

Guidance on Valproic Acid

This guidance represents 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: Valproic acid

Dosage Form; Route: Capsule; oral

Recommended Studies: Two studies

1. Type of study: Fasting
Design: Single-dose, 2-treatment, 2-sequence, 4-period, fully replicated crossover in vivo
Strength: 250 mg
Subjects: Normal healthy males and nonpregnant females, general population
Additional comments: Please evaluate for normal liver function tests prior to dosing with valproic acid in bioequivalence studies

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2. Type of study: Fed
Design: Single-dose, 2-treatment, 2-sequence, 4-period, fully replicated crossover in vivo
Strength: 250 mg
Subjects: Normal healthy males and nonpregnant females, general population
Additional comments: Please see comment above
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Analytes to measure (in appropriate biological fluid): Valproic Acid in plasma

Bioequivalence based on (90% CI): Valproic Acid

Waiver request of in vivo testing: Not Applicable

Dissolution test method and sampling times: The dissolution information for this drug product can be found on the FDA-Recommended Dissolution Methods website 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 all strengths of the test and reference products. Specifications will be determined upon review of the abbreviated new drug application (ANDA).

Explanation: FDA has concluded that valproic acid is a narrow therapeutic index (NTI) drug based on the following evidence:

- The range between the effective valproic acid concentrations and the concentrations associated with serious toxicity is narrow;
- Sub-optimal doses or concentrations lead to therapeutic failure or severe toxicity;
- Valproic acid is subject to therapeutic monitoring based on pharmacokinetics measures;
- Valproic acid has low-to-moderate within-subject variability.

The study should be a fully replicated crossover design in order to:

- Scale BE limits to the variability of the reference product; and
- Compare test and reference products' within-subject variability.

For details about the “Method for Statistical Analysis Using the Reference-Scaled Average Bioequivalence Approach” for NTI drugs, see the guidance on warfarin sodium.