

Lab Naming and Versioning Guide

Abdullah Lab, IMMEI, University Hospital Bonn

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Purpose

This document defines the **naming conventions** and **identifier system** used across the Corvino Lab protocol library. These rules ensure:

- Consistency across all `.qmd` protocol and buffer files
- Stable, human-readable identifiers
- Clear separation of *identity* (`protocol_id`) from *versioning* (`version:`)
- Scalable indexing as the repository grows

This naming guide governs all **protocol**, **buffer**, and **supporting document** files.

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Identifier Principles

Each file includes a **stable identifier** (`protocol_id`) that never changes once assigned. Document **versions**, however, reflect revisions and updates over time.

Identifiers are:

- Human-readable
 - Hierarchical
 - Independent of filenames
 - Independent of version numbers
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Identifier Structure

All identifiers follow this structure:

<DOMAIN>-<TOPIC>-<TYPE>-<ID>

Where:

DOMAIN

Defines biological context or system

Examples: - MUS → mouse

- HUM → human

- CELL → cell-line-based procedure

- GEN → general or cross-species workflows

TOPIC

Defines the primary experimental or biological theme

Examples: - LCMV → LCMV virology workflows

- PTPRC → genotyping or CD45 locus assays

- FLOW → flow cytometry

- RNA → RNA extraction or analysis

TYPE

A concise descriptor of the method class

Examples: - PROD → virus production

- PLA → plaque assay
- FFA → focus-forming assay
- QPCR → quantitative PCR
- GENO → genotyping
- PROP → propagation medium or cell maintenance
- MED → assay or experimental medium

ID

A three-digit number (001, 002, ...) indicating discrete methods inside the same category.

Important:

The ID increments only when a **new, distinct protocol or buffer** is added—not when updating or revising an existing file.

Versioning

Versions are tracked exclusively in the YAML header:

```
version: "v1.0"
```

- Version increases reflect evolutionary changes to the *same* protocol or buffer.
- `protocol_id` remains **unchanged** across all updates.

Examples: - v1.0 → initial release

- v1.1 → minor modifications
- v2.0 → major revision

Never encode the version inside the `protocol_id`.

When to Assign a New ID (001 → 002)

A new ID is assigned when:

- The protocol constitutes a **novel method**, *not* just a revision
- The workflow differs in a functionally meaningful way

- A buffer has a **distinct formulation** or **different intended use**
- An assay variant is introduced (e.g., fluorescent plaque assay, alternate overlay formulation, new primer system)

Examples:

Virus Production

- MUS-LCMV-PROD-001 → standard T75 BHK or L929 production
- MUS-LCMV-PROD-002 → roller-bottle high-volume culture system

Assays

- MUS-LCMV-PLA-001 → crystal violet plaque assay
- MUS-LCMV-PLA-002 → fluorescent immunoplaque assay

Genotyping

- MUS-PTPRC-GEN0-001 → Ptpcr SNP genotyping
- MUS-PTPRC-GEN0-002 → multiplexed three-primer allelic discrimination assay

Buffers

- BUF-BHK-PROP-001 → standard BHK propagation medium
- BUF-BHK-PROP-002 → serum-free BHK propagation medium

Filenames

Filenames describe the file content and follow this structure:

Protocols

`prot_<domain>_<topic>_<method>.qmd`

Examples: -prot_mus_lcmv_multi_strain_production.qmd -prot_mus_lcmv_plaque_assay_vero.qmd
-prot_mus_lcmv_focus_forming_assay.qmd -prot_mus_genotyping_ptprc_jaxboy_single_tube.qmd

Buffers

buf_<target>_<function>.qmd

Examples: - buf_bhk_propagation_medium.qmd - buf_vero_propagation_medium.qmd - buf_lcmv_plaque_assay_m

Required YAML Fields

Each .qmd file must include:

```
title:
author:
date:
version:
protocol_id:
```

Example:

```
protocol_id: "MUS-LCMV-PROD-001"
version: "v1.0"
```

Protocol ID Examples (Current Library)

LCMV Methods

- MUS-LCMV-PROD-001 → LCMV multi-strain production protocol
- MUS-LCMV-PLA-001 → Vero cell plaque assay
- MUS-LCMV-FFA-001 → Focus-forming assay
- MUS-LCMV-QPCR-001 → GP-based qPCR viral load assay

Genotyping

- MUS-PTPRC-GEN0-001 → Ptpcr (CD45.1/2) allele SNP genotyping

Buffers

- BUF-BHK-PROP-001 → BHK propagation medium
 - BUF-VERO-PROP-001 → Vero propagation medium
 - BUF-LCMV-PLA-001 → LCMV plaque assay medium
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Rules for Future Expansion

1. Maintain readability: avoid unnecessary abbreviations.
 2. Keep identifiers **short but descriptive**.
 3. Ensure **no collisions** within each TOPIC–TYPE group.
 4. Do not remove or reuse IDs, even if protocols become deprecated.
 5. Always update the version number when content changes.
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Version History

Version	Date	Description
v1.0	2025-08-01	Original naming guide.
v1.1	2025-12-02	Expanded to include LCMV protocol classes, buffer categories, and new genotyping schema.