

AB-101 Commercial Manufacturing — Technical Points of Clarification

Artiva Biotherapeutics x Made Scientific — Confidential — 14 August 2026

Purpose

The attached estimate is accurate to the $\pm 30\%$ tolerance you specified, built from your own process description, your public disclosures, and a small number of our own stated assumptions where a specific number was not available. A short list of process details — for confirmation by Artiva and Made Scientific — would allow that range to be tightened and this to be developed into a work-order-level proposal. None of the items below change the commercial structure; they refine the numbers inside it.

Process details — yours to confirm

- 1. NK seed density for the 200 L run.** Our working assumption for the feeder-to-NK seeding ratio is 2.5:1. What we do not know is how many NK cells seed a 200 L expansion — i.e., the expansion fold. This single number is the largest lever in the model: it decides whether one eFeeder suite comfortably supplies the full drug product program, or whether a second is needed.
- 2. eFeeder top-ups during the 200 L culture.** Irradiated feeders do not replicate, so the culture likely needs re-stimulation at one or more points before harvest. How many top-ups, and at what feeder:NK ratio each time?
- 3. ICB vials required to seed a 200 L batch.** Your current process seeds a 50 L run from a single ICB vial. Does a 200 L run scale linearly (one vial), or does it require multiple ICB vials per batch? This sizes the Intermediate Cell Bank suite's throughput requirement.
- 4. Commercial dosing regimen.** We modeled against the Phase 3 proposed design — two doses of 4 billion cells (8 vials per patient). Is that the regimen you want us to plan commercial capacity around, or should we carry the wider Phase 1/2a range (1–4 billion cells per dose, up to three doses) as the basis instead?
- 5. Batch duration split.** You state an 11–13 day drug product batch. For how many of those days is the 200 L bioreactor itself occupied, versus the seed train (bag/rocker or 50 L) that precedes it? This is the number behind our observation that decoupling the seed train into a separate room can raise throughput without adding suites — confirming the split would let us replace an estimate with your own figure.
- 6. Cracking a feeder and NK vial.** Does thaw go into a bag expansion prior to the 50 L step, for both the feeder and the NK/ICB side? If so, an updated floor plan may need a room dedicated to starting-material thaw and initial expansion, in addition to the main Feeder and ICB rooms shown today.
- 7. DP storage duration.** How long would finished drug product hold in CRF and LN_2 storage before shipment? We are working through Feeder, ICB and NK DP vial demand in 5 mL AT vials to size the CRF and LN_2 rooms — confirming a hold duration would let us right-size them rather than carry a placeholder.

Facility and site planning — joint decisions

8. Facility. Technology transfer and engineering activities would begin in existing licensed space — 201 College Road East in Princeton, or East Norriton in Pennsylvania — and bridge into 307 College Road East as each suite comes ready, carrying the process through GMP readiness, PPQ and commercial supply. Following technical review with Made Scientific's Head of Development and Head of Technical Operations, moving eFeeder production into 307 as well is a **proposed move — options remain open**; it would give better utilization and a single-site regulatory footprint. Made Scientific's initial build-out at 307 — cleanrooms, laboratories, warehousing and cold storage — completes Q4 2027 – Q1 2028; the Artiva suite build is estimated at 12–15 months from signature of the commercial agreement. Both the transfer site and the suite configuration inside 307 are open — see 9 and 10.

9. Feeder and ICB room configuration. Do feeder and ICB expansion share one room, or sit in two separate rooms? And is harvest performed in each 200 L DP suite individually, or moved to a single shared harvest room serving Feeder, ICB and DP — sequencing production to maximize routine harvesting and minimize harvest-suite downtime?

10. Suite sizing strategy. Does it make more sense to build enlarged room(s) for Feeder/ICB at 50 L and enlarged multi-200 L room(s) for DP, versus more individual suites as currently drawn? We would value a joint session on process flow-through and throughput optimization strategy before finalizing the floor plan.

11. Suite background — Grade B or Grade C. The floor plan we are working from shows a Grade B core inside a Grade C shell for every suite, which accommodates either choice architecturally. Which do you want costed as the design basis? This affects fit-out cost, gowning requirements and headcount.

12. Irradiator siting. With eFeeder consolidating into 307, the RS 1800-Q would site in the Fill/Finish suite or a dedicated Harvest suite — siting TBD, pending 9 and 10 above. We understand the unit transfers from Artiva rather than being a Made Scientific purchase; confirming the transfer timeline and whether radiation licensing travels with it or needs to be re-established at 307 would let us firm up the lead-time answer.

13. Dedicated analytical capacity. Confirming our assumption: the QC, Microbiology and Analytical suites (and their staffing) are dedicated to this program, not shared across other Made Scientific clients — consistent with the dedicated-capacity commercial structure described in the attached materials.

Treatment of open assumptions

Where we did not yet have your number, we used a defensible substitute and labeled it as an estimate rather than presenting it as fact — for example, the batch-duration split in item 5 is currently our own assumption, stated plainly wherever it appears in the attached materials. Nothing in the commercial structure — the fee schedule, the CapEx position, the reservation terms — depends on these answers. They refine the throughput and lead-time figures; they do not change the commercial terms.

We would be glad to work through these points on a call at Artiva's convenience.