*Contains Nonbinding Recommendations*

**Draft Guidance on Carbinoxamine Maleate**

This draft guidance, once finalized, will represent the Food and Drug Administration's (FDA's) current thinking on this topic. It does not create or confer any rights for or on any person and does not operate to bind FDA or the public. You can use an alternative approach if the approach satisfies the requirements of the applicable statutes and regulations. If you want to discuss an alternative approach, contact the Office of Generic Drugs.

**Active ingredient:** Carbinoxamine Maleate

**Form/Route:** Suspension, Extended Release/Oral

**Recommended studies:** 2 studies

1. Type of study: Fasting
   Design: Single-dose, two-way crossover in vivo
   Strength: 4 mg/5 mL (Dose: 16 mg in 20 mL)
   Subjects: Healthy males and nonpregnant females, general population.

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2. Type of study: Fed
   Design: Single-dose, two-way crossover in vivo
   Strength: 4 mg/5 mL (Dose: 16 mg in 20 mL)
   Subjects: Healthy males and nonpregnant females, general population.

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

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

**Waiver request of in vivo testing:** Not Applicable

**Dissolution test method and sampling times:**

Please note that a **Dissolution Methods Database** is available to the public at the OGD website at http://www.accessdata.fda.gov/scripts/cder/dissolution/. Please find the dissolution information for this product at this website. Please note that a dosage unit for a suspension is the labeled strength (mL). Twelve (12) units from 12 different bottles should be used.

For modified-release products, dissolution profiles on 12 dosage units each of test and reference products generated using USP Apparatus I at 100 rpm and/or Apparatus II at 50 rpm in at least three dissolution media (pH 1.2, 4.5 and 6.8 buffers) should be submitted in the application. Increase agitation speeds if appropriate. It is acceptable to add a small amount of surfactant, if necessary. Please include early sampling times of 1, 2, and 4 hours and continue every 2 hours until at least 80% of the drug is released. Specifications will be determined upon review of the application.

Due to a concern of dose dumping of drug from this drug product when taken with alcohol, the Agency currently requests that additional dissolution testing be conducted using various concentrations of ethanol in the dissolution medium, as follows:

Testing Conditions: 900 mL, 0.1 N HCl, USP apparatus 2 (paddle) @50 rpm, with or without alcohol;

Test 1: 12 units tested according to the proposed method (with 0.1N HCl), with data collected every 15 minutes for a total of 2 hours

Test 2: 12 units analyzed by substituting 5% (v/v) of test medium with Alcohol USP and data collection every 15 minutes for a total of 2 hours

Test 3: 12 units analyzed by substituting 20% (v/v) of test medium with Alcohol USP and data collection every 15 minutes for a total of 2 hours

Test 4: 12 units analyzed by substituting 40% (v/v) of test medium with Alcohol USP and data collection every 15 minutes for a total of 2 hours

Both test and RLD products must be tested accordingly and data must be provided on individual unit, means, range and %CV.