R0 Medium (RPMI Without Serum)

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Protocol ID: BUF-R0-MED **Version:** v1.1 **Author:** Dillon Corvino **Date:** 2026-09-18

Purpose

R0 medium is serum-free RPMI 1640 used for diluting whole blood prior to Ficoll separation and for washing PBMCs following gradient isolation. The absence of serum preserves the density characteristics of blood during layering and ensures optimal interface formation on Ficoll.

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Linked protocols

- `HUM-BLD-PBMC-ISO`

Working buffer composition

Component	Final concentration	Notes
RPMI 1640	100%	Base medium
FCS	0%	Serum-free formulation
Antibiotics	0%	Add only if required for sterility

> **Note**
>
> This buffer is intentionally **serum-free** to avoid interference with Ficoll density gradient separation.

Preparation

A. Preparation of stock (if applicable)

Not applicable — prepared directly as the working buffer.

B. Preparation of working buffer

R0 medium consists of sterile RPMI 1640 with **no** serum or additional supplements.

Preparation of 500 mL R0

1. Obtain 500 mL sterile-filtered RPMI 1640.
2. Inspect for turbidity or colour change; discard if contamination is suspected.
3. Label the bottle clearly as **R0 (RPMI, no serum)**.
4. Store protected from light.

Optional antibiotic supplementation

If required for sterility during slower workflows: - Add **5 mL** Penicillin/Streptomycin (100x stock) → final 1% (v/v). (Not recommended unless protocol explicitly requires it.)

Storage and stability

- Store at **4 °C**, protected from light.
- Stable for **4–6 weeks** unopened; **2–4 weeks** after opening if handled aseptically.
- Do not freeze.

Reagent details

Reagent	Supplier	Cat. #	Notes
RPMI 1640	Various	—	Sterile-filtered
Pen/Strep (optional)	Various	—	Only if supplementation required

Safety (brief)

- Handle RPMI using aseptic technique to avoid contamination.
- Work in a biosafety cabinet when preparing aliquots or supplementing.
- Dispose of expired or contaminated medium as biohazardous liquid waste.

Version history

Version	Date	Author	Changes
v1.0	2025-11-21	Dillon Corvino	Initial release of R0 medium file
v1.1	2026-09-18	Dillon Corvino	Migrated to shared summary:/helper architecture (buffer/protocol redesign).