Ask ELIQUENT

Client **questions.** Expert **answers.**

For a switch from vial to pre-filled syringe, will the EMA require a clinical PK bridging study before Phase 3?

Background

A client developing a novel monoclonal antibody investigational medicinal product (IMP) had successfully completed a Phase 2 study using a vial presentation. As the program prepared for phase 3, the development team decided to move to a pre-filled syringe (PFS).

Switching from a vial to a pre-filled syringe is a common evolution in product development, which aims to improve patient convenience, reduce administration errors, and potentially support self-administration.

The Challenge: It was not clear whether the pharmacokinetics (PK) data generated with the vial was still considered representative by EMA or whether a formal PK bridging study would be required.

Transitions like this are increasingly common. While the formulation, route, and dosage remain unchanged, regulators may question whether the new delivery device could influence dose delivery, absorption, or exposure. For a program approaching pivotal Phase 3 trials, this decision is critical and has significant implications for trial design, timelines, cost, and overall regulatory strategy.

Regulatory Snapshot

If the formulation, concentration, route/site administration, and dosing regimen remain unchanged - and if the PFS is validated to deliver the same dose and rate - EMA generally does not require a standalone PK bridging study before Phase 3.

Exposure comparability can be demonstrated through built-in population PK (popPK) and a sparse PK subset within the Phase 3 program, supported by a robust Q5E comparability/quality package.

Risk-Based Considerations

To satisfy EMA expectations and de-risk global submissions, developers should confirm exposure comparability by including a popPK assessment, a sparse PK subset and a robust ICH Q5E comparability package covering analytical, functional, stability, and device performance, which should be sufficient for EMA. This approach also has several benefits:

No extra trial needed: PK samples are collected from patients already in a Phase 3 study.

Direct evidence for regulators: Confirms Cmax, AUC, and PK variability match historical vial data.

Stronger comparability package: Complements ICH Q5E quality and device data with real clinical results.

Global readiness: Satisfies more conservative regulators (e.g., PMDA, NMPA) who may ask for PK data after a device change.

It is important to note that every case is assessed on risk. If the device change introduces factors that could alter dose delivery performance, (such as altered injection mechanics, needle gauge, or interactions between the product and device materials) or product integrity, EMA may expect additional bridging data.

Best Practice: Early engagement with regulators where this question is included in a scientific advice meeting can help secure early alignment and mitigate risk.

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Expert Insights

Switching from vial to pre-filled syringe is a complex CMC change. Beyond PK comparability, sponsors must account for device-specific regulatory pathways.

For example, FDA and EMA differ in how they view device verification and validation requirements. Early alignment with regulators can prevent downstream delays at the Phase 3 to BLA/MAA transition.

Our experience shows that integrating device considerations into the CMC strategy early—before Phase 3 initiation—can prevent costly surprises and preserve approval timelines.

Supporting Your Success

ELIQUENT supports clients navigating critical device transitions by:

- Framing **Scientific Advice questions** to secure clear regulator guidance.
- Developing **robust Q5E comparability packages** across quality, analytical, functional, and device data.
- Designing **Phase 3-to-BLA/MAA roadmaps** that anticipate both EU and US requirements.
- Mitigating global risks by **incorporating data strategies** that satisfy EMA, FDA, and other health authorities.

By bringing clarity to regulatory complexity, we help clients avoid unnecessary studies, align global strategies, and keep pivotal trials and approvals on track.

Outcomes Matter

ELIQUENT's CMC Solutions reduce risks and accelerate timelines — delivering measurable value to clients. From first draft to final submission, ELIQUENT's CMC Strategy & Submissions team delivers:

Fewer costly delays through proactive planning and remediation

Stronger filings built on regulatory and technical expertise

Faster path to market with aligned strategy and execution

The ELIQUENT Advantage

Our unique blend of regulatory insight, technical expertise, and cross-functional delivery helps life sciences companies overcome barriers, accelerate timelines, and execute with precision. ELIQUENT's CMC Solutions are driven by:

Deep Bench **Strength**

Our team includes former agency experts, seasoned industry leaders and technical engineers who understand regulatory expectations from the inside out.

Cross-Functional **Delivery Model**

We integrate regulatory, quality, and engineering functions —ensuring technical consistency and executive-level oversight throughout the program.

Novel Product **Specialization**

From CGT to radiopharmaceuticals and RNA-based therapies, we bring the nuanced understanding required for today's most complex modalities.

Global **Perspective**

We help clients navigate evolving requirements across the U.S., EU, and emerging markets, ensuring submission readiness and lifecycle flexibility.

Explore ELIQUENT's end-to-end CMC Strategy & Submission Solutions at **ELIQUENT.com/CMC**