



Mycetoma Grains Storage Standard Operating Procedure

The Mycetoma Research Center Biobank



**The Mycetoma Research Center,
University of Khartoum**

**WHO Collaborating Center
on Mycetoma & Skin NTDs**

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Purpose

To outline the standard procedure for the collection, processing, labeling, and long-term storage of mycetoma grains at the Mycetoma Research Center Biobank to ensure specimen integrity and traceability.

Scope

This SOP applies to all personnel involved in handling, storing, and managing mycetoma grains in the Biobank.



Responsibilities

Biobank Personnel

Responsible for the proper handling, labeling, and storage of samples according to this SOP.

Principal Investigators

Responsible for ensuring that samples are collected, transported, and stored in accordance with this SOP.

Laboratory Technicians

Assist in sample processing and ensure that storage conditions are maintained.



Materials and Equipment

- Sterile containers (e.g., 15 mL or 50 mL conical tubes)
- Personal protective equipment (PPE)
- Labels with unique identification numbers
- Cryogenic vials
- Cryogenic gloves
- Cryopreservation media (if required)
- Ultra-low temperature freezer (-80°C)
- Liquid nitrogen storage system (-196°C) for long-term storage
- Laboratory logbook or electronic database for sample tracking
- Biosafety cabinet (Class II)
- Centrifuge (optional, depending on sample processing)



Collection Procedure

1. Sample Collection

- Collect mycetoma grains aseptically from the patient during surgery or biopsy.
- Place grains in a sterile container and label with patient ID, date of collection, and any additional necessary information (e.g., site of infection).
- Transport samples immediately to the Biobank for further processing.



Collection Procedure

2. Initial Processing

- Upon receipt, inspect the sample for integrity and confirm labeling.
- Clean the grains using sterile normal saline if necessary to remove any debris or contaminating material.
- If required for future molecular analysis, an aliquot may be taken for DNA/RNA extraction and stored separately



Labeling

1. Assigning Unique Identifiers

- Assign a unique Biobank ID number to each mycetoma grain sample.
- Each cryogenic vial should be labeled with the following information:
 - Unique Biobank ID
 - Date of collection
 - Sample type (e.g., grain, DNA, RNA, etc.)
 - Storage conditions (e.g., -80°C or liquid nitrogen)



Labeling

2. Barcoding

- Use barcoding for efficient tracking and retrieval of samples if possible.
- Ensure all barcodes are scanned into the electronic database and cross-referenced with the physical label.



Storage Conditions

1. Short-Term Storage

- Store samples temporarily at -20°C if they cannot be immediately processed.
- Ensure that the sample processing is completed within 24 hours.



Storage Conditions

2. Long-Term Storage

- For long-term preservation, aliquot grains into cryogenic vials and store at:
 - -80°C : Suitable for several years but requires monitoring for temperature fluctuations.
 - Liquid Nitrogen (-196°C): Ideal for indefinite preservation. Use cryo-safe vials and label them appropriately.



Documentation

1. Data Entry

Record all necessary information in the Biobank database, including:

- Patient demographics (with confidentiality maintained)
- Collection date and site
- Sample type and condition
- Storage location
- Aliquot number and volume

Proforma Data Entry

Sr. No :- 2 Date :- 15-Oct-2005

Proforma No :- EXP/SM094 Date :- 05-Oct-2005

Customer :- F2 BODEGRAVEN METAAL N.V. / S.A. Our Bank Name F3:- INDUSIND BANK LIMITED (A/C

Currency used in F7 Euro Item Name F4:- STAINLESS STEEL BRIGHT B/

Grade	Sizes	Type	Length	Tolerances	Heat	No of.	Units	Net Wt.	Gr. Wt. rate	Amount Euro
AISI 304	7.08	MM RD	3.0 / 3.050	h9		10	BUNDLES	10.000	0.000,010.00	20,100.00
AISI 304	8.92	MM RD	3.0 / 3.050	h9		5	BUNDLES	5.000	0.000,010.00	10,050.00
AISI 304	10.72	MM RD	3.0 / 3.050	h9		10	BUNDLES	10.000	0.000,010.00	20,100.00
AISI 304	14.55	MM RD	3.0 / 3.050	h9		12	BUNDLES	12.000	0.000,010.00	24,120.00
AISI 304	18.22	MM RD	3.0 / 3.050	h9		4	BUNDLES	4.000	0.000,010.00	8,040.00
AISI 304	21.91	MM RD	3.0 / 3.050	h9		4	BUNDLES	4.000	0.000,010.00	8,040.00
AISI 316	7.08	MM RD	3.0 / 3.050	h9		3	BUNDLES	3.000	0.000,700.00	11,100.00
AISI 316	8.92	MM RD	3.0 / 3.050	h9		6	BUNDLES	6.000	0.000,700.00	22,200.00
AISI 316	10.72	MM RD	3.0 / 3.050	h9		6	BUNDLES	6.000	0.000,700.00	22,200.00

Net Euro: 145950.00

Less Dis: 0 % 0.00

Total Euro: 145950.00



Documentation

2. Sample Tracking

- Implement a system for tracking sample removal and return.
- Ensure records are updated any time a sample is accessed, used, or transferred for research.



