

Contains Nonbinding Recommendations

Draft – Not for Implementation

Draft Guidance on Testosterone Undecanoate

October 2024

This draft guidance, when finalized, will represent the current thinking of the Food and Drug Administration (FDA, or the Agency) on this topic. It does not establish any rights for any person and is not binding on FDA or the public. You can use an alternative approach if it satisfies the requirements of the applicable statutes and regulations. To discuss an alternative approach, contact the Office of Generic Drugs.

In general, FDA's guidance documents do not establish legally enforceable responsibilities. Instead, guidances describe the Agency's current thinking on a topic and should be viewed only as recommendations, unless specific regulatory or statutory requirements are cited. The use of the word *should* in Agency guidances means that something is suggested or recommended, but not required.

Active Ingredient:	Testosterone undecanoate
Dosage Form:	Capsule
Route:	Oral
Strengths:	100 mg, 150 mg, 200 mg
Recommended Study:	One in vivo bioequivalence study with pharmacokinetic endpoints

1. Type of study: Fed
Design: Single-dose, two-treatment, two-period crossover in vivo
Strength: 200 mg
Subjects: Asymptomatic hypogonadal males (serum testosterone measurements below 300 ng/dL in the morning on at least two separate days)
Additional comments: Exclude geriatric males. Subjects should not be receiving any treatment for their hypogonadism. Ex vivo conversion of testosterone undecanoate to testosterone may occur during the blood collection and sample handling. This conversion factor should be considered in bioanalytical methodology to ensure accurate measurement of testosterone undecanoate.

Analytes to measure: Testosterone undecanoate and testosterone in plasma

Submit the metabolite data as supportive evidence of comparable therapeutic outcome. For the metabolite, the following data should be submitted: individual and mean concentrations, individual and mean pharmacokinetic parameters, and geometric means and ratios of means for AUC and C_{max}

Bioequivalence based on (90% CI): Testosterone undecanoate

Waiver request of in vivo testing: 100 mg and 150 mg strengths based on (i) acceptable bioequivalence study on the 200 mg strength, (ii) acceptable in vitro dissolution testing of all strengths, and (iii) proportional similarity of the formulations across all strengths

Dissolution test method and sampling times: The dissolution information for this drug product can be found in the FDA's Dissolution Methods database, <http://www.accessdata.fda.gov/scripts/cder/dissolution/>. Conduct comparative dissolution testing on 12 dosage units for each of all strengths of the test product and reference listed drug (RLD).¹ Specifications will be determined upon review of the abbreviated new drug application.

Document History: Recommended February 2024; Revised October 2024

Unique Agency Identifier: PSG_213953

¹ If the RLD is not available, refer to the most recent version of the FDA guidance for industry on *Referencing Approved Drug Products in ANDA Submissions*.