Contains Nonbinding Recommendations

Draft Guidance on Hydrogen Peroxide

This draft guidance, when finalized, will represent the current thinking of the Food and Drug Administration (FDA, or the Agency) on this topic.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

Dosage Form; Route: Solution; topical

Recommended Studies: Request for Waiver of In vivo Bioequivalence Study Requirements

Waiver option:

A. To qualify for a waiver of the in vivo bioequivalence study requirement under 21 CFR 320.22(b)(3), generic versions of hydrogen peroxide solution, 40% should contain the same active drug ingredient in the same concentration and dosage form as the reference product and contain no inactive ingredient or other change in formulation from the reference product that may significantly affect systemic or local availability.

B. For a topical solution drug product that differs from the reference product in inactive ingredients [as permitted by the chemistry, manufacturing and controls regulations for Abbreviated New Drug Applications (ANDAs), 21 CFR 314.94(a)(9)(v)], the regulation specifies that the applicant must identify and characterize the differences and provide information demonstrating that the differences do not affect the safety or efficacy of the proposed drug product.

Additional Comments:
In general, evidence to demonstrate that the formulation of the test product should not alter the local availability of hydrogen peroxide, compared to that from the reference product, may be based upon a comparison of the formulation composition as well as relevant quality and performance attributes of the test and reference product formulations.

For example, if the test and reference products are qualitatively (Q1) and quantitatively (Q2) the same, as defined in FDA's guidance for industry *ANDA Submissions – Refuse-to-Receive Standards*, relevant quality and performance attributes should include appearance, pH, specific gravity, evaporation (drying) rate, surface tension, viscosity and any other potentially relevant physical and chemical properties, characterized for a minimum of three batches of the test and three batches (as available) of the reference product.

If the test product contains different inactive ingredients or other changes in the formulation compared to the reference product, additional quality and performance characterizations should mitigate the risk that any differences between the test and reference products could affect the

formulation interaction with the disease state that may be relevant to the safety or efficacy of the drug product.

The influence of any differences in the function of the device constituent (e.g., for dose administration) between the test and reference products should be considered in the design of the characterization studies comparing the test and reference products. Applicants should also refer to FDA's draft guidance for industry entitled *Comparative Analyses and Related Comparative Use Human Factors Studies*, which, when finalized, will provide the Agency's current thinking on the identification and assessment of any differences in the design of the user interface for a proposed generic drug-device combination product when compared to the reference product.

Analytes to measure (in appropriate biological fluid): Not applicable

Bioequivalence based on (90% CI): Not applicable

Waiver request of in vivo testing: Not applicable

Dissolution test method and sampling times: Not applicable

Applicants intending to propose an alternative approach by which to demonstrate bioequivalence should refer to the guidance for industry *Controlled Correspondence Related to Generic Drug Development* and the guidance for industry *Formal Meetings Between FDA and ANDA Applicants of Complex Products Under GDUFA* for additional information describing the procedures on how to clarify regulatory expectations regarding your individual drug development program.