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3 Committee for Medicinal Products for Human Use (CHMP)

4 Cholic acid capsules 50 mg and 250 mg product-specific 5 bioequivalence guidance

6 Draft

Draft Agreed by Pharmacokinetics Working Party (PKWP)	November 2017
Adopted by CHMP for release for consultation	14 December 2017
Start of public consultation	31 January 2018
End of consultation (deadline for comments)	30 April 2018

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Comments should be provided using this [template](#). The completed comments form should be sent to PKWP@ema.europa.eu

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Keywords	<i>Bioequivalence, generics, cholic acid</i>
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13 Disclaimer:

14 *This guidance should not be understood as being legally enforceable and is without prejudice to the need to ensure that the data submitted in support of a*
15 *marketing authorisation application complies with the appropriate scientific, regulatory and legal requirements.*

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17 Requirements for bioequivalence demonstration (PKWP)*

BCS Classification**	BCS Class: <input type="checkbox"/> I <input type="checkbox"/> III <input checked="" type="checkbox"/> Neither of the two Background: cholic acid is considered a low solubility compound.
Bioequivalence study design <i>in case a BCS biowaiver is not feasible or applied</i>	single dose
	cross-over
	healthy volunteers
	<input type="checkbox"/> fasting <input checked="" type="checkbox"/> fed <input type="checkbox"/> both <input type="checkbox"/> either fasting or fed Standard meal (not high fat)
	Strength: 250 mg Background: highest strength to be used for a drug with linear pharmacokinetics and low solubility.

	Number of studies: one single dose study
Analyte	<input type="checkbox"/> parent <input type="checkbox"/> metabolite <input checked="" type="checkbox"/> both Background: Unconjugated cholic acid and total cholic acid (cholic acid, glycocholic acid and taurocholic acid)
	<input checked="" type="checkbox"/> plasma/serum <input type="checkbox"/> blood <input type="checkbox"/> urine
	Enantioselective analytical method: <input type="checkbox"/> yes <input checked="" type="checkbox"/> no
	24 hours pre-dose baseline correction (same sampling scheme as on dosing day including meals, with individual matched sampling time-points)
Bioequivalence assessment	Main pharmacokinetic variables: $AUC_{(0-t)}$ and C_{max}
	90% confidence interval: 80.00 – 125.00%

18 * As intra-subject variability of the reference product has not been reviewed to elaborate this product-specific bioequivalence guideline, it is not possible to
19 recommend at this stage the use of a replicate design to demonstrate high intra-subject variability and widen the acceptance range of C_{max} . If high intra-
20 individual variability ($CV_{intra} > 30\%$) is expected, the applicants might follow respective guideline recommendations.

21 ** This tentative BCS classification of the drug substance serves to define whether *in vivo* studies seems to be mandatory (BCS class II and IV) or, on the
22 contrary (BCS Class I and III), the Applicant may choose between two options: *in vivo* approach or *in vitro* approach based on a BCS biowaiver. In this latter
23 case, the BCS classification of the drug substance should be confirmed by the Applicant at the time of submission based on available data (solubility
24 experiments, literature, etc.). However, a BCS-based biowaiver might not be feasible due to product specific characteristics despite the drug substance being
25 BCS class I or III (e.g. *in vitro* dissolution being less than 85 % within 15 min (BCS class III) or 30 min (BCS class I) either for test or reference, or
26 unacceptable differences in the excipient composition).