



Unlocking the Power of Veterinary Samples- A Promising Source for “One Health” Research

Monika Wieser, VetBiobank, University of Veterinary Medicine, Vienna

Working Group QMS, 10.Sept..2024

Funded by grant number 2023-0.752.780 Federal Ministry Republic of Austria Education, Science and Research

VETBIOBANK – CLINICAL VETERINARY SAMPLES UNIVERSITY OF VETERINARY MEDICINE, VIENNA



Founded: 2007, **Head:** Ingrid Walter, **Staff members:** 2,5 FTE

Consortium Partner of **BBMRI.at** since 2013

Type: Non-human (companion animals)
Disease based

Focus: Tissues from tumor & healthy reference samples

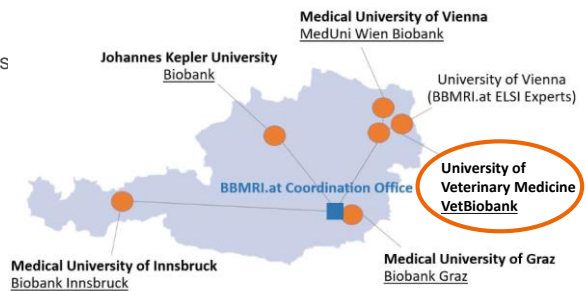
Size: >65000 samples

Quality: Standardized sample & data management
Preanalytical standards implemented

Description:

Walter I, et al. 2020 VetBiobank, Vetmeduni Vienna: A biosource for clinical animal biospecimens. *Open Journal of Bioresources*, 7: 9. DOI: <https://doi.org/10.5334/ojbr.60>

BIORESOURCE PAPER
VetBiobank, Vetmeduni Vienna: A biosource for clinical animal biospecimens
 Ingrid Walter, Stefanie Burger, Melanie Stargardt, Stefan Kummer and Monika Wieser
 University of Veterinary Medicine, VetCore Facility of Research/VetBiobank, AT
 Corresponding author: Ingrid Walter (ingrid.walter@vetmeduni.ac.at)



Working Group QMS, 10.Sept..2024

2

Funded by grant number 2023-0.752.780 Federal Ministry Republic of Austria Education, Science and Research

VETBIOBANK – CLINICAL VETERINARY SAMPLES

UNIVERSITY OF VETERINARY MEDICINE, VIENNA



Founded: 2007, **Head:** Ingrid Walter, **Staff members:** 2,5 FTE

Consortium Partner of **BBMRI.at** since 2013

Type: **Non-human** (companion animals)
Disease based

Focus: Tissues from tumor & healthy reference samples

Size: >65000 samples

Quality: Standardized sample & data management
Prenalytical standards implemented

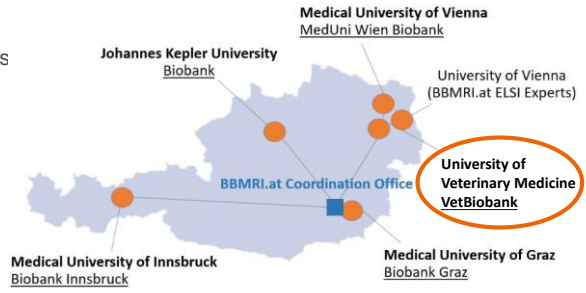
Description:

OPEN JOURNAL OF BIORESOURCES Walter I, et al. 2020 VetBiobank, Vetmeduni Vienna: A bioresource for clinical animal biospecimens. *Open Journal of Bioresources*, 7: 9. DOI: <https://doi.org/10.5334/ojb.60>

BIORESOURCE PAPER

VetBiobank, Vetmeduni Vienna: A bioresource for clinical animal biospecimens

Ingrid Walter, Stefanie Burger, Melanie Stargardt, Stefan Kummer and Monika Wieser
University of Veterinary Medicine, VetCare Faculty of Research/VetBiobank, AT
Corresponding author: Ingrid Walter (ingrid.walter@vetmeduni.ac.at)