Quality Control

1. Freezer Monitoring

- Monitor ultra-low freezers and liquid nitrogen tanks continuously using automated temperature monitoring systems.
- Maintain regular maintenance logs and ensure backup power systems are functional.



Quality Control

2. Sample Integrity Check

- Periodically check the physical integrity of the stored Mycetoma grains and labels.
- If any deterioration in sample or label is observed, record this in the database and take appropriate action.



Safety and Biosafety

1. Personal Protective Equipment (PPE)

- All personnel handling Mycetoma grains must wear appropriate PPE, including gloves, lab coats, and cryogenic gloves when working with -80°C freezers or liquid nitrogen.



Safety and Biosafety

2. Biosafety Cabinet

- All sample processing steps should be conducted in a biosafety cabinet (Class II) to prevent contamination.



Safety and Biosafety

3. Hazardous Waste

- Dispose of any biological waste, including contaminated media and consumables, in accordance with institutional biosafety protocols.



Sample Retrieval and Usage

1. Requesting Samples

- Researchers must submit a formal request and approval must be granted by the Biobank Manager before samples are accessed.

Lab Request Forms

Purchase Order or Credit Card Type	Client, Agency, Contact & Send Lab Request To	Name	Company/Organization
Project Name or No.	Name	Address	
Client Email	Company/Organization	City, State, ZIP	
Client Phone	Address		
Client FAX			
SAMPLE ID	MEDIA TYPE / SERIAL NO.	DATE SAMPLED	FLOW (L / MIN) (MIN)
			VOLUME (L)
Sampling Data:		Sample ID / Person/Location Monitor	
Start Time	AM / PM	Stop Time	
Collection Sampler		Sampled & Relinquish	



Sample Retrieval and Usage

2. Thawing Samples

When retrieving samples, follow a controlled thawing process:

- Remove cryovials from liquid nitrogen or -80°C freezer.
- Thaw at room temperature or in a 37°C water bath for a short duration (if needed).
- Record the date and time of thawing in the database.



Return of Unused Samples

- If any portion of the sample is unused, it should be returned to the Biobank and stored under appropriate conditions.



Disposal of Samples

1. Expired Samples

- If samples reach their defined shelf-life or are deemed no longer usable, they should be disposed of according to the Biobank's waste management protocols.



Disposal of Samples

2. Documentation of Disposal

- Ensure that disposal of samples is documented and records are updated in the Biobank database.



Audit and Review

1. Annual Audits

- Conduct annual audits of the Biobank storage facilities, including an inventory check to ensure compliance with the SOP.



Audit and Review

2. Review of SOP

- This SOP should be reviewed annually and updated as needed to reflect changes in technology or research requirements.



References

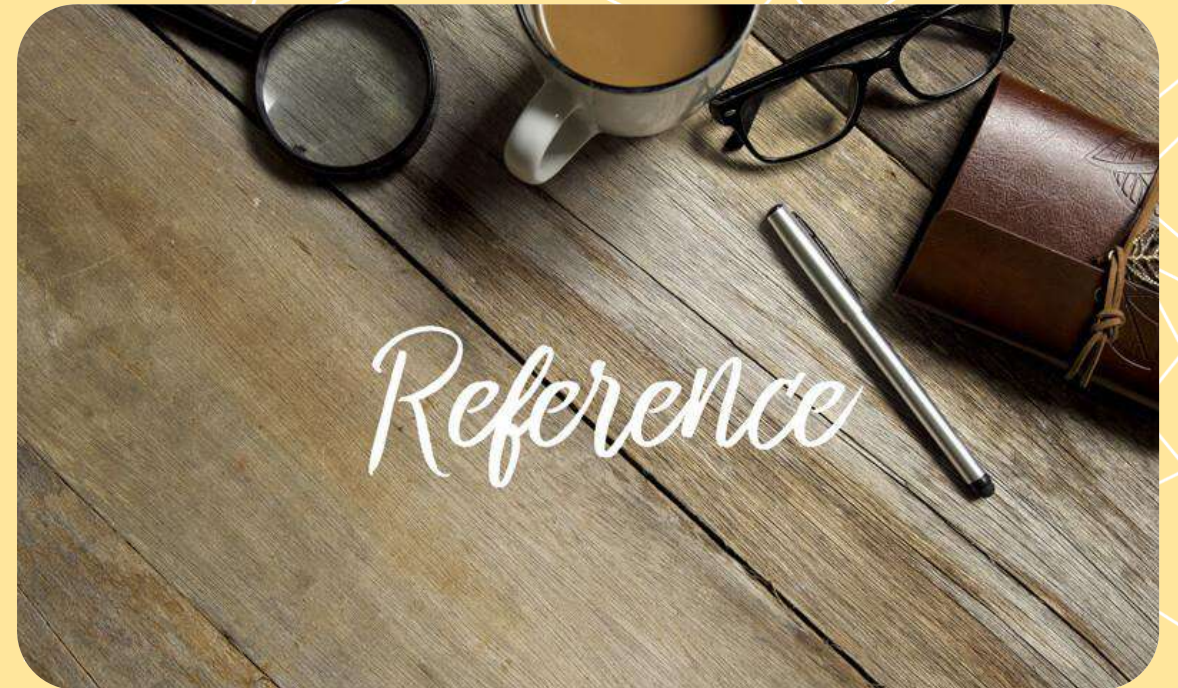
WHO Guidelines for Biobanking

<https://www.iarc.who.int/branches-nme-lsb-research/>

Bayot ML, Limaiem F. Biosafety Guidelines. StatPearls Publishing; 2024 Jan.

