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Draft Guidance on Glycopyrrolate

October 2025

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Active Ingredient:	Glycopyrrolate
Dosage Form:	Tablet, orally disintegrating
Route:	Oral
Strengths:	0.85 mg, 1.7 mg
Recommended Studies:	Two options: (1) one in vivo bioequivalence study with pharmacokinetic endpoints, or (2) alternative approach to establish bioequivalence

I. Option 1: One in vivo bioequivalence study with pharmacokinetic endpoints

1. Type of study: Fasting
   Design: Single-dose, two-treatment, two-period crossover in vivo
   Strength: 1.7 mg
   Subjects: Healthy males and non-pregnant, non-lactating females
   Additional comments: Orally disintegrating tablet should be placed on the tongue, allowed to disintegrate, and swallowed without water.

II. Option 2: Alternative approach to establish bioequivalence

Option 2 can be used when the reference listed drug (RLD) for glycopyrrolate orally disintegrating tablets is listed in FDA's Approved Drug Products with Therapeutic Equivalence Evaluations' (the Orange Book) Discontinued Drug Product List (Discontinued Section) and there is no drug product listed in the Orange Book's Prescription Drug Product List (Active Section) that is, or can be, designated as a reference standard for the RLD. Conduct one in vivo study with pharmacokinetic endpoints using glycopyrrolate tablets, 2 mg.

1. Type of study: Fasting
   Design: Single-dose, two-treatment, two-period crossover in vivo
   Strength: 1.7 mg
   Subjects: Healthy males and non-pregnant, non-lactating females
   Additional comments: Conduct the study by testing glycopyrrolate orally disintegrating tablets administered without water compared to glycopyrrolate tablets administered with water.

Analyte to measure: Glycopyrrolate in plasma

Bioequivalence based on (90% CI): Glycopyrrolate

Waiver request of in vivo testing: 0.85 mg strength based on (i) an acceptable bioequivalence study on the 1.7 mg strength, (ii) acceptable in vitro dissolution test 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 in the FDA's Dissolution Methods database, http://www.accessdata.fda.gov/scripts/cder/dissolution/. Conduct comparative dissolution testing on 12 dosage units between both strengths. Specifications will be determined upon review of the abbreviated new drug application.

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