



BBMRI.at

Biobanking and
BioMolecular resources
Research Infrastructure
Austria

Defining and Capturing Process Quality in RD-Connect

Heimo Müller, Robert Reihls

Berlin, 19 February 2015

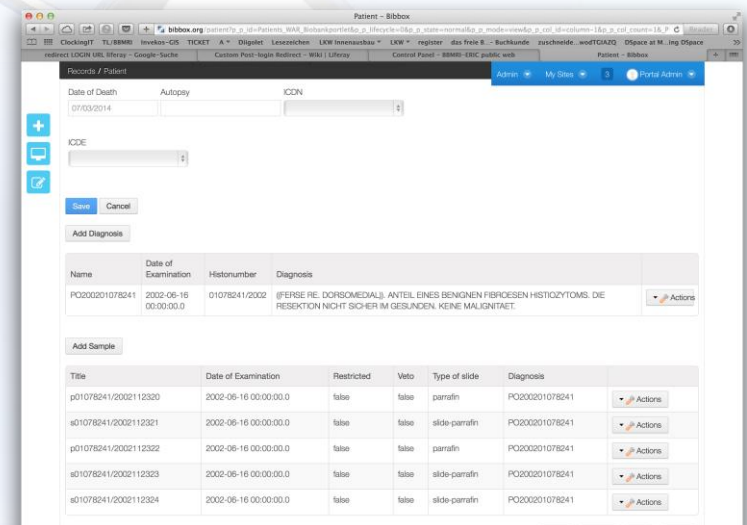
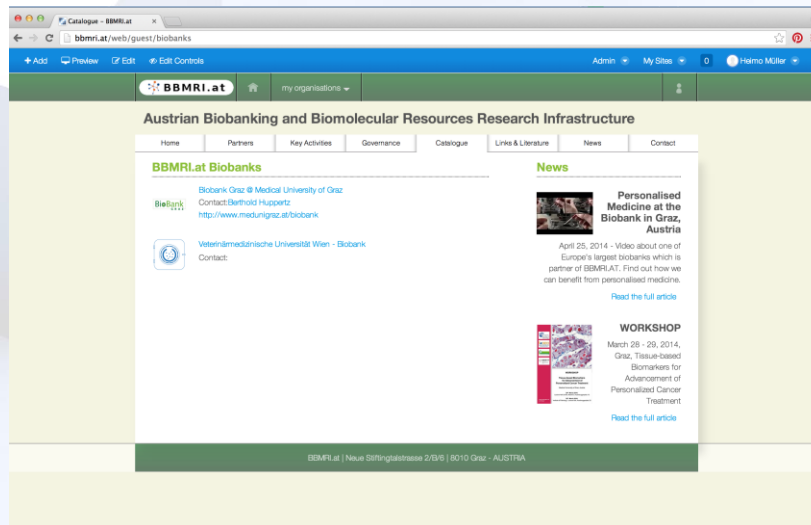
catalogue.rd-connect.eu
www.bbmri.at

Objectives

- ❑ To build a map of RD biobanks starting from European biobank networks already established with EU support and large networks outside Europe
- ❑ To provide a common portal (ID card) for biobanks and registries
- ❑ Motivate biobanks and registries to **self-maintain their ID card**
- ❑ Analyse questionnaires
- ❑ Provide an interface (human and **machine readable**) to the database

Current ID-Card Portal

- Software Components from different projects
 - **RD-Connect**, **BBMRI.at**, **BBMRI-LPC**, **BioMedBridges**, **BibBoX**



Mapping of RD-Connect

- **Mapping of 2074 registries and 608 biobanks from several sources done**
EuroBioBank, BBMRI, Orphanet,, Neuromics, Epirare, Eurocat, SCNIR,hqip, cordis, treat nmd, edfs,
- **Remove duplicates and review unified list:
981 registries / 506 biobanks**
- **ID Card System with a Core Implementation Group (CIG)**
- **Roll-Out started end of October 2014 with first Biobanks and Registreis**
 - **94 Registries Invited**
 - **Biobank Panel Assessment established**

Current ID-Card Portal

The screenshot shows a web browser window displaying the BBMRI.at ID-Card Portal. The browser tabs include 'bb_Home - BBMRI.at', 'Dr. Karine Sargsyan - labo', and 'Medizinische Universität G'. The address bar shows the URL: bbmri.at/web/medizinische-universitat-graz/bb_home?p_auth=l3r0GBsk&p_p_id=people_WAR_RDConnectportlet&p_p_lifecycle=1&p_p_state=normal&p_p_mode=view&p_p_col_i...

