

## **Draft Guidance on Dexlansoprazole**

This draft guidance, when finalized, will represent the current thinking of the Food and Drug Administration (FDA, or the Agency) on this topic.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.

**Active Ingredient:** Dexlansoprazole

**Dosage Form; Route:** Delayed-release capsule; oral

**Recommended Studies:** Three studies

1. Type of study: Fasting  
Design: Single-dose, two-treatment, two-period crossover in vivo  
Strength: 60 mg  
Subjects: Males and non-pregnant, non-lactating females, general population  
Additional comments: Applicants may consider using a reference-scaled average bioequivalence approach for this drug product. If using this approach, please provide evidence of high variability, within the study, in the bioequivalence parameters AUC and/or C<sub>max</sub> (i.e., within-subject variability  $\geq 30\%$ ). Please refer to the Progesterone Capsule Guidance for additional information regarding highly variable drugs.

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2. Type of study: Fed  
Design: Single-dose, two-treatment, two-period crossover in vivo  
Strength: 60 mg  
Subjects: Males and non-pregnant, non-lactating females, general population  
Additional comments: See comments above.

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3. Type of study: Fasting sprinkle-in-applesauce  
Design: Single-dose, two-treatment, two-period crossover in vivo  
Strength: 60 mg  
Subjects: Males and non-pregnant, non-lactating females, general population  
Additional comments: Administer the dose after sprinkling the entire contents of the capsule on a tablespoon of applesauce in accordance with the approved label of the RLD. See the additional comments above.

**Analytes to measure (in appropriate biological fluid):** Dexlansoprazole in plasma

**Bioequivalence based on (90% CI):** Dexlansoprazole

**Waiver request of in vivo testing:** 30 mg based on (i) acceptable bioequivalence studies on the 60 mg strength, (ii) acceptable in vitro dissolution testing of both strengths, and (iii) proportional similarity of the formulations between both strengths.

**Dissolution test method and sampling times:** The dissolution information for this drug product can be found on the FDA-Recommended Dissolution Methods web site, available to the public at the following location: <http://www.accessdata.fda.gov/scripts/cder/dissolution/>. Conduct comparative dissolution testing on 12 dosage units each of both strengths of the test and reference products. Specifications will be determined upon review of the abbreviated new drug application (ANDA).

In addition to the method above, for this product, dissolution profiles generated using USP Apparatus I at 100 rpm in at least three dissolution media (pH 4.5, 6 and 6.8) and water should be submitted to the Agency. This is to verify the release profiles of the dual releasing formulation. Agitation speeds may have to be increased if appropriate. It is acceptable to add a small amount of surfactant, if necessary. Comparative dissolution profiles should include individual unit data as well as the mean, range, and %CV at each time point for twelve units. Specifications will be determined upon review of the data submitted in the application.

**Product-specific testing conditions for in vitro feeding tube studies:**

The approved labeling for the reference product states that the product may be administered by a nasogastric (NG) tube (16 French or larger). Conduct the in vitro feeding tube studies including comparative recovery testing, particle size distribution study, comparative acid resistance stability testing, and sedimentation volume testing. Refer to the Lansoprazole Delayed-Release Orally Disintegrating Tablet Draft Guidance for additional information regarding procedures of in vitro feeding tube studies.

Testing tube: NG tube (16 French)

Testing strength: 30 mg, 60 mg

Dispersion medium: 20 mL water with different pH values (e.g., pH 5.5, 7.0 and 8.5)

Testing conditions for acid resistance stability testing: 500 mL of 0.1 N HCl maintained at  $37 \pm 0.5^\circ\text{C}$ ; USP Apparatus I at 100 rpm. Analyze the amount of dexlansoprazole released at 120 minutes.