

## Draft Guidance on Alogliptin Benzoate and Pioglitazone Hydrochloride

This draft guidance, once finalized, will represent the Food and Drug Administration's (FDA's) current thinking on this topic.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:** Alogliptin Benzoate; Pioglitazone Hydrochloride

**Form/Route:** Tablet/Oral

**Recommended studies:** 2 studies

1. Type of study: Fasting  
Design: Single dose, two way crossover, in vivo  
Strength: 25 mg (base); 45 mg (base)  
Subjects: Healthy males and non-pregnant females, general population.  
Additional Comments:
  1. Females should practice abstinence or contraception during the study.
  2. To avoid hypoglycemic episodes in healthy volunteers, the drug products should be administered with 240 mL of a 20% glucose solution in water, followed by 60 mL of the glucose solution administered every 15 minutes for up to 4 hours after dosing.

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2. Type of study: Fed  
Design: Single dose, two way crossover, in vivo  
Strength: 25 mg (base); 45 mg (base)  
Subjects: Healthy males and non-pregnant females, general population.  
Additional Comments: Please see above.
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**Analytes to measure:** Alogliptin and Pioglitazone and Pioglitazone metabolite M-IV in plasma\*

**Bioequivalence based on (90% CI):** Alogliptin and Pioglitazone

\*Please submit the M-IV metabolite data as supportive evidence of comparable therapeutic outcome. For the M-IV 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<sub>max</sub>.

**Waiver request of in vivo testing:** Alogliptin 25 mg (base); Pioglitazone 30 mg (base), Alogliptin 25 mg (base); Pioglitazone 15 mg (base), Alogliptin 12.5 mg (base); Pioglitazone 45 mg (base), Alogliptin 12.5 mg (base); Pioglitazone 30 mg (base), Alogliptin 12.5 mg (base); Pioglitazone 15 mg (base), strength tablet, based on (i) acceptable bioequivalence studies on the

Alogliptin 25 mg (base); Pioglitazone 45 mg (base) 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:**

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 conduct comparative dissolution testing on 12 dosage units each of all strengths of the test and reference products. Specifications will be determined upon review of the application.