The page header features the BBMRI.at logo, a home icon, 'my organisations', and a user profile for 'Helmo Müller'. The main content area displays the ID-Card for Biobank Graz @ Medical University of Graz. The card includes the following information:

- ID # 138502
- Date of Inclusion: 13/05/2014
- Last Activities: 30/06/2014
- Logo: **BioBank GRAZ**
- Host Institution: **Biobank Graz @ Medical University of Graz**
- URL: <http://www.medunigraz.at/biobank>
- Host Institution Address: Neue Stiftingtalstraße 2, 8010 Graz, Austria
- Host Institution Phone: Tel. +43-316-385-72716
- Main contact: Karine Sargsyan, karine.sargsyan@medunigraz.at

The mission of the Biobank Graz is to support research on the cause of diseases and the development of improvements in disease diagnosis and treatment. Navigation tabs include Home, Collections, SOPs, and Documents.

Overview

Biobank Graz @ Medical University of Graz

Acronym: **BB-MUG**
Type of Host Institution: **Hospital**
Source of funding:
Year of establishment: **2001**
Target population: **Regional**
RD coverage:
Also listed in: **Orphanet, BBMRI**
Standard ontology for phenotypic data collection: **yes, more than one**
Name of Ontologies used: **Human Phenotype Ontology (HPO)**
Biomaterial available: **blood, plasma, tissues, saliva**
Imaging available: **Not applicable**

The mission of the Biobank Graz, a central facility of the Medical University of Graz, is to

People

- Your request completed successfully.
- Berthold Huppertz, Director
- editor bbmri.at
- Robert Primtschitz, Information Technology
- Karine Sargsyan, Management

The browser window shows a file 'Dr.KarineSargsyan.jpg' and a button 'Alle einblenden'.

RD-Connect ID-Card

- Overview of all Registries/Biobanks in the Catalogue
- Recent activities of Registries/Biobanks
- Search for Disease codes
 - ORPHA52
 - Dent disease

Current ID-Card Portal

The mission of the Biobank Graz, a central facility of the Medical University of Graz, is to support research on the cause of diseases and the development of improvements in disease diagnosis and treatment.

[Home](#) [Collections](#) [SOPs](#) [Documents](#)

Neue Stiftingtalstraße 2
8010 Graz
Austria
Tel. +43-316-385-72716

Main contact
Karine Sargsyan
karine.sargsyan@medunigraz.at

Collections

Tissue Collection Pathology - TC.patho [edit](#) [details](#)

name of sample collection:	Tissue Collection Pathology
acronym:	TC.patho
description of sample collection:	The tissue collection, residing at the Institute of Pathology at the University of Graz, Austria, contains more than 1.4 million paraffin-embedded and more than ...
url:	
BRIF id of sample collection:	
type of sample collection:	longitudinal
Origin of Samples:	Institute of Pathology
Contact Person:	Karine Sargsyan
Name	
Role	Director
Phone	+43-316-380-7604
e-mail	
Organization	Medical University of Graz
Department	Biobank
Address	Neue Stiftingtalstraße 2
ZIP	8010

Dr.KarineSargsyan.jpg [Alle einblenden](#)

Current ID-Card Portal

The screenshot shows a web browser window with the URL `bbmri.at/web/medizinische-universitat-graz/bb_sops`. The page features a navigation menu with 'SOPs' highlighted in a red circle. A 'Main contact' section for Karine Sargsyan is visible. The main content area is titled 'Standard Operating Procedures' and includes a button to 'Add SOP pre-examination processes for FFPE tissue – RNA'. Below this, a section for 'Pre-examination processes V 2.3' (id:143847) is shown, detailing various SOP steps and their completion status.

the development of improvements in disease diagnosis and treatment.

