R10 Medium (RPMI + 10% FCS + Pen/Strep)

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Protocol ID: BUF-R10-MED **Version:** v1.1 **Author:** Dillon Corvino **Date:** 2026-09-18

Purpose

R10 is complete RPMI 1640 medium supplemented with 10% heat-inactivated FCS and Penicillin/Streptomycin. It is used for PBMC washing after Ficoll separation, for quenching CellTrace dyes, and as a general-purpose lymphocyte culture medium.

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Linked protocols

- `HUM-BLD-PBMC-ISO`
- `HUM-KHYG1-CULTURE`
- `GEN-CTV-STAIN`

Working buffer composition

Component	Final concentration	Notes
RPMI 1640	—	Base medium
Fetal calf serum	10% (v/v)	Heat-inactivated
Penicillin/Streptomycin	1% (v/v)	100x stock → 1x final

Preparation

A. Preparation of stock (if applicable)

Not applicable — prepared directly as the working buffer.

B. Preparation of working buffer

Stock solutions required

Reagent	Stock concentration	Notes
Fetal calf serum (FCS)	—	Heat-inactivate if required
Penicillin/Streptomycin	100x	Add to 1x final
RPMI 1640	—	Sterile-filtered

Preparation of 500 mL R10

1. Aliquot **450 mL** sterile RPMI 1640 into a sterile bottle.
2. Add **50 mL** FCS (10% final).
3. Add **5 mL** Penicillin/Streptomycin (100x stock) → **1% final**.
4. Gently invert to mix; **do not vortex**.
5. Label with:
    - *R10 complete medium*
    - Date of preparation
    - Expiry (4 weeks after preparation)

> **Tip**
>
> Pre-warming R10 to 37 °C before use improves cell recovery following Ficoll separation or staining.

Storage and stability

- Store at **4 °C**, protected from light.
- Use within **4 weeks** after preparation.
- Do not freeze.

Reagent details

Reagent	Supplier	Cat. #	Notes
RPMI 1640	Various	—	Base medium
Fetal calf serum	Various	—	Heat-inactivated
Pen/Strep (100x)	Various	—	Final 1x concentration

Safety (brief)

- Handle medium aseptically in a biosafety cabinet.
- Dispose of contaminated or expired medium as biohazardous waste.
- Follow institutional guidelines for handling FCS-containing media.

Version history

Version	Date	Author	Changes
v1.0	2025-11-21	Dillon Corvino	Initial R10 buffer document.
v1.1	2026-09-18	Dillon Corvino	Migrated to shared summary:/helper architecture (buffer/protocol redesign).