RBC Lysis Buffer (Hybrimax / Commercial)

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

Purpose

This buffer is used to lyse red blood cells in single-cell suspensions derived from liver (and other tissues, if applicable) while aiming to preserve leukocyte populations for downstream analysis.

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Linked protocols

- MUS-SPL-DIS
- MUS-LNG-DIG
- MUS-BM-ISO
- MUS-BLD-PRC
- MUS-TMR-DIG

Working buffer composition

This protocol assumes the use of a **commercially supplied RBC lysis buffer**, such as:

- **HybriMax RBC lysis buffer** (Sigma), used at 1x working strength.

If an alternative supplier is used (e.g. BioLegend RBC Lysis Buffer), document the product and use according to manufacturer instructions, adapting incubation times as internally validated.

Preparation

A. Preparation of stock (if applicable)

Not applicable — this reagent is not diluted from an internal stock. It is either used directly as supplied (ready-to-use 1x) or diluted straight to working strength from a commercial concentrate (see B).

B. Preparation of working buffer

1. Confirm whether the commercial HybriMax RBC lysis buffer is supplied as **ready-to-use (1x)** or **concentrate (e.g. 10x)**.
2. If supplied as **1x solution**:
    - Aliquot into smaller working volumes (e.g. 5-10 mL) to avoid repeated bottle opening.
    - No further dilution is required.
3. If supplied as **concentrate (e.g. 10x)**:
    - Dilute with sterile water or buffer as per manufacturer's instructions to make **1x RBC lysis solution**.
    - Mix thoroughly.
4. Label aliquots with:
    - "RBC Lysis Buffer (HybriMax)"
    - 1x or stock concentration
    - Date of preparation
    - Version (`BUF-RBC-HYB`)

> **Note**
>
> The liver protocol `LIV-001` uses **0.5 mL of 1x RBC lysis buffer per sample** after Percoll enrichment, with a **7-minute** incubation at room temperature.

Storage and stability

- Store the commercial RBC lysis buffer according to manufacturer's instructions (commonly at **2–8 °C**).
- Keep tightly closed to avoid evaporation and contamination.
- Aliquoted 1x working solution should also be stored at **2–8 °C** and used within the period recommended by the manufacturer or internal validation.
- Do not freeze unless explicitly supported by the manufacturer.

Reagent details

Component	Supplier	Cat#	Notes
HybriMax RBC lysis buffer	[TBD]	[TBD]	Commercial RBC lysis buffer; used at 1x working concentration

(If using a different brand, add a row or update Supplier/Cat# accordingly.)

Safety (brief)

- RBC lysis buffers typically contain detergents and may contain **sodium azide** or other toxic components.
- Handle with gloves and standard lab PPE.
- Avoid contact with eyes and skin; consult the manufacturer's safety data sheet (SDS).
- Dispose of RBC-lysis waste and contaminated consumables in accordance with local chemical and biohazard regulations.

Version history

Version	Date	Author	Change summary
v1.0	2025-11-20	Dillon Corvino	Initial buffer definition
v1.1	2026-09-18	Dillon Corvino	Migrated to shared summary:/helper architecture (buffer/protocol redesign).