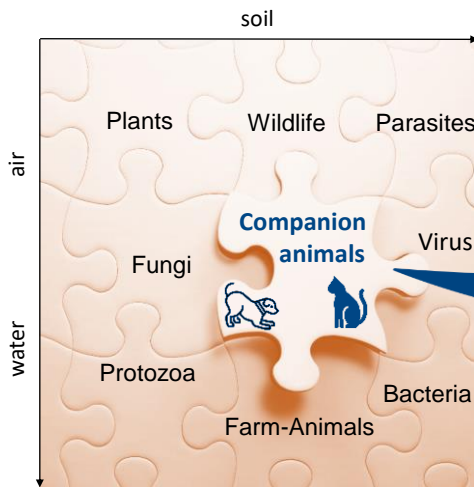


Working Group QMS, 10.Sept..2024

3

Funded by grant number 2023-0.752.780
 Federal Ministry Republic of Austria Education, Science and Research

HUMAN vs. NON-HUMAN



Working Group QMS, 10.Sept..2024

Funded by grant number 2023-0.752.780
 Federal Ministry Republic of Austria Education, Science and Research

SAMPLE & DATA MANAGEMENT I



1. Patient treatment

- Background information: animal (species, breed), age, sex (female, male, neutered)
- Health status (e.g. healthy, disease type, concomitant disease)
- Routine medical treatment (e.g. medications, diagnostic procedures)

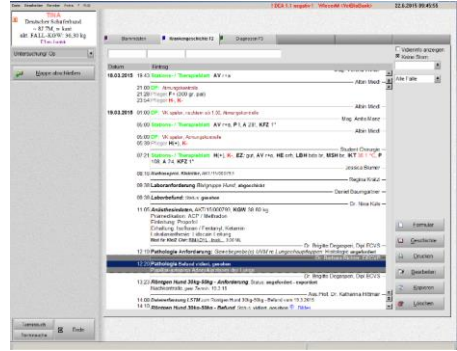
2. Anesthesia/Surgery

- Anesthetics
- Medications
- Surgical procedures (e.g. biopsy)
- Arterial clamping time

3. Sample collection

- Time of tissue removal from the body
- Description of tissue type and tissue condition (e.g. diseased, unaffected by the disease, collection site, any marking made by surgeon or radiologist)
- Recording of any additions or modifications e.g. labelling for orientation by ink

TIS: Information system of the veterinary clinic



Funded by Federal Ministry of Education, Science and Research
 grant number 2023-0.752.780

Working Group QMS, 10.Sept.,2024

SAMPLE & DATA MANAGEMENT II



4. Transport

- Controlled (time & temperature monitoring) at 2-10°C



VetBioBankNr. 2921, 2922		
Datum	Uhrzeit	Internal NTC Alarmtyp
08.11.2016	1:57:57 PM	6,79 START
08.11.2016	1:58:57 PM	7,53
08.11.2016	1:59:57 PM	7,67
08.11.2016	2:00:57 PM	7,7
08.11.2016	2:01:57 PM	7,72
08.11.2016	2:02:57 PM	7,71
08.11.2016	2:03:57 PM	7,7
08.11.2016	2:04:57 PM	7,7
08.11.2016	2:05:43 PM	7,91 ENDE

Funded by Federal Ministry of Education, Science and Research
 grant number 2023-0.752.780

Working Group QMS, 10.Sept.,2024

SAMPLE & DATA MANAGEMENT III



5. Processing

- [Formalin fixation](#)
- [Cryopreservation](#)



formalin-fixed paraffin embedded (FFPE)

cryoprotected (OCT) LN₂

tubes native LN₂

tubes RNAlater LN₂



SOPs

Tumor Data Registry



- internal identification number (VetBiobank number)
- date
- animal number, case number (TIS)
- name of sender
- species
- sample type (organ of origin)
- start/end sample transport
- start/end sample preparation
- prepared samples
- fixation end
- Diagnosis
- data entered into database

