 430.54) is a structurally novel SARM developed in Japan and described initially by the Yale-Kanno group at Toho University. Distinct from aryl propionamide SARMS by retaining a steroidal scaffold (modified androstane); the compound was reported as a tissue-selective AR partial agonist with concurrent induction of follistatin in C2C12 myoblast cultures, theoretically producing additive muscle hypertrophy through myostatin pathway inhibition. The follistatin-inducing claim is supported by a single research group and has not been independently replicated. No clinical trials. The compound is widely used recreationally as a high-potency SARM-class agent. Plasma half-life and pharmacokinetic data are sparse.

1. 1. Compound Identification

YK-11 is described as sarm with myostatin-related activity. A non-steroidal SARM with reported follistatin-inducing and myostatin-modulating activity beyond AR agonism.

1.1. 1.1 Class summary

SARM with myostatin-related activity

1.2. 1.2 Subtitle

A non-steroidal SARM with reported follistatin-inducing and myostatin-modulating activity beyond AR agonism.

2. 2. Abstract

YK-11 (17- α ,20E-((((4-methoxyphenyl)sulfonyl)methylene)-bisoxymethyl)-17- β -(methoxycarbonyl)methyl-androst-1,4-dien-3-one; molecular formula C₂₅H₃₄O₆; molecular weight 430.54) is a structurally novel SARM developed in Japan and described initially by the Yale-Kanno group at Toho University. Distinct from aryl propionamide SARMs by retaining a steroidal scaffold (modified androstane); the compound was reported as a tissue-selective AR partial agonist with concurrent induction of follistatin in C2C12 myoblast cultures, theoretically producing additive muscle hypertrophy through myostatin pathway inhibition. The follistatin-inducing claim is supported by a single research group and has not been independently replicated. No clinical trials. The compound is widely used recreationally as a high-potency SARM-class agent. Plasma half-life and pharmacokinetic data are sparse.

3. Mechanism of Action

Steroidal SARM scaffold with reported follistatin induction and consequent myostatin pathway inhibition. Independent replication limited.

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

Recreational use commonly 5 to 10 mg per oral administration daily; no clinical trial data.

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. Kanno Y, et al. (17- α ,20E)-17,20-[(1-methoxyethylidene)bis(oxy)]-3-oxo-19-norpregna-4,20-diene-21-carboxylic acid methyl ester (YK-11) is a partial agonist of the androgen receptor. Biol Pharm Bull 2011.
2. Kanno Y, et al. YK11 induces myogenic differentiation through follistatin in C2C12 cells. Biochem Biophys Res Commun 2013.
3. Solomon ZJ, et al. Selective androgen receptor modulators: current knowledge and clinical applications. Sex Med Rev 2019.

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