**Projektantragsformular (Version 5\_2016)**

**Small Animal Imaging at Rostock University Medical Centre**

The Center for Small Animal Imaging at the Rostock University Medical Center is a core facility run by the Medical Faculty of the University of Rostock, operated by the Department of Nuclear Medicine and the Institute for Experimental Surgery.

**- Rules -**

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# Service

Instrumentation:

Small Animal PET/CT Siemens Inveon PET/CT

Small Animal MRT 7T High-Field-MR, Bruker BioSpec 70/30

Autoradiography Raytest CR-35 Bio

Dose Calibrator MED Isomed 2100

Well Counter Capintec CRC®-55

Quality control of these devices is performed by staff of the Core Facility “Small Animal Imaging”.

# Organisation

## Steering Committee

The steering committee is the scientific board to which scan time requests and any other issues concerning research projects should be directed, as stated in the rules of procedure for the Core Facility.

The members are:

Prof Dr. Bernd Joachim Krause

Department of Nuclear Medicine

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Prof. Dr. Brigitte Vollmar

Institute for Experimental Surgery

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## Scientific Staff

The scientific staffs support the project groups in planning experiments, setting up measurement protocols and in processing of the acquired data. They are also responsible for the optimization and development of the measurement devices.

The members of the Scientific Staff are:

**Small Animal-PET/CT**

Dr. rer. nat. Jan Stenzel, Biologist

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**Small Animall-MRI**

Dr. rer. nat. Stefan Polei, Physicist

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Dr. rer. hum. Tobias Lindner, Engineer

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**Radipharmacy and PET/CT-Instrumentation**

The scientific staff of the core facility is supported by experts for Radiopharmacy and Instrumentation for PET/CT from the Department of Nuclear Medicine.

Dr. rer. nat. Alexander Hohn, Radiopharmacist

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Dr.-Ing. Jens Kurth, Medical Physicist

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## Technical Staff

The technical staff is responsible for the state-of-the art use of the available instrumentation, QC, and data archiving. Also the keeping of the small animals is organized by staff of Core Facility.

All measurements will be performed by the technical staff.

The members of the Technical Staff are:

**Technologist:**

Romina Rauer, VTA

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**Animal Keeping**

Anne Möller

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# Application for scan time

The researcher, who wants to use the imaging facility, has to hand in a written protocol to the steering committee (see appendix A, B and C). The committee will discuss the suitability of the proposed protocols and animal experiments to validate the working hypothesis.

Once the project has been approved by the steering committee, the project leader should discuss measurement details with the head technologist and arrange for scanning time. Information on acquisition options can be found in appendix D.

# Costs

Additional costs for the project will be calculated on an individual basis. For projects that have been approved by the steering committee the facility, the small animal imaging equipment as well as personnel of the small animal imaging core facility are free of charge. Additional costs (i.e. anesthetics, cannula, MRI/CT contrast media, radiopharmaceuticals, etc.) will be charged based on an individual calculation.

# Appendix A

**Guideline for preparing a study protocol**

Please use this template.

1. Name of study: study #:
2. Name of the project leader:
3. Name, number of the animal allowance
4. Background of the study (if available, please attach already published literature of comparable studies)
5. Aim
6. Methods
7. Start date of the project:
8. Animal type:
9. Estimated total number of animals for entire study:
10. Number of animals in pilot study:
11. Number of scans per animal: Number of repetitive measurements:
12. Tracer, isotope, activity:
13. Acquisition duration:
14. Single or multiframe (indicated individual frame duration)?:
15. Position of the animal on the bed (i.e. supine or prone), use sketch if appropriate. Use multiple bed positions if necessary.

axial FOV 9cm

z-axis

animal holder

1. Anaesthesia: type and form of application. Antagonist? Animal eye protection?

1. Is monitoring of the animal during the measurement (period of anaesthesia) required (e.g. temperature, ECG, Resp):

# Appendix B

**PET Measurement protocol**

(To be completed by someone from the project group present during the measurement and by J. Stenzel and/or R. Rauer)

*General:*

1. Daily QC 
2. Data saved and given to the project group 
3. Data stored on the central backup facility 
4. Unexpected phenomena:

*Anaesthesia:*

1. What substances are used for anaesthesia:
2. How much anaesthesia is used:
3. Time of application of the anaesthesia:
4. Time of application of the antagonist (if applicable):

*Measurement:*

1. Date:
2. Name of the project leader:
3. Short ID: tracer / animal / region (max. 15 char. total)
4. ID of current measurement series within the total project:
5. Filename: p /s
6. Weight: g
7. Isotope: Tracer:
8. Activity in syringe before injection: MBq time:
9. Activity in syringe after injection: MBq time:
10. Injected activity: MBq time:
11. Animal orientation (prone / supine; + sketch):
12. Table position (gantry readout):
13. Start time of the measurement:
14. Measurement duration:
15. Measurement protocol:

# Appendix C

**MRI Measurement protocol**

(To be completed by someone from the project group present during the measurement and by T. Lindner and/or S. Polei)

*Measurement:*

Date:

Animal name:

Study name (max. 16 chars total):

Position (e.g. head prone + head first):

Coil used:

Gradient / Shim used:

Adjustment setting (e.g. MRI\_Default):

Frequency adjustment applied? (Wobble):

Additional info:

Sequence list (e.g. E1/Localizer; E2/T2TurboRARE):

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*Anaesthesia:*

Substances used for anaesthesia:

Amount of anaesthesia applied:

Start of anaesthesia:

End of anaesthesia:

*Post-scan procedure:*

Animal awake and moving / normal behaviour:

Record added to lab book:

Data stored and given to project group:

Start time of measurement:

End time of measurement:

# Appendix D

Planning the experiment:

* What anaesthesia is going to be applied? How long before the measurement will it be applied? How is the animal going to wake up (i.e. using an antagonist)? What is the mass of the animal (weight)?
* Which tracer is going to be used and which isotope? How much of it is going to be used (assay\_activity and assay\_time)? How long before the measurement will it be applied (time\_delay)?
* How will the tracer be applied (e.g. tail vein?)
* Measurement duration
* Is any monitoring of the animal during the measurement required (e.g. temperature). Do you need to actively keep the animal warm?
* Is catheterization of the urinary bladder of the animal possible?