Home Collections **SOPs** Documents

Main contact
Karine Sargsyan
karine.sargsyan@medunigraz.at

Standard Operating Procedures

+ Add SOP pre-examination processes for FFPE tissue – RNA

Pre-examination processes V 2.3
[id:143847](#) [edit](#) - [detail](#)

SOP name: Pre-examination processes V 2.3

1. OUTSIDE THE LABORATORY

1.1 Primary tissue collection manual

Information about the primary sample donor

the health status of the primary sample donor (e.g., healthy, disease type, concomitant disease);	Not Specified
the information about routine medical treatment and special treatment prior to tissue collection (e.g., anaesthetics, medications, surgical or diagnostic procedures (e.g., biopsy device used for the collection));	Not Specified
the time of ischemia within the body (warm ischemia) by recording ischemia-relevant vessel ligation/clamping (usually arterial clamping time).	Unknown

Information on the primary tissue sample

the time point when tissue is removed from the body	Not Specified
if applicable, time when the specimen is placed into formalin solution	Specified
the description of tissue type, tissue condition (e.g., diseased, unaffected by the disease) and collection site, including references to any marking applied in the operating theatre made by surgeon or radiologist	Specified

Information on the primary tissue sample processing

the recording of any additions or modifications to the primary sample after removal from the body (e.g., labelling for the orientation of the specimen (e.g.,	Specified
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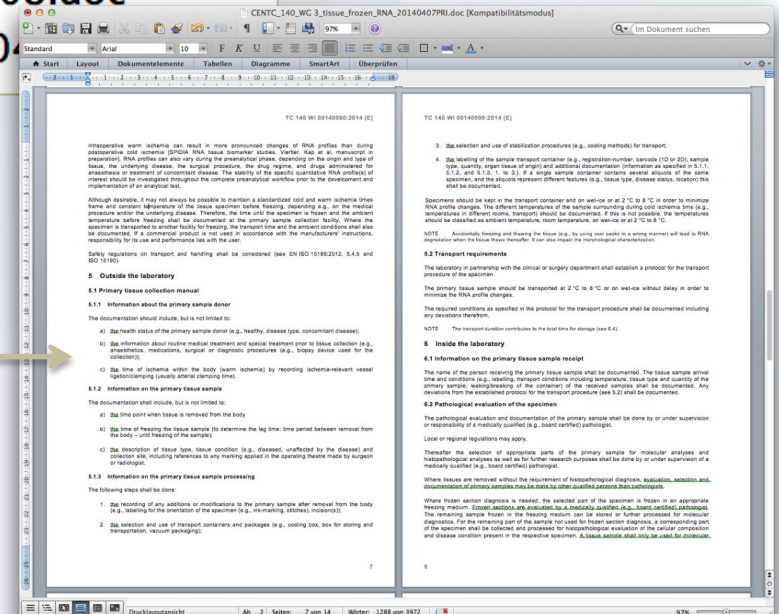
Dr.KarineSargsyan.jpg

Alle einblenden

SOP-Mapping

□ CEN Standards

- CENTC_140_tissue_FFPE-protein_LL_20140408.doc
- CENTC_140_tissue_protein-cryo_20140408.doc
- CENTC_140_WG 3_blood_cellular RNA_20140206.doc
- CENTC_140_WG 3_blood_genomic DNA_20140206.doc
- CENTC_140_WG 3_tissue_FFPE_DNA_20140206.doc
- CENTC_140_WG 3_tissue_FFPE_RNA_20140408.doc
- CENTC_140_WG 3_tissue_frozen_RNA_20140408.doc



SOP-Mapping

□ ENTC_140_WG 3_tissue_frozen_RNA_

Headings

TC 140 WI 00140090:2014 (E)

intraoperative warm ischemia can result in more pronounced changes of RNA profiles than during postoperative cold ischemia (SPIDIA RNA tissue biomarker studies; Vierler, Kap et al; manuscript in preparation). RNA profiles can also vary during the preanalytical phase, depending on the origin and type of tissue, the underlying disease, the surgical procedure, the drug regime, and drugs administered for anaesthesia or treatment of concomitant diseases. The stability of the specific quantitative RNA profile(s) of interest should be investigated throughout the complete preanalytical workflow prior to the development and implementation of an analytical test.

Although desirable, it may not always be possible to maintain a standardized cold and warm ischemia times frame and constant temperature of the tissue specimen before freezing, depending e.g., on the medical procedure and/or the underlying disease. Therefore, the time until the specimen is frozen and the ambient temperature before freezing shall be documented at the primary sample collection facility. Where the specimen is transported to another facility for freezing, the transport time and the ambient conditions shall also be documented, if a commercial product is not used in accordance with the manufacturer's instructions, availability for its use and performance lies with the user.