<https://www.ncbi.nlm.nih.gov/books/NBK537210/>

Mycetoma Research Center Biobank Guide



Approval

This SOP is approved by the Mycetoma Research Center Director and must be adhered to by all relevant personnel.

Miss Nema Ahmed EL Faki	Research Assistant	<i>Nema</i>
Dr Abdulla Osman	Senior Researcher	<i>abdella</i>
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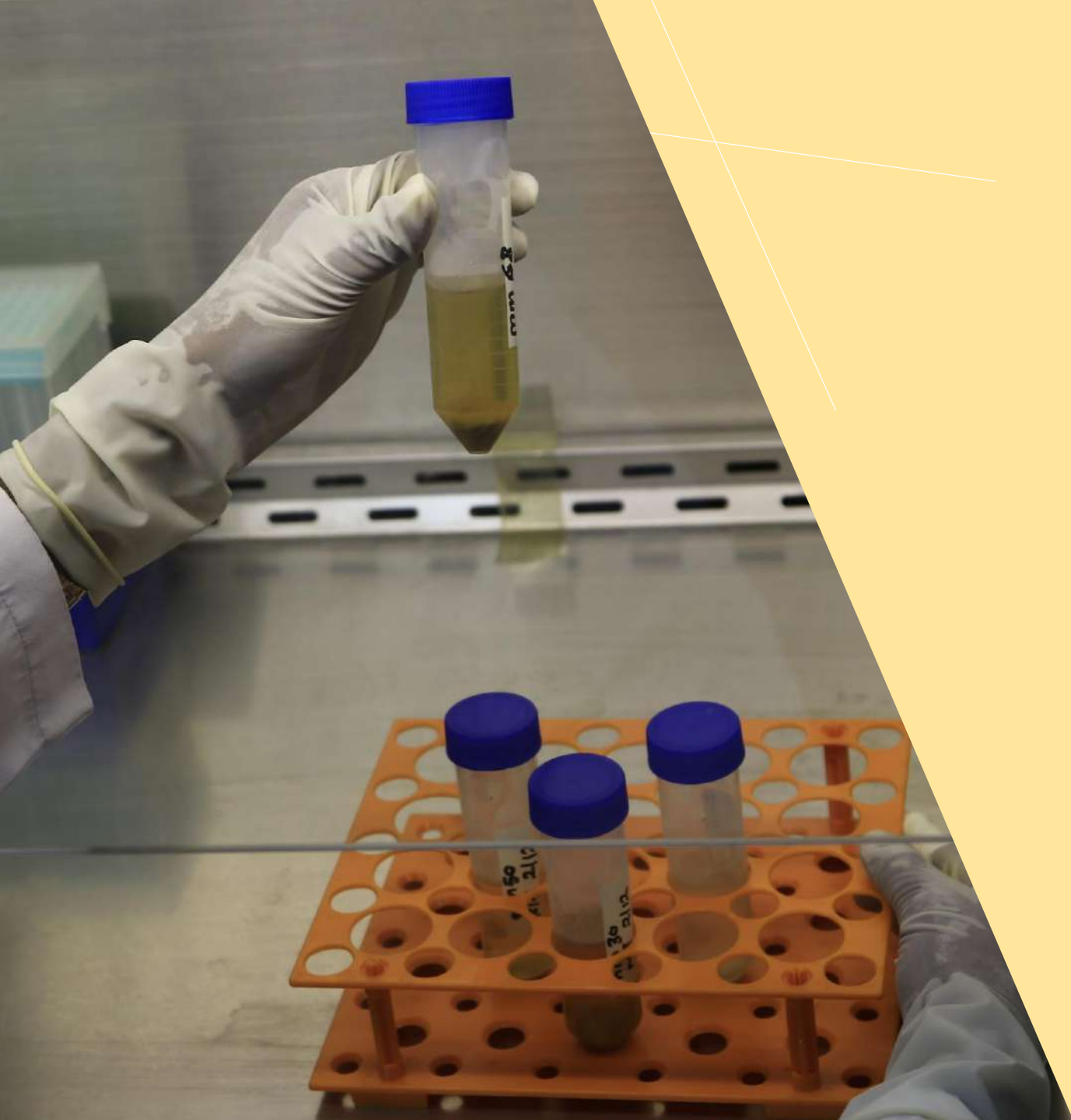
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