Out-of-range incubation temperature during CAR-T viability staining

DEV-2026-0142 · CAPA-2026-0088 · QC — Analytical (Flow Cytometry) · Severity: Major · Product: CAR-T Drug Product, Lot 25C-0312
Occurred 2026-07-09 · Detected 2026-07-09

1. Event Summary

During 7-AAD viability staining for lot 25C-0312, the incubation was performed at 18 °C for 20 minutes instead of the validated 2–8 °C. The excursion was identified by the QC analyst during contemporaneous record review and recorded immediately.

2. Immediate Actions / Containment

- Testing paused; affected samples quarantined pending assessment.
- Incubator temperature verified and logged; deviation recorded in the quality system.
- QC supervisor and QA notified per the deviation SOP.

3. Impact Assessment

Potential impact to the reported viability result for lot 25C-0312. No other lots affected (single-lot event). No patient impact — product not released. Assessment required to determine whether the viability result is reportable or the assay must be repeated from retained sample.

4. Investigation

Review of the batch record confirmed the incubation step was executed outside the validated 2–8 °C range. Interviews and equipment logs indicate the sample rack was left on the bench during a workflow interruption rather than returned to refrigerated storage. No instrument malfunction identified.

5. Root Cause

Procedural — the SOP did not specify a maximum permissible time out of refrigerated storage during workflow interruptions, and no visual cue prompted return of samples to 2–8 °C.

6. Root-Cause Analysis (5-Whys)

1. Why was the incubation at 18 °C? The sample rack was left on the bench.
2. Why was it left on the bench? A workflow interruption occurred mid-prep.
3. Why did that cause an excursion? No defined limit for time-out-of-refrigeration in the SOP.
4. Why was there no limit? The SOP assumed uninterrupted execution.
5. Why was that assumption unverified? Interruption scenarios were not covered in the method risk assessment.

7. CAPA Action Plan

Type	Action	Owner	Due
Correction	Assess reportability of lot 25C-0312 viability result; repeat from retained sample if required	QC Analytical Lead	2026-07-16
Corrective	Revise the viability SOP to define a maximum time-out-of-refrigeration limit and a required return-to-2–8 °C step after any interruption.	QA Document Control	2026-08-06
Preventive	Add interruption scenarios to the method risk assessment; add a bench visual cue/timer for refrigerated-sample handling.	QC Lead	2026-08-20
Preventive	Retrain flow QC analysts on the revised SOP; document training completion	QC Supervisor	2026-08-27

8. Effectiveness Check

Review the next 20 viability runs for any recurrence of temperature excursions and confirm 100% training completion. Effectiveness verified if zero recurrences over 90 days.

QC Review Record

#	Category	Review Item	Status

1	Completeness	Deviation and CAPA IDs, dates, area, product, and severity are populated.	PASS
2	Impact Assessment	Product-quality and patient-impact conclusions are stated.	PASS
3	Root Cause	Root cause is specific and supported by the investigation (not just a restatement of the event).	PASS
4	CAPA Logic	Each preventive action maps to the root cause; corrective ≠ preventive conflation.	PASS
5	Human Decision Required	Confirm the reportability determination for lot 25C-0312 (repeat vs. report) with QA.	HUMAN DECISION
6	Human Decision Required	Verify the final severity classification against the site's deviation-grading procedure.	HUMAN DECISION
7	Human Decision Required	Confirm CAPA owners and due dates are realistic and agreed with the named functions.	HUMAN DECISION
8	Regulatory	Assess whether this event triggers any reporting/notification obligations.	HUMAN DECISION

Status: DRAFT — NOT approved. Human-decision items outstanding.

Reviewed by: Kalif Shear **Date:** _____