

BBMRI.at

Biobanking and
BioMolecular resources
Research Infrastructure
Austria

TMF-Workshop Catalogue of Austrian Biobanks

Horst Pichler



Bundesministerium für
Wissenschaft, Forschung und Wirtschaft

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BBMRI.at Partners



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Medical University of Graz



Biobank Graz



Medical University of Vienna



MedUni Wien Biobank



University of Veterinary Medicine, Vienna



VetBioBank



Medical University of Innsbruck

MUI Biobank

MUI Biobank



Alpen Adria Universität Klagenfurt



Life Science Governance Institute, Vienna



BBMRI.at Workpackage 2



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WP2 – Standardization and harmonization of data management and the biobanking catalog

WPL: Johann Eder, AAU Klagenfurt

Team and partners

- Horst Pichler, AAU
- Heimo Müller, MUG
- Robert Reihs, MUG
- Georg Göbel, MUI
- Andreas Jurkowitsch, MUW
- Karine Sargsyan, MUG Biobank
- Manuel Schrott, VetMed

Accomplishments 2014

- specification of a harmonized data schema for biobanks and their collections (+mappings to MIABIS 2.0)
- development of the BBMRI.at-platform
- development of the Austrian Biobank Catalogue
- 1st set of data of associated biobanks and collections

Levels of Biobank Information



- 1 – basic information on biobanks
completed
- 2 – information on sub/collections and studies
in progress
- 3 – information on samples, donors, molecular data
in discussion

BBMRI.at Platform - Liferay




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BBMRI.AT ● **FOR RESEARCHERS** ■ FOR CITIZENS ■ NEWS ■ CONTACT

BIOBANK CATALOGUE WIKI

 **Biobank Graz**
Contact: Berthold Huppertz

 **MUI Biobank**
Contact: Georg Göbel

 **VetBioBank**
Contact: Ingrid Walter

 **MedUni Wien Biobank**
Contact: Helmuth Haslacher

BBMRI.at is developing a "Catalogue of Austrian Biobanks" which shall provide an overview of the Austrian Biobanks and their collections of biomaterial and associated data. Providing insight for researchers into the contents of biobanks is an important step towards a biobanking research infrastructure.

The level of detail on the information on biobanks will be increased in a step wise manner during the funding period of BBMRI.at.

- In the first level basic information on biobanks are provided (completed).
- The second level contains information on collections and sub-collections (studies) which are held by the biobanks (in progress).
- The third level contains information on individual samples and the associated donor-related information as well as molecular data generated by analysis of samples.

The first version of this catalogue is now available and contains basic information on biobanks and a first set of data on collections and sub-collections.
Click on logos or names of the BBMRI.at-associated biobanks to view details.

BBMRI.at | Neue Stiftingtalstrasse 2/B/6, 8010 Graz - AUSTRIA Login

Biobank ID-Cards



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bbMRI.at/web/biobank-graz-medical-university-of-graz/bb_home

BBMRI.at my organisations

ID # 12786 Date of Inclusion: 25/07/2014 Last Activities: 12/11/2014

BioBank GRAZ Biobank Graz

<http://www.medunigraz.at/biobank>

Address
Biobank Graz
Neue Stiftingtalstrasse 2/B/2
8010 Graz
Austria

Tel: +43316385-72716
Fax: +43316385-72731

Home Collections Documents

Overview

Biobank Graz
View the semantics of fields.
Acronym: **MUG Biobank Graz**
Type of Host Institution: **University**
Source of funding: **public**
Target population: **Local** (i.e.: Hospital, Primary healthcare centre,...)
Year of establishment: **2007**
Registered Users:
RD coverage:
Ontologies used:
Biomaterial available: **Whole blood, Plasma, Serum, Urine, CSF, Tissue-FPPE, Tissue-Frozen, Faeces, Others**
Imaging available: **Not applicable**
Also listed in: **BBMRI-ERIC, ESBB**

People

Main contact
Berthold Huppertz
Coordinator/Principal Investigator, Management
berthold.huppertz@medunigraz.at

Expert
Karinne Sargayan
Management
Robert Primtschitz
IT Expert
Petra Story
Management
Michaela Bayer
Skaiste Riegler

BBMRI.at | Neue Stiftingtalstrasse 2/B/6 | 8010 Graz - AUSTRIA

1 ID # 17806 Date of Inclusion: 15/09/2014 Last Activities: 15/09/2014

Test Biobank Edit name and logo by clicking on the pen-symbol

2 Edit short description
Test Biobank has been established in Sept. 2014 and serves as a demo biobank for data input.

3 Edit short description and other basic information

4 Home Collections Documents

5 Documents

Overview Edit short description and other basic information

Test Biobank
Type of Host Institution: **University**
Source of funding:
Year of establishment: **2014**
Target population: **Regional**
Standard ontology for phenotypic data collection: **yes, one**
Name of Ontologies used:
Biomaterial available: **blood, plasma, tissues, saliva**
Imaging available: **Histopathology/digital microscopy, MRI**
Test Biobank has been established in Sept. 2014 and serves as a demo biobank for data input.

People Edit people (add, delete, assign role, upload pictures)

Main contact
Cornelia Stumptner
Coordinator/Principal Investigator
cornelia.stumptner@medunigraz.at

Expert / Add User
Robert Reihls
Coordinator/Principal Investigator
Petra Story
Scientific Expert

6 Edit URL
<http://www.bbMRI.at>

7 Edit address
Host Institution
Test Biobank
Biobankstrasse
8010 Graz
Austria

8 Edit tel./fax
Tel: 433163851111-234

Collections and Subcollections



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ID # 12786 Date of Inclusion: 26/07/2014 Last Activities: 12/11/2014



BioBank Graz

The mission of Biobank Graz is to support research on the cause of diseases and the development of improvements in disease diagnosis and treatment.

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

<http://www.medunigraz.at/biobank>

Address

Biobank Graz
Neue Stiftingalstrasse 2/B/2
8010 Graz
Austria

Tel: +43316385-72716

Fax: +43316385-72731

Collections



Animal samples - Mouse

Type:
Sampletype:
Number of Donors: 0
Number of Samples: 0
- Mouse strain 129S2/SvPasCrI
- Mouse strain C57BL/6NCrI
- Mouse strain CrI:CD1(ICR)

Dermatology and Venereology

Type:
Sampletype:
Number of Donors: 0
Number of Samples: 0

Gynecology

Type:
Sampletype:
Number of Donors: 0
Number of Samples: 0

Biobank Graz > Urology tissue samples

SUB COLLECTION INFORMATION

[Home](#) [Subcollections](#) [Disease Matrix](#) [Material Matrix](#)

Number of Sub-Collections: 8
Number of Donors (including Sub-Collections): 1444
Number of Samples (including Sub-Collections): 4210
Number of Aliquots (including Sub-Collections): 5887
Last Activities: 10/02/2015

Urology tissue samples



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

Collection Information

[View the semantics of fields.](#)

Urology tissue samples -


Acronym (MIABIS 10):
Description (MIABIS 12):
Sex (MIABIS 13): Male Female
Age low (MIABIS 14):
Age high (MIABIS15):
Age unit (MIABIS 16): not specified
Data categories (MIABIS 17): Biological samples
Material type (MIABIS 18): not specified
Storage temperature (MIABIS 19): not specified
Collection type (MIABIS 20): Population-based Disease specific
Disease (MIABIS 21):
Disease Ontology (MIABIS 21A):
Disease Ontology Version (MIABIS 21B)
Disease Ontology Code (MIABIS 21C)
Disease Ontology Description (MIABIS 21D):

