



Montreal Neurological Institute and Hospital
 McGill University

CBIG-02-008

CSF PROCESSING

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1. REVISION HISTORY

Version	Summary of revisions	Effective Date
1.0	Initial	01-May-2020

2. SCOPE AND APPLICATION

This protocol is to be used for the processing of cerebrospinal fluid (CSF).

3. REFERENCE TO OTHER SOP OR DOCUMENTS

When adopting this SOP for local use, please reference *C-BIG Repository: CBIG-02-008 CSF Processing*.

3.1 Reference to Other C-BIG SOPs or Documents

1. CBIG Repository: CBIG-03-002 RPM Conversion

3.2 Reference to External SOPs or Documents

1. ETP Standard Operating Procedures: ETP-P-0010 CSF Collection and Processing
2. Red Nacional de Biobancos – Spanish National Biobank Network: SOP CSF
3. C.E. Teunissen *et al.* Neurology. 2009: A consensus protocol for the standardization of cerebrospinal fluid collection and biobanking.

4. PERSONNEL QUALIFICATION AND RESPONSIBILITIES

To be read by all personnel who process CSF. All personnel who read this SOP should sign the form found in the training log binder.

5. ABBREVIATIONS AND DEFINITIONS

Abbreviation	Definition
C-BIG	Clinical Biological Imaging and Genetics Repository
CSF	Cerebrospinal Fluid
Min	Minutes
mL	Milliliters
QA	Quality Assurance
QC	Quality Control
RBC	Red Blood Cells
RT	Room Temperature
SOP	Standard Operating Procedure
°C	Celsius

6. MATERIALS AND EQUIPMENT

NOTE: All disposable items are sterile (gamma-irradiated) unless otherwise specified. All equipment, disposables or reagents can be substituted with equivalent materials following evaluations and approval, unless specified otherwise.

NOTE: All sample contact materials must be suitable for RNA work (i.e. RNase-free). Use clean gloves at all times to prevent inadvertent RNase contamination during processing. All equipment, disposables or reagents can be substituted with equivalent materials following evaluation and approval, unless specified otherwise.

The materials and equipment listed below are recommendations only and may be substituted by alternative/equivalent products more suitable for site-specific task or procedure.

Material/Equipment	Material/Equipment (site specific)
Disposable transfer pipets	
Polypropylene conical tubes, 15 mL	
Pipets tips, 200 µL	
Pipets tips, 1000 µL	
Cryovials, 1 mL, conical bottom	Nunc Biobanking and Cell Culture Cryogenic Tubes, Thermo Scientific; Cat # 366656
Micropipets, range 200 µL, 1000 µL	
Centrifuge with swinging bucket	Sorvall Legend RT Thermo Scientific; Cat #75004377

7. PROCEDURES

PRECAUTIONS: All biological samples derived from a human source are considered to be biohazardous. Use appropriate precautions when working with such samples (i.e. personal protection equipment such as gloves, lab coat and safety glasses). All waste

(samples and related contact materials) must be placed in marked biohazardous waste containers and disposed under hospital guidelines.

7.1 CSF Processing

NOTE: Immediately after collection, keep the CSF at 4°C or on ice until ready to process.

1. If CSF is not collected in a 15 mL polypropylene tube, transfer the CSF sample into a 15 mL polypropylene tube using a transfer pipet.
2. Centrifuge for 10 min at 2000Xg or at 400Xg if cells are needed using a centrifuge with a swinging bucket.
3. Transfer the supernatant (CSF) to a new 15 mL polypropylene tube using a transfer pipet and ensure that the pellet is not disturbed.

NOTE: The cell pellet may not be visible so care must be taken to not touch the sides of the tube and disrupt the pellet.

NOTE: If the cells are to be used right away, keep the pellet on ice if not the cell pellet should be snap frozen either by, placing the tube containing the cell pellet on dry ice or by slowly lowering the tube into liquid nitrogen, then freezing the cell pellet in a -80°C freezer. If neither of those options are available, place the tube with the cell pellet directly into the -80°C freezer.

4. Aliquot in conical cryovials and store at -80°C for long-term storage.

7.2 Summary Table

Steps	
1. If needed, transfer the CSF sample into a 15 mL polypropylene tube.	
2. Centrifuge for 10 min at 2000Xg or 400Xg if cells are needed	
Supernatant	Cell Pellet
3. Transfer the supernatant into a new 15 mL polypropylene tube.	3. Keep the cell pellet on ice (use right away or store)
4. Aliquot the supernatant.	4. Store at -80°C by snap freezing the cell pellet or by putting it directly in the freezer.
5. Store at -80°C	

8. QUALITY CONTROL / QUALITY ASSURANCE

All the equipment used should be monitored, cleaned and calibrated per their specific SOPs.

Reagents with an expiry date should be monitored and used before this date. If used after expiry date, it should be recorded.

9. APPENDICES/FORMS

9.1 Appendix A – Sample Processing form: CSF