

FACS/MACS Buffer

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Protocol ID: BUF-FACS-v1.0

Version: v1.0

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Purpose

This buffer is used for washing and resuspending cells during flow cytometry staining, FACS sorting, and MACS-based enrichment. It helps maintain cell viability, prevents clumping, and minimises nonspecific binding.

Table of contents

| | |
|--|----------|
| Purpose | 1 |
| Linked protocols | 1 |
| Composition (1× FACS/MACS Buffer) | 2 |
| Preparation | 2 |
| Storage and stability | 2 |
| Reagent details | 2 |
| Safety (brief) | 3 |
| Version history | 3 |

Linked protocols

This buffer is used in:

- **Mouse Liver Dissociation to Single-Cell Suspension – LIV-001 (v1.0)**
- Additional protocols as needed.

Composition (1× FACS/MACS Buffer)

Typical preparation for **500 mL** of buffer:

| Component | Stock concentration | Volume for 500 mL | Final concentration | Notes |
|-----------|---------------------|-------------------|---------------------|---------------------------|
| PBS 1× | — | 500 mL | — | Base buffer |
| FCS | — | 10 mL | 2% (v/v) | Heat-inactivated, if used |
| EDTA | 0.5 M | 2 mL | 2 mM | Sterile stock |

(Volumes above reflect the original SOP recipe: PBS 1× 500 mL, FCS 10 mL, EDTA (0.5 M) 2 mL.)

Preparation

1. Start with **500 mL PBS 1×** in a sterile bottle.
2. Add **10 mL FCS** (to achieve 2% v/v final).
3. Add **2 mL EDTA 0.5 M stock** (to achieve 2 mM final).
4. Mix gently by inversion.
5. If sterility is required, filter the buffer through a **0.22 µm filter** into a sterile storage bottle.
6. Label with:
 - “FACS/MACS Buffer (PBS + 2% FCS + 2 mM EDTA)”
 - Date of preparation
 - Version (BUF-FACS-v1.0)

Tip

For highly sensitive applications (e.g. scRNA-seq, FACS of rare populations), prepare fresh or use small aliquots to minimise repeated warming/cooling cycles and contamination risk.

Storage and stability

- Store at **4 °C**, protected from light if possible.
- Recommended to use within **4–6 weeks**, or according to internal lab validation and microbial QC.
- Before use, invert gently to resuspend any settled components.
- Avoid repeated temperature cycling; if frequent bench use is expected, consider preparing smaller working aliquots.

Reagent details

| Component | Supplier | Cat# | Notes |
|------------|----------|-------|---|
| PBS 1× | [TBD] | [TBD] | Sterile, Ca ²⁺ /Mg ²⁺ -free recommended |
| FCS | [TBD] | [TBD] | Heat-inactivated if required by downstream applications |
| EDTA 0.5 M | [TBD] | [TBD] | Sterile stock solution; pH ~8.0 |

Safety (brief)

- Handle biological samples in FACS buffer according to institutional biosafety rules.
- FCS is of animal origin; treat as a potential biohazard.
- EDTA is of low toxicity at working concentrations but should be handled with standard lab PPE.

Version history

| Version | Date | Author | Change summary |
|---------|------------|----------------|---------------------------|
| v1.0 | 2025-11-20 | Dillon Corvino | Initial buffer definition |