Safe regulations on transport and handling shall be considered (see EN ISO 15189:2012, 5.4.5 and ISO 15189:2013, 5.4.5).

5 Outside the laboratory

5.1 Primary tissue collection manual

5.1.1 Information about the primary sample donor

The documentation should include, but is not limited to:

- the health status of the primary sample donor (e.g., healthy, disease type, concomitant diseases);
- the information about routine medical treatment and special treatment prior to tissue collection (e.g., anaesthetics, medications, surgical or diagnostic procedures (e.g., biopsy device used for the collection));
- the time of ischemia within the body (warm ischemia) by recording ischemia-relevant vessel ligation/clamping (usually arterial clamping time).

5.1.2 Information on the primary tissue sample

The documentation shall include, but is not limited to:

- the time point when tissue is removed from the body
- the time of freezing the tissue sample (to determine the lag time: time period between removal from body – until freezing of the sample).

the description of tissue type, tissue condition (e.g., diseased, unaffected by the disease) and collection site, including references to any marking applied in the operating theatre made by surgeon or radiologist.

5.1.3 Information on the primary tissue sample processing

The following steps shall be done:

- the recording of any additions or modifications to the primary sample after removal from the body (e.g., labelling for the orientation of the specimen (e.g., ink-marking, stitches), incision(s));
- the selection and use of transport containers and packages (e.g., cooling box, box for storing and transportation, vacuum packaging);

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TC 140 WI 00140090:2014 (E)

- the selection and use of stabilization procedures (e.g., cooling methods) for transport;
- the labelling of the sample transport container (e.g., registration-number, barcode (1D or 2D), sample type, quantity, organ tissue of origin) and additional documentation (information as specified in 5.1.1, 5.1.2, and 5.1.3, 1. to 3.); if a single sample container contains several aliquots of the same specimen, and the aliquots represent different features (e.g., tissue type, disease status, location) this shall be documented.

Specimens should be kept in the transport container and on wet-ice or at 2 °C to 8 °C in order to minimize RNA profile changes. The different temperatures of the sample surrounding during cold ischemia time (e.g., temperatures in different rooms, transport) should be documented, if this is not possible, the temperatures should be classified as ambient temperature, room temperature, on wet-ice or at 2 °C to 8 °C.

NOTE Accidentally freezing and thawing the tissue (e.g., by using cool packs in a wrong manner) will lead to RNA degradation when the tissue thaws thereafter. It can also impact the morphological characterization.

5.2 Transport requirements

The laboratory in partnership with the clinical or surgery department shall establish a protocol for the transport procedure of the specimen.

The primary tissue sample should be transported at 2 °C to 8 °C or on wet-ice without delay in order to minimize the RNA profile changes.

The required conditions as specified in the protocol for the transport procedure shall be documented including any deviations therefrom.

NOTE The transport duration contributes to the total time for storage (see 6.4).

6 Inside the laboratory

6.1 Information on the primary tissue sample receipt

The name of the person receiving the primary tissue sample shall be documented. The tissue sample arrival time and conditions (e.g., labelling, transport conditions including temperature, tissue type and quantity) of the primary sample, labelling/breaking of the container) of the received samples shall be documented. Any deviations from the established protocol for the transport procedure (see 5.2) shall be documented.

6.2 Pathological evaluation of the specimen

The pathological evaluation and documentation of the primary sample shall be done by or under supervision or responsibility of a medically qualified (e.g., board certified) pathologist.

Local or regional regulations may apply.

Thereafter the selection of appropriate parts of the primary sample for molecular analyses and histopathological analyses as well as for further research purposes shall be done by or under supervision of a medically qualified (e.g., board certified) pathologist.

Where tissues are removed without the requirement of histopathological diagnosis, evaluation, selection and documentation of primary samples may be done by other qualified persons than pathologists.

Where frozen section diagnosis is needed, the selected part of the specimen is frozen in an appropriate freezing medium. Frozen sections are evaluated by a medically qualified (e.g., board certified) pathologist. The remaining sample frozen in the freezing medium can be stored or further processed for molecular diagnostics. For the remaining part of the sample not used for frozen section diagnosis, a corresponding part of the specimen shall be collected and processed for histopathological evaluation of the cellular composition and disease condition present in the respective specimen. A tissue sample shall only be used for molecular.

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Drucklayoutansicht Ab 2 Seiten: 7 von 14 Wörter: 1288 von 3972 97%

SOP-Mapping

□ Heading / Structure of the CEN Standard

Table 1 – SOP information categories: pre-examination processes for frozen tissue to RNA



Documentation / Information Category	Attribute Category
Information about the primary sample donor <ul style="list-style-type: none"> the health status of the primary sample donor (e.g., healthy, disease type, concomitant disease); the information about routine medical treatment and special treatment prior to tissue collection (e.g., anaesthetics, medications, surgical or diagnostic procedures (e.g., biopsy device used for the collection)); the time of ischemia within the body (warm ischemia) by recording ischemia-relevant vessel ligation/clamping (usually arterial clamping time). 	NS/GPS/GS NS/DFS
Information on the primary tissue sample <ul style="list-style-type: none"> the time point when tissue is removed from the body the time of freezing the tissue sample (to determine the lag time: time period between removal from the body – until freezing of the sample); the description of tissue type, tissue condition (e.g., diseased, unaffected by the disease) and collection site, including references to any marking applied in the operating theatre made by surgeon or radiologist. 	NS/GPS/GS NS/DFS NS/DFS
Information on the primary tissue sample processing <ul style="list-style-type: none"> the recording of any additions or modifications to the primary sample after removal from the body (e.g., labelling for the orientation of the specimen (e.g., ink-marking, stitches), incision(s)); the selection and use of transport containers and packages (e.g., cooling box, box for storing and transportation, vacuum packaging); the selection and use of stabilization procedures (e.g., cooling methods) for transport; the labelling of the sample transport container (e.g., registration-number, barcode (1D or 2D), sample type, quantity, organ tissue of origin) and additional documentation If a single sample container contains several aliquots of the same specimen, and the aliquots represent different features (e.g., tissue type, disease status, location) this shall be documented. 	NS/GPS/GS NS/DFS NS/DFS NS/DFS
Transport requirements <ul style="list-style-type: none"> The laboratory in partnership with the clinical or surgery department shall establish a protocol for the transport procedure of the specimen. The primary tissue sample should be transported at 2 °C to 8 °C or on wet-ice without delay in order to minimize the RNA profile changes. The required conditions as specified in the protocol for the transport procedure shall be documented including any deviations therefrom 	NS/GPS/GS NS/DFS NS/DFS/VS NS/DFS
Information on the primary tissue sample receipt <ul style="list-style-type: none"> The name of the person receiving the primary tissue sample shall be documented. The tissue sample arrival time and conditions (e.g., labelling, transport conditions including temperature, tissue type and 	NS/GPS/GS NS/DFS NS/DFS

<ul style="list-style-type: none"> quantity of the primary sample, leaking/breaking of the container) of the received samples shall be documented. Any deviations from the established protocol for the transport procedure shall be documented. 	NS/DFS
Pathological evaluation of the specimen <ul style="list-style-type: none"> The pathological evaluation and documentation of the primary sample shall be done by or under supervision or responsibility of a medically qualified (e.g., board certified) pathologist. Thereafter the selection of appropriate parts of the primary sample for molecular analyses and histopathological analyses as well as for further research purposes shall be done by or under supervision of a medically qualified (e.g., board certified) pathologist. Where tissues are removed without the requirement of histopathological diagnosis, evaluation, selection and documentation of primary samples may be done by other qualified persons than pathologists. Where frozen section diagnosis is needed, the selected part of the specimen is frozen in an appropriate freezing medium. Frozen sections are evaluated by a medically qualified (e.g., board certified) pathologist. The remaining sample frozen in the freezing medium can be stored or further processed for molecular diagnostics. For the remaining part of the sample not used for frozen section diagnosis, a corresponding part of the specimen shall be collected and processed for histopathological evaluation of the cellular composition and disease condition present in the respective specimen. A tissue sample shall only be used for molecular testing after histopathological characterization of its cellular composition, disease condition and preservation status by a medically qualified (e.g., board certified) pathologist. 	NS/GPS/GS NS/DFS NS/DFS NS/DFS
Cryo-preservation of the specimen <ul style="list-style-type: none"> the recording of freezing procedure (e.g., freezing in liquid nitrogen, snap-freezing in isopentane cooled by liquid nitrogen or dry ice, freezing in an appropriate freezing medium, freezing with controlled cooling rate); the recording of freezing time point; the tissue size determines the size of the container and the sample should not exceed 1 cm in one dimension; the selection of the sample container for cr30-storage the labelling shall be suitable for the respective frozen storage conditions the labelling of the cr30-storage container shall contain the minimum information of (a) the patient ID, which can be in the form of a code; the basic information on e.g., the tissue type, tissue and disease condition such as affected (e.g., tumor) or unaffected, unless a sample tracking system can supply this information coupled to the identification of the sample used in 	NS/GPS/GS NS/DFS NS/DFS NS/DFS/VS NS/DFS NS/DFS
Storage requirements <ul style="list-style-type: none"> The constant temperature shall be below -70 °C. Systems monitoring the temperature should be used. 	NS/GPS/GS NS/DFS/VS

SOP-Mapping

□ Description of groups of attributes (sections)

NS=non specified

GPS=group partialy, specified

GS=group specified.

□ Description of items within groups

NS= non specified

DFS=data field given

VS=value specified

Table 1 – SOP information categories: pre-examination processes for frozen tissue to RNA



Documentation /Information Category	Attribute Category
Information about the primary sample donor <ul style="list-style-type: none"> the health status of the primary sample donor (e.g., healthy, disease type, concomitant disease); the information about routine medical treatment and special treatment prior to tissue collection (e.g., anaesthetics, medications, surgical or diagnostic procedures (e.g., biopsy device used for the collection)); the time of ischemia within the body (warm ischemia) by recording ischemia-relevant vessel ligation/clamping (usually arterial clamping time). 	NS/GPS/GS NS/DFS NS/DFS NS/DFS
Information on the primary tissue sample <ul style="list-style-type: none"> the time point when tissue is removed from the body the time of freezing the tissue sample (to determine the lag 	NS/GPS/GS NS/DFS NS/DFS

SOP-Mapping within ID-Card

- Describe your SOPs within ID-card portal

Home
Collections
SOPs
Documents

Main contact
 Karine Sargsyan
karine.sargsyan@medunigraz.at

Standard Operating Procedures

Pre-examination processes V 2.3

id:143847 [edit](#) - [detail](#)

SOP name: Pre-examination processes V 2.3

1. OUTSIDE THE LABORATORY

1.1 Primary tissue collection manual

Information about the primary sample donor

the health status of the primary sample donor (e.g., healthy, disease type, concomitant disease);	Not Specified
the information about routine medical treatment and special treatment prior to tissue collection (e.g., anaesthetics, medications, surgical or diagnostic procedures (e.g., biopsy device used for the collection));	Not Specified
the time of ischemia within the body (warm ischemia) by recording ischemia-relevant vessel ligation/clamping (usually arterial clamping time).	Unknown

Information on the primary tissue sample

SOP-Mapping within ID-Card

- (Easy) editing by biobank editors

if applicable, time when the specimen is placed into formalin solution

Specified

the description of tissue type, tissue condition (e.g., diseased, unaffected by the disease) and collection site, including references to any marking applied in the operating theatre made by surgeon or radiologist

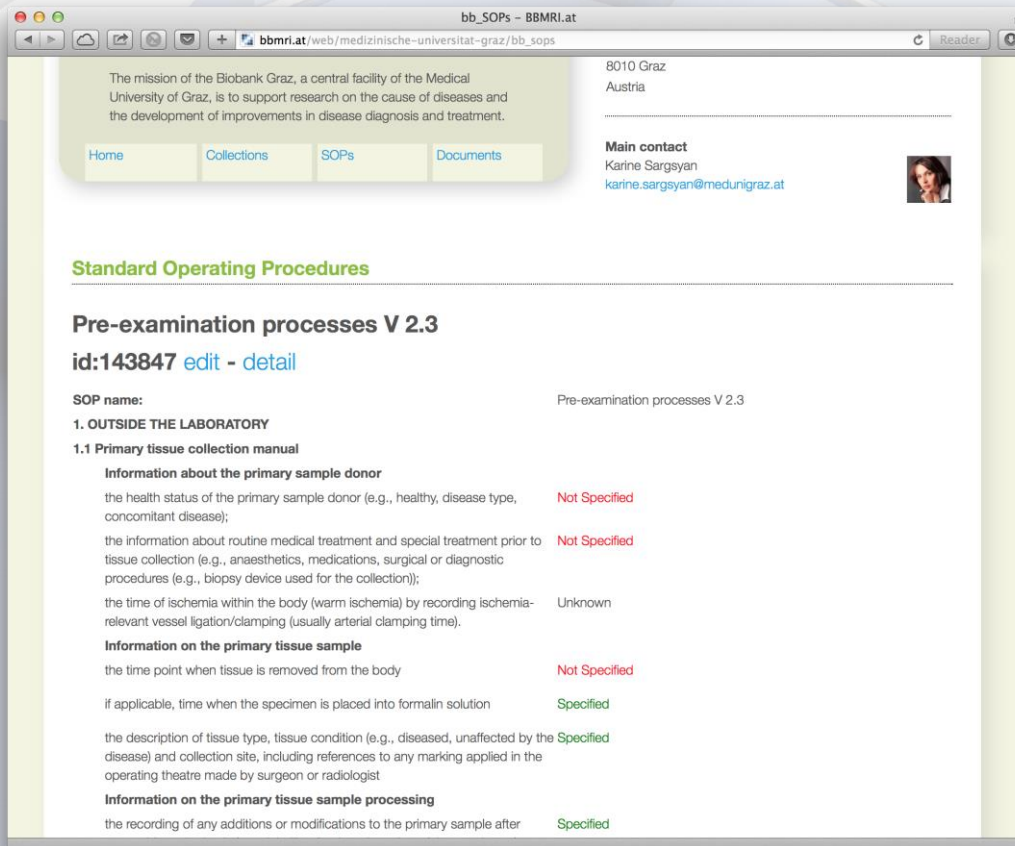
✓ Specified
Not Specified
Unknown

the recording of any additions or modifications to the primary sample after removal from the body (e.g., labelling for the orientation of the specimen (e.g., ink-marking, stitches), incision(s))

Specified

SOP-Mapping within ID-Card

- Beta Test ongoing within the RD-Connect ID card and the BBRMI.at Portal
- SOP mapping can be connected to collections / sample descriptions



The screenshot shows a web browser window with the URL `bbmri.at/web/medizinische-universitat-graz/bb_sops`. The page content includes:

- Mission Statement:** The mission of the Biobank Graz, a central facility of the Medical University of Graz, is to support research on the cause of diseases and the development of improvements in disease diagnosis and treatment.
- Navigation:** Home, Collections, SOPs, Documents.
- Contact Information:** 8010 Graz, Austria. Main contact: Karine Sargsyan, karine.sargsyan@medunigraz.at.
- Section Header:** Standard Operating Procedures
- Current SOP:** Pre-examination processes V 2.3 (id:143847 [edit](#) - [detail](#))
- SOP name:** Pre-examination processes V 2.3
- 1. OUTSIDE THE LABORATORY**
 - 1.1 Primary tissue collection manual**
 - Information about the primary sample donor**
 - the health status of the primary sample donor (e.g., healthy, disease type, concomitant disease); **Not Specified**
 - the information about routine medical treatment and special treatment prior to tissue collection (e.g., anaesthetics, medications, surgical or diagnostic procedures (e.g., biopsy device used for the collection)); **Not Specified**
 - the time of ischemia within the body (warm ischemia) by recording ischemia-relevant vessel ligation/clamping (usually arterial clamping time); **Unknown**
 - Information on the primary tissue sample**
 - the time point when tissue is removed from the body; **Not Specified**
 - if applicable, time when the specimen is placed into formalin solution; **Specified**
 - the description of tissue type, tissue condition (e.g., diseased, unaffected by the disease) and collection site, including references to any marking applied in the operating theatre made by surgeon or radiologist; **Specified**
 - Information on the primary tissue sample processing**
 - the recording of any additions or modifications to the primary sample after; **Specified**

SOP-Mapping

- **Get an overview of the structure of the SOPs used (what is defined)**
- **Compare Collections on the collection process**
- **Quality improvement indicator for a biobank/network**

Next Steps

- **Extend the information collected on values (licensing?)**
- **Create SOPs out of the entered data**
- **Compare SOPs structured in the same way**

THANK YOU!

- Peter, Marco, Lucia, Peter, Moris, David, Roxanna (WP3)
- Sabina, Paola, Gaelle, Estrella, Domenica, Filippo, Luca (WP2)
- Horst (BBMRI)