

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

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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.

Working buffer composition

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

Preparation

Stock solutions required

Reagent	Stock concentration	Notes
Fetal calf serum (FCS)	—	Heat-inactivate if required
Penicillin/Streptomycin	100×	Add to 1× 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 (100× 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 (100×)	Various	—	Final 1× concentration

Safety

- 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.