Working Group QMS, 10.Sept.,2024

0.752.780

Education, Science and Research

PROCESSING: FREEZING METHOD



Freezing methods in biobanking standards		
LIQUID NITROGEN	ISOPENTANE PRECOOLED WITH DRY ICE OR LIQUID NITROGEN	LIQUID NITROGEN VAPOR
ISO 20184 (2018)	ISO 20184 (2018)	
ISBER Practice (2024)	ISBER Practice (2024)	
NCI Best Practices (2016)	NCI Best Practices (2016)	NCI Best Practices (2016)
	IARC Technical Publication No44 (2017)	
	General TuBaFrost SOP (2007)	
Canadian Tissue Repository Network (2020)	Canadian Tissue Repository Network (2020)	
Molecular Medicine Ireland (2010)	Molecular Medicine Ireland (2010)	
Australasian Biospecimen Network (2007)	Australasian Biospecimen Network (2007)	
VetBiobank		



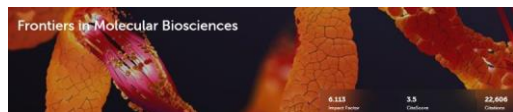
Process validation

1. Optimization: Comparison of all three freezing methods for liver and muscle tissues
2. Validation: Freezing method with best morphological outcome was tested for:
 - Reproducibility
 - Robustness
3. Performance: Fit for purpose for RNA analysis

ORIGINAL RESEARCH
Accepted on 20 Jul 2022

Example for process validation in biobanking: Fit for purpose testing of a cryopreservation method without isopentane

Monika Wieser · Stefanie Burger · Reinhard Ertl · Stefan Kummer · Melanie Stargardt · Ingrid Walter



Frontiers in Molecular Biosciences
doi: 10.3389/fmols.2022.876670

Funded by grant number 2023-0.752.780

Federal Ministry Republic of Austria Education, Science and Research

Working Group QMS, 10.Sept.,2024

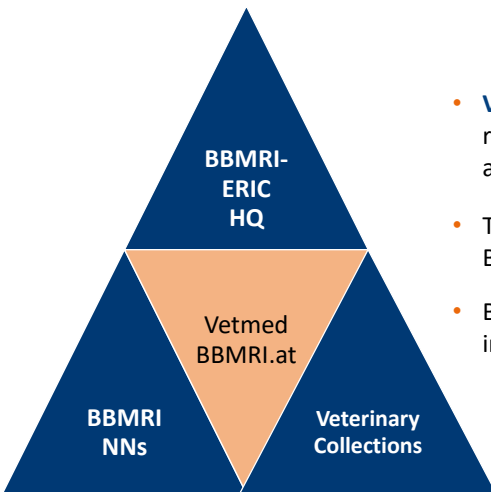
ONE HEALTH

is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems (WHO)

HISTORY
 1855: Rudolf Virchow "Comparative Pathology"
 1965: Calvin Schwabe "One Medicine"
 2004: Wildlife Conservation Society "One Health"
 Its use continued.....WHO, OIE, FAO, CDC,



WP5 BBMRI.AT#3 – OVERVIEW – TASK I



- **Veterinary sample collections** are recognized as valuable resource for the **Comparative Medicine/One Health** approach
- The involvement of veterinary collections is an asset to the BBMRI-ERIC consortium.
- BBMRI.ERIC and Vetmed will work together to include/support providers of veterinary collections.



vetmeduni

Veterinärmedizinische Universität Wien

CONTACT DETAILS

Monika Wieser

Ingrid Walter

Veterinärmedizinische Universität Wien

Veterinärplatz 1

1210 Wien, AUSTRIA

monika.wieser@vetmeduni.ac.at

ingrid.walter@vetmeduni.ac.at

THANK YOU!

Working Group QMS, 10.Sept..2024

Funded by
grant number 2023-
0.752.780

 **Federal Ministry
Republic of Austria**
Education, Science
and Research