People



Main contact

Expert

 Petra Story

Materials and Diseases



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Material Matrix

Keywords Search

Material Type	Specify other Material Type	Storage Temp	Storage Format	Specify other Storage Format	Number of Samples	Number of Total Aliquots	Spec Code	Accessibility
Tissue-Frozen	Inflammation	Liquid Nitrogen	Tubes / Vials					Access is possible in controlled international environments/pr
Tissue-Frozen	Tumour	Liquid Nitrogen	Tubes / Vials					Access is possible in controlled international environments/pr
Tissue-Frozen	Neoplasia	Liquid Nitrogen	Tubes / Vials					Access is possible in controlled international environments/pr
Tissue-Frozen	Normal tissue	Liquid Nitrogen	Tubes / Vials					Access is possible in controlled international environments/pr

Disease Matrix

Keywords Search

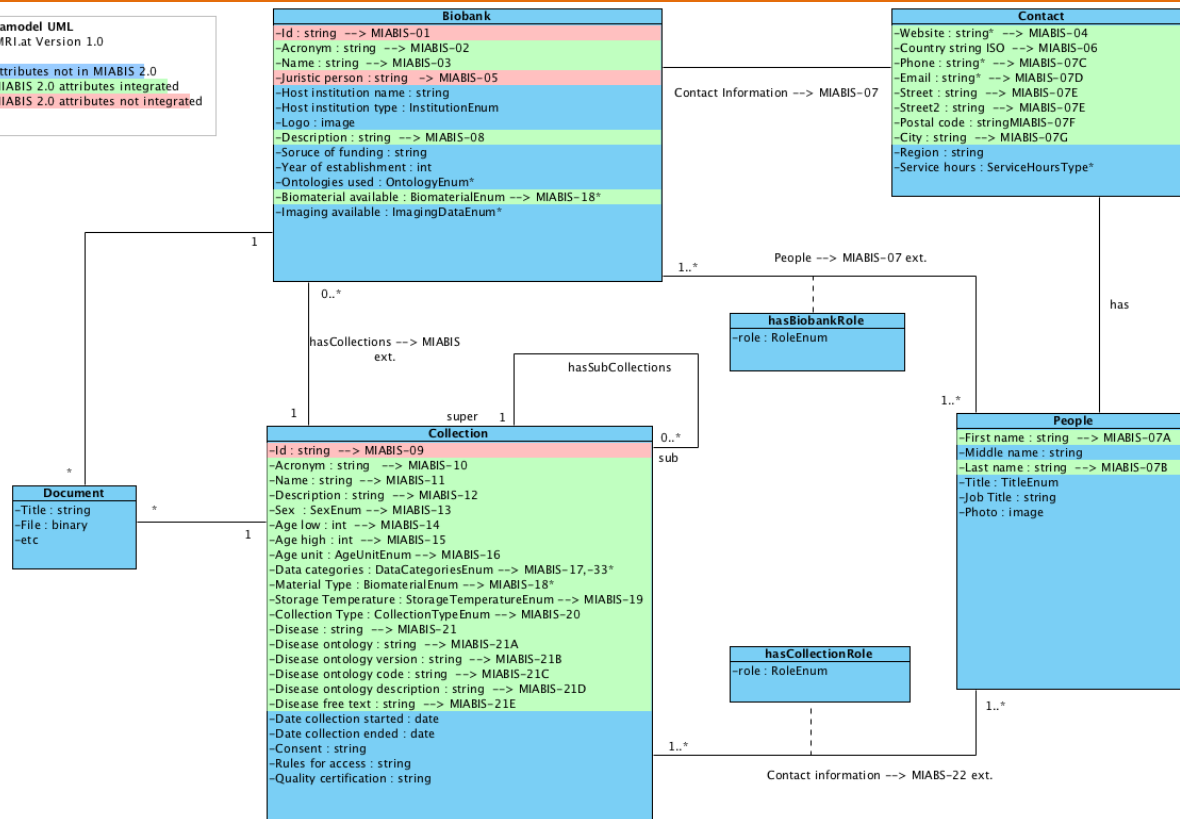
Name	ICD10	OMIM	Orphacode	Number of patients / donors	Data collected (MIABIS-17)	Specify other data collected	Material type collected (MIABIS-18)	Specify other material type collected	Survey data information	Specify other Survey Data Information	Access
Inflammation					Biological sample		Tissue	Cryo preserved			Access in controlled international environments/pr
Inflammation				386	Biological sample		Tissue paraffin preserved				Access in controlled international environments/pr
Tumour					Biological sample		Tissue	Cryo preserved			Access in controlled international environments/pr

Data Model V1.0 1/2

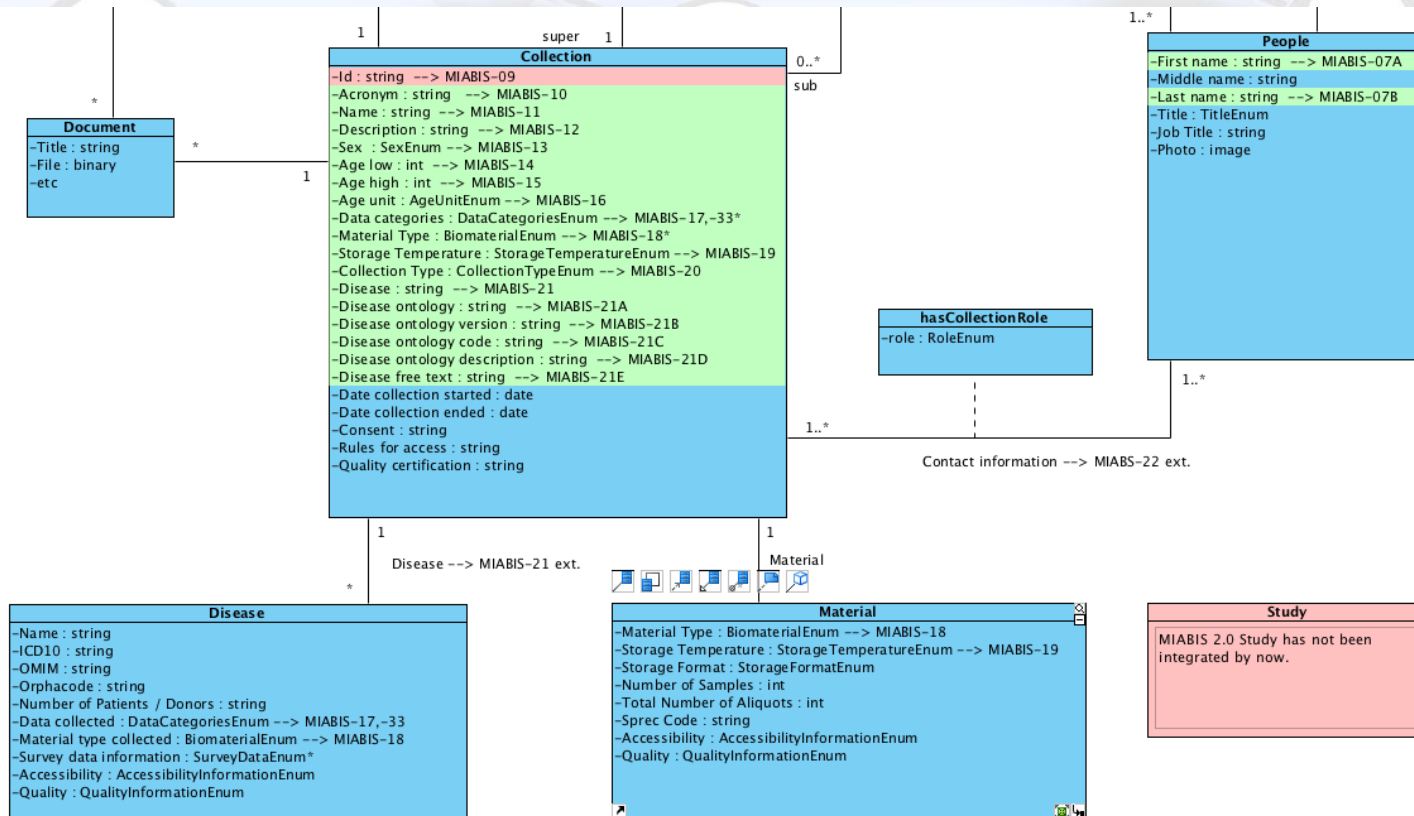


Datamodel UML
 BBMRI.at Version 1.0

- Attributes not in MIABIS 2.0
- MIABIS 2.0 attributes integrated
- MIABIS 2.0 attributes not integrated



Data Model V1.0 2/2



Data Exchange Linked Open Data Harvesting



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<http://bbmri.at/wob/bio-bank-graz>



Biobank A

Biobank B

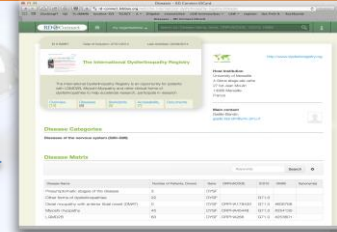
Biobank C

Biobank D

LOD
Linked
Data

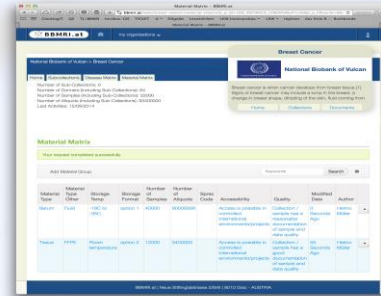
LOD
Linked
Data

RDF



RD Connect

<http://bbmri.eric/node/austria>



BBMRI-AT

RDF



BBMRI-ERIC

↑ ↑ ↑ ↑
other national nodes

URI pattern



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- <http://bbmri.at/wob/tissue-bank-gynecology-innsbruck>
- <http://bbmri.at/wob/tissue-bank-gynecology-innsbruck.rdf>
- <http://bbmri.at/wob/tissue-bank-gynecology-innsbruck.html>

- <http://bbmri.at/wob/tissue-bank-gynecology-innsbruck/tissuecol1>
- <http://bbmri.at/wob/tissue-bank-gynecology-innsbruck/tissuecol1.rdf>
- <http://bbmri.at/wob/tissue-bank-gynecology-innsbruck/tissuecol1.html>

Example



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```
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
```

```
@prefix foaf: <http://...>
```

```
@prefix miabis: <http://...>
```

```
<http://bbmri.at/wob/tissue-bank-gynecology-innsbruck>
```

```
  rdf:type:      miabis:biobank
```

```
  miabis:name   "Gewebebank, Gynäkologie, Innsbruck" ;
```

```
  miabis:web    http://frauenheilkunde-innsbruck.uklibk.ac.at/
```

```
  miabis:PI     http://bbmri.at/wob/tissue-bank-gynecology-innsbruck/persons/Elisabeth_Mueller_Holzner;
```

```
<http://bbmri.at/wob/tissue-bank-gynecology-innsbruck/persons/Elisabeth_Mueller_Holzner>
```

```
  rdf:type:      foaf:Person
```

```
  foaf:name      "Elisabeth Müller Holzner"
```

```
  foaf:mbox      elisabeth.mueller@i-med.ac.at
```

```
  foaf:based-near http://dbpedia.org/resource/Innsbruck
```

Current Work and Outlook



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- **Data Model 2.0**
 - incorporation of user feedback
 - full integration of MIABIS 2.0 (3.0?)
 - integration of SOP and quality information
 - samples? → BBMRI-ERIC pilot study
- **Interoperability**
 - RDF-representation
 - Linked Open Data interfaces
- **Query interfaces**
 - graphical user interface (on platform)
 - SPARQL

Further Topics requested ...



- registry mechanisms → via platform; planned: 2-step review workflow
- data models used → mandatory BBMRI.at Data Model / MIABIS-mapping
- incentives to participate → BBMRI-participation & growing need to cooperate / exchange / publish
- granularity of registered data → aggregated on level 1 and 2; not on level 3
- coverage / completeness → currently: unknown
- focus of biobanks → clinical and epidemiological
- perspectives → project-oriented and biobank-oriented
- timeliness of data → currently: calls for data-collection rounds; responsibility of editors
- preparedness for exchange → to ERIC: basically yes; LOD: in development



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THANK